

Springer Texts in Business and Economics

Michael Kleinaltenkamp
Wulff Plinke
Ian Wilkinson
Ingmar Geiger *Editors*



Fundamentals of Business-to-Business Marketing

Mastering Business Markets

 Springer

Springer Texts in Business and Economics

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Preface

The creation of economic value in business-to-business (B2B) markets far surpasses value creation in business-to-consumer (B2C) markets. In Germany, the largest European economy, the ratio is about three to one. Interestingly, this is not reflected in balance of attention mainstream marketing scholars and professionals have given to B2B marketing.

This book is the first in a four volume series *Mastering Business Markets*, which are based on corresponding German language books. This volume, “Fundamentals of Business-to-Business-Marketing,” focuses on key market processes and the basic components of B2B marketing, including customer buying behavior and business market research. The next three volumes focus on different aspects of the development and implementation of business marketing strategies: Volume 2 deals with “Developing Marketing Programs for Business Markets”; Volume 3, which has already been published, is on “Business Relationship Management and Marketing”; and Volume 4 is on “Business Project Management and Marketing.” Together, these volumes cover all the activities, processes, methods, and strategies required to understand and analyze business markets and to develop and implement effective business marketing strategies.

We would like to thank a number of people for their invaluable contributions. First, we thank all the authors who contributed to this volume, as well as all the other researchers who have been involved in preparing material for the volumes, especially Prof. Dr. Frank Jacob, ESCP Europe, Campus Berlin. At Springer, Dr. Prashanth Mahagaonkar has done a fine job as our copy editor. In addition, our research assistants Antonia-Ioana Sintu and Tuba Bulut have done excellent work in designing the figures and tables. Finally, our research associate Marie Blachetta rendered outstanding service in coordinating and managing the editing process. Of course any remaining mistakes are the responsibility of the editors.

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Contents

1	The Market Process	1
	Wulff Plinke and Ian Wilkinson	
2	The Core Concept of Marketing Management	77
	Wulff Plinke	
3	Introduction to Business-to-Business Marketing	129
	Michael Kleinaltenkamp	
4	Business Buying Behavior	171
	Sabine Fließ, Wesley Johnston, and Christina Sichtmann	
5	Procurement Policy	227
	Bernd Günter, Matthias Kuhl, Markus Ungruhe, and Ian Wilkinson	
6	Business Market Research	275
	Frank Jacob and Rolf Weiber	
	Index	327

Wulff Plinke and Ian Wilkinson

1.1 Exchange

1.1.1 Simple Exchange

This chapter describes an elementary human activity—exchange. A basic model is introduced in which exchange is viewed as an activity involving two parties giving and taking from each other, thereby creating benefits and costs for each other. The parties engage in exchange in order to solve a problem. The nature and outcomes of exchange are affected by various factors including: the search for value, the limited rationality of the parties involved, and the need to deal with uncertainty and risk. These are introduced in the next section. The Brothers Grimm fairy tale “Lucky Hans” is used to illustrate the model.

1.1.1.1 A Basic Model of Exchange

We do not live in Shangri-La. Fried chickens or partridges do not fly directly onto our dinner plates, and milk and honey do not flow of their own volition to people who are hungry or thirsty. Instead, all people have to obtain goods and services to survive and to reach their goals. The same is true for firms and other organizations. In order to survive and to reach their goals, firms need resources such as tangible goods, services, people, rights and titles, information, and finance. Goods, services,

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and resources are means to solve problems¹: people need goods and services to varying degrees in order to eat, drink, warm themselves, move about, decorate, defend themselves, to be respected, and so on. Firms need resources to produce, research, develop, transport, sell, buy, administer, and so on.

Both people and firms make arrangements to ensure access to resources critical for their survival, as well as for less important things. They create different types of organization and physical structures and undertake various kinds of activities such as purchasing, stockholding, and supply management. In addition, firms as well as people protect themselves from undesired elements in various ways. For example, human organisms resist the intrusion of germs or protect themselves from the weather, and firms fight with government over rules and regulations governing their business.

To survive and achieve their goals firms, not only procure and retain goods and resources, they also generate outputs for others. First, firms produce and supply goods and services to other people, firms, and organizations. Second, they produce things as by-products of their activities, which are not necessarily regarded as valuable by others, such as waste products, residues, waste heat, and pollutants. We term these things “bads” to contrast goods (Dyckhoff, 1994). The disposal of these by-products has to be managed and handled. Third, from time to time, firms must get rid of surplus resources including people, machinery, products, and land. Fourth, firms give financial resources to other firms in exchange for goods and services, and other resources. Finally, firms are required to use some of their financial resources to pay taxes, charges, and fees imposed on them by governments.

Households engage in similar types of activities in order to survive and achieve their goals. They supply labor to firms and other organizations in exchange for financial resources; they produce by-products such as waste and noise that have to be dealt with. Goods, services, and other resources are obtained in exchange for financial resources and, finally, financial resources are used to pay taxes and charges imposed by governments.

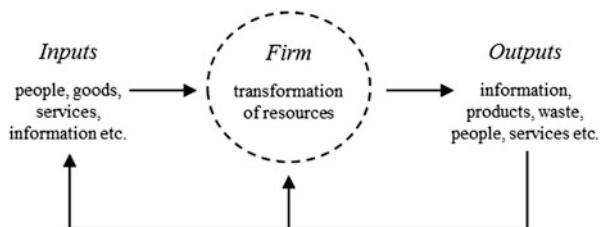
People as well as firms create material and organization structures and undertake many types of activities to secure their survival, to ensure access to needed goods, services, and other resources, and to dispose by-products.

People, households, and firms are open systems.² They obtain inputs in the form of goods, services, and resources from people, organizations, and the environment. On the one hand, they use, consume, and/or transform these inputs. On the other hand, they supply output in the form of goods, services, and other resources, including by-products, to others. They are not able to survive in the long run

¹ As Karl R. Popper (1999), the famous philosopher of the twentieth century, says: “all life is problem solving.”

² A system is an “organized, unitary whole composed of two or more independent parts, components, or subsystem and delineated by identifiable boundaries from its environmental super system” (Kast & Rosenzweig, 1985).

Fig. 1.1 The firm as an open system (Source: Kast & Rosenzweig, 1985)



without obtaining inputs and without generating outputs (Katz & Kahn, 1978; Pfeffer & Salancik, 1978; von Bertalanffy, 1953). These are the characteristics of an open system. Figure 1.1 illustrates this.

Open systems are involved in a struggle for survival. Various types of external forces threaten their survival, and arrangements have to be made to protect the system. These arrangements must cover access to goods, services, and resources as well as the supply and disposal of goods, services, resources, and by-products: The effective management of inputs and outputs is a prerequisite for the survival of a system.

The history of mankind provides many examples of different types of open systems, with different types of inputs, internal transformation processes, and outputs. There are many ways in which we can get something we do not have but would like to have, as well as ways of getting rid of something we rather would not have. Table 1.1 shows some possible options.³

We all know that there are various ways of obtaining and disposing of goods, services, and resources (hereafter the term goods is used to refer to all three types), apart from producing and consuming them ourselves (option 1). Other means of solving problems involve both legal (option 2.1) as well as illegal (option 2.2) means of obtaining and disposing of goods. The latter involves transfers of goods without the approval or against the will of the other party, be it another person or organization (e.g., robbery) or the natural environment (e.g., emission, exhaust air, sewage). Obtaining and disposing goods through fund raising and donations (option 3) as well as through exchange (option 4) are characterized by the transfer of property rights (including ownership and usage rights) from one party to another. This requires the agreement of the parties involved to the transfer (Alchian & Demsetz, 1973; Williamson, 1985).⁴ Even though fund raising and donations appear to be unilateral transfers of property rights, they will not take place unless the receiver as well as the donator agrees to it.

³ See also Dixon and Wilkinson (1982/1989, 1986) on the different ways of meeting our needs and the different types of exchange that exist to accomplish this.

⁴ Property rights result from the rules that the state lays down to organize the society (laws). Property rights on goods and resources therefore regulate the potential conflict for the distribution of scarce resources and goods. In specific, property rights include the authority on use, the authority on acquisition of the profit, the authority on alteration of form and substance, as well as the authority on sale.

Table 1.1 Means of obtaining and disposing goods in an open social system

Means of obtaining goods	Means of disposing and using goods
1. Production	1. Consumption, use, destruction, processing
2. Taking from somebody: 2.1 Socially acceptable: e.g., consumption of goods from nature (berries, fish, air); social borrowing 2.2 Socially unacceptable, e.g., robbery, piracy, slavery	2. Giving to somebody: 2.1 Socially acceptable, e.g., legal disposal of domestic waste, automobile exhaust gas, gifts, social lending 2.2 Socially unacceptable, e.g., illegal garbage dumping, illegal burning
3. Fund raising, e.g., securing sponsors, begging	3. Donating, e.g., sponsoring, contributing to charities
4. Buying, leasing, renting	4. Selling, leasing, renting

Exchange is a special type of mechanism for obtaining and disposing of goods. Voluntary exchange involves reaching agreement between the parties to the transfer of goods. The buyer needs the agreement of the seller in order to receive the property rights to a good, and the seller needs the agreement of the buyer in order to sell a good.⁵ Exchange always involves a reciprocal transfer of property rights between the parties.⁶ Both parties undertake work—though probably to a different extent—in order to reach an agreement on the conditions for the reciprocal transfer of property rights. The development, design, and control of an agreement between two (or more) parties for the reciprocal transfer of rights make exchange a very specific category of social activity.

Definition 1: Exchange

The activities directed toward the development, design, and control of a mutually intended transfer of property rights between two or more parties.

“Mutually intended transfer of property rights” means that one side offers something, such as property rights for a tangible good, a service, or know-how expecting in turn to receive something from the other side (“do ut des”⁷). The giving and receiving of property rights are therefore inherently interrelated.⁸

In any case an economic actor, either an individual or a firm, makes a decision on how to obtain the goods in need. Options 1 and 4 represent the classic make or buy

⁵ Exchange contracts cover more than purchase and sales agreements. They also include leasing arrangements, license agreements, credit contracts and employment contracts. In the following, for simplicity, we only refer to purchase and sale in terms of transfer of property rights.

⁶ This condition can only be applied to the ordinary exchange. For further generalizations of this condition: see Sects. 1.2 and 1.3 and Dixon and Wilkinson (1982/1989).

⁷ (Latin) = “I give so that you give” (Roman legal principle).

⁸ “The central idea here is that when two or more people interact, each expects to get something from the interaction that is valuable to him, and is thereby motivated to give something up that is valuable to others” (Simon, 1978).

alternatives for solving problems in a modern economic system. People and firms decide whether to solve a problem by producing goods for themselves (i.e., make) or by obtaining those from others through exchange (i.e., buy). People and firms also decide whether to use or dispose of resources through internal activities such as consumption and processing or through exchange with others.

The purpose of exchange is to overcome the discrepancy between the goods available and the goods still needed to solve a problem (Alderson, 1957). Such a discrepancy is a state which an actor (person, household, organization, or firm) regards as unsatisfactory to some degree. For an exchange to take place, it is required that at least two actors, at the same time, perceive such a discrepancy between actual and desired goods, and that the parties involved are willing and able to transfer the goods required by the other. The exchange has to be a solution to the problems for the buyer and the seller. Buyers and sellers are involved in a joint search to solve their problems via the mutual transfer of goods. If they can reach an agreement, the parties involved will, simultaneously, make a contribution to solving each other's problems.

The dependence of a system on resources delivered by its environment leads to the need for continuous planning, organizing, and controlling of exchanges for it to survive. Firms engage in exchange with various owners of resources including employees, investors, sellers, customers, consultants, and researchers. In this book, we limit ourselves to the consideration of exchange as a way to handle these interdependences between resource owners and users.

Exchange has essentially the same basic characteristics no matter what type of exchange we consider, such as the market for goods or services, jobs, finance, or information. But here we will consider only exchanges taking place in markets for goods and services. From this perspective marketing activities may be seen to arise: (a) because a buyer needs goods (or wants to avoid bads) he cannot or does not want to produce on its own or deal with on its own and is prepared to give other goods to (or take away bads from) a seller in return and (b) because a seller is prepared to transfer goods it possesses currently against other goods.

The transfer of goods and bads through exchange is more than just a physical distribution process. While exchange involves carrying out various types of physical activities such as transportation, goods handling, display, and stockholding, it also involves reaching an agreement on affecting an exchange of tangible and intangible values. In this chapter, we adopt a more economic perspective, focusing on the valuation process involved in market exchange. We will examine transfers of goods and bads on the basis of the value added to or value taken away from a system. We concentrate on value, because human decision making is a central aspect of market exchange. Economic units make decisions on the types of goods they want and how to obtain them. They also decide which goods they are prepared to give away and how to do this. These decisions are made based on the evaluations of the parties involved.

The transfer of goods and bads is valuable if the following conditions are met. First, the goods or bads are provided to or reduced for an actor and, second, the

transfer contributes to the actor's goal achievement, i.e., the current state of affairs is improved compared to what it would be otherwise.

The transfer of goods and bads can be evaluated positively as well as negatively depending on the perceived effect on goal achievement. No matter whether an individual or an organization managed by individuals is affected, values are always assessed by humans with respect to goal achievement. It is for this reason that goods or bads do not have any intrinsic value. This is nicely captured in the words of the famous English political economist William Stanley Jevons (1911):

In the first place, utility, though a quality of things, is *no inherent quality*. It is better described as a circumstance of things arising out of their relation to man's requirements. . . We can never, therefore, say absolutely that some objects have utility and others have not. . . Nor, when we consider the matter closely, can we say that all portions of the same commodity possess equal utility. Water, for instance, may be roughly described as the most useful of all substances. A quart of water per day has the high utility of saving a person from dying in a most distressing manner. Several gallons a day may possess much utility for such purposes as cooking and washing, but after an adequate supply is secured for these uses, any additional quantity is a matter of comparative indifference.

The value of something depends on its potential to make a positive or negative contribution to the solution of a particular actor's problems. Thus, value depends upon the relationship between the good and an actor and their problems. Theoretically, perceived value is defined as the difference between the situations of a person without the good compared to the situation of a person with the good. The amount of value depends on the perceived difference in goal achievement resulting from the acquisition or disposal of the good, service, or resource in question (see Fig. 1.2).

Exchange is a way of both acquiring and disposing of goods and bads. The central aspect of exchange is the assessment of value, not the physical flow of material. Furthermore, exchange involves a specific concept of value as illustrated in the following example.

Example

Alexander Selkirk is a frequently cited character in economic theory, because he lived in a simple world, at least from an economic perspective.⁹ He lived

(continued)

	Good	Bad
Acquisition	positive value	negative value
Disposal	negative value	positive value

Fig. 1.2 Value creation

⁹ Selkirk, a Scottish sailor lived for 5 years (1704–1709) on the Chilean island Más a tierra (Juan-Fernández). He later became famous as the main character and hero in Daniel Defoe's (1719) novel "The Life and Strange Adventures of Robinson Crusoe".

completely isolated on an island, which offered him sufficient food and shelter to survive. His survival is based on his ability to obtain goods from nature by hunting, fishing, or gathering, by tilling the soil, raising cattle, as well as by using his own talent to erect shelters to protect him from the elements and potential enemies. His value creating activities consist in creating value for himself—as long as he is alone on his island. To him, any activity is valuable if on that day it creates more value than other activities. To set up an economic plan, he can list all activities according to their urgency and then work through the list in order. His world is a pure production world, in which all problems are solved by the “make” option. Selkirk never has to ask anybody else what might be good for him—he knows best.

If *Selkirk* wants to solve a problem by engaging in exchange with others, such as with residents of a neighboring island, he must direct his abilities toward creating value for others. For his exchange partners, any good is valuable if the exchange creates an advantage for them, i.e., a net increase in value. Suppose he wants to buy a boat from his neighbors on the next island. What must he offer that they would regard as more valuable than the boat? His economic plan now includes researching his neighbors’ values. He would then have to adjust his production according to the value they see in different goods he can provide. His world turns into one in which a proportion of his problems is solved by the activities of buying and selling.

Exchange is considerably more complex than do-it-yourself or self-production activities, because divergent perceptions of the parties involved in the exchange have to be considered. Selkirk is well aware of what is good for him, but he does not necessarily know what is good for his exchange partners on the neighboring island.

Exchange is a process directed toward the creation of value. The activities (work, behavior) of the parties involved in the exchange, as well as the transfer of ownership and usage rights, result in the creation of positive and negative value for either side, based on their effect on either party’s goal achievement (Dixon & Wilkinson, 1982/1989, 1986). See Fig. 1.3.

Positive and negative values can be defined as follows: Benefits, or positive values, comprise the sum of all effects a party perceives as putting it into an improved position, i.e., enhances its goal achievement. This includes increases in the availability of valued assets as well as the disposal of or relief from bads and harmful assets. The negative counterpart to benefits are costs, where costs (Homans, 1961)¹⁰ comprise the sum all effects a party perceives as putting it in a

¹⁰ Here, the term “costs” signifies a sacrifice or damage. For this reason, the use of this expression differs from the usual economic term.

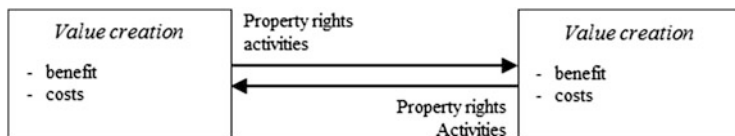


Fig. 1.3 Dyadic exchange

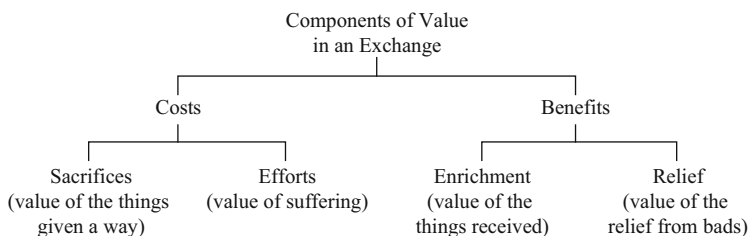


Fig. 1.4 Components of value in an exchange

worse position, i.e., diminishes its goal achievement. This includes: first, the value of any assets transferred to others as part of the exchange, i.e., the sacrifice made by no longer having the asset available for own use and second, the costs associated with developing and implementing the exchange agreement itself. The latter costs, referred to as transaction costs, include any negative effects not resulting directly from the assets provided to others in the exchange, including the efforts involved in reaching agreement and in monitoring and controlling the exchange. Figure 1.4 summarizes the different types of values involved in an exchange.

The value created on both sides of an exchange must be understood in a very broad sense in order to capture the process of exchange (Blau, 1964; Homans, 1961; Thibaut & Kelley, 1986).¹¹ In particular, we distinguish between two types of values:

1. Value emerging from the transfer of property rights¹² to material and nonmaterial assets, including tangible goods, services, energy, know-how, or money.
2. Value arising as side effects of the exchange. These include all the positive or negative effects on the other party, including any assistance provided and any good or bad effects on the relationships between the parties involved, such as their attitudes toward and perceptions of each other. An exchange may affect the power and influence each party is perceived to have, the degree of trust or mistrust they have in each other, their degree of cooperativeness toward each other, the respect and admiration accorded each other, and the level of risk and uncertainty perceived. Such effects may be valued positively or negatively by

¹¹ This perspective traces back to from the sociological exchange theory which interprets human group behavior as a system of reciprocal rewards and punishment (costs).

¹² By property rights we refer to both ownership and usership rights.

the parties involved, depending on the way these changes affect their goal achievement. In exchange between firms such effects include effects on the personal bonds or animosities that develop between the people involved in the exchange.

From the preceding discussion, we can see that the idea of exchange as “goods for money” is a gross simplification. The objects transferred in exchange cover a complex bundle of material as well as nonmaterial assets, including social symbols, services, favors, gestures, information, support, and guarantees. They also include any claims or threats made by either side, as well as failure to perform promised acts. All of these must be considered in terms of their positive and negative effects in order to understand an exchange. Value, in this sense, can result just as much from not doing something that is negatively valued by the other, as it can from doing something that is positively valued.

Example

Firm A agrees to supply firm B with a particular product and agrees to stop trading with another firm that competes with firm B. In this way, firm B receives exclusive rights to buy from A, which is a potential advantage to firm B.

Any exchange is based on subjective perceptions and decisions. An exchange will only take place if the two parties involved can reach an agreement whereby both parties perceive themselves better off as a result. To begin with, each party has its own objectives and expectations. If after some efforts by one or both parties these expectations and problem solutions match and both parties see each other as credible, an agreement can emerge. But such a match may not exist. And, if the exchange partners discover this is the case, one party will eventually withdraw from the exchange. Hence, not all interactions result in agreements with consequent transfers of assets. Exchange is a process that involves a sequence of activities over time in which each side participates. Part of this process can be referred to as *business mating* (Wilkinson, Freytag, & Young, 2005), which starts with initial efforts to attract the other side and ends when the parties regard the process as finished. It also involves ongoing interactions between the parties to reach agreement and to transfer goods and bads between them, which may be referred to as *business dancing* (Wilkinson & Young, 1994). Should any party not wish to continue the exchange at any time, it will discontinue its activities and stop the exchange, which is a type of business divorcing or separation. This can but need not necessarily be a signal for the other side to discontinue its activities as well, as happens when marriages and friendships break up.

The basic model of exchange considered up to now describes exchange in its simplest form as involving two parties, i.e., dyadic exchange. Actor A transfers something to Actor B and anticipates in turn something from B. From the

perspective of B the reverse situation applies. This simple form of exchange will be extended in Sects. 1.2 and 1.3.

Definition 2: Simple Exchange

Activity to prepare, organize, and control a mutually determined transfer of property rights between two parties.

1.1.1.2 Problems and Problem Solutions: The Motivation Behind Exchange

The nature of any exchange is determined by certain driving forces. These stem from the interests and motives of the parties involved, who, through exchange, try to solve their problems. But problems cannot be solved in any old way. Instead, a solution needs to be perceived as more favorable and better than alternatives.

From the point of view of one party, a surplus of expected benefits over expected costs (given an acceptable level of uncertainty) will be valued because it helps solve its problems. The extent to which expected benefits exceed costs makes the exchange more attractive, whereas perceived uncertainty can slow it down.

The following section develops a fuller understanding of the concept of problem solution by considering three elements: (1) In the search for problem solutions the parties are self-interested, and they seek advantages for themselves through exchange; (2) The pursuit of advantages is a particular feature of problem solving behavior; (3) When people search for solutions to their problems, they try to avoid or reduce risk and uncertainty.

Basically, the search for problem solutions is the major driving force behind exchange and the excess of benefits over costs, as well as the reduction of uncertainty, determine the extent of problem solution.

Problems and the Pressure for Problem Solutions

In general, the starting point for any exchange is a subjectively perceived actual or anticipated deficiency, a difference between the actual or expected state of affairs and target conditions. Exchange is a means of overcoming this deficiency (Dixon & Wilkinson, 1982, 1986).

Illustrations

- Due to unexpected growth in demand, existing manufacturing capacity turns out to be insufficient. Investment planning for expansion begins, which will eventually result in exchanges.
- Because of cost increases in the energy sector, a company starts to search for new energy-saving manufacturing processes. The company evaluates various alternative investments which will lead to exchanges.

(continued)

- The product range of a firm is incomplete and parts of it are not attractive to customers. One solution consists of asking a design studio to provide blueprints for new product variations. Exchange begins.
- The number of customer complaints recently increased significantly. A management consultant is employed to analyze the situation. Exchange begins.

Exchange is motivated by expectations that it will bring about an appropriate solution to a problem. Each exchange partner sees the exchange as means for the accomplishment of a particular task or the achievement of a particular goal. But what really is a ‘problem’?

Each potential exchange partner is in a state they perceive as unsatisfactory or incomplete. It is their intention to change their state of affairs from a less to more preferred situation with the help of exchange. If this were not so they would not engage in exchange. The discrepancy between the current and less satisfactory state and the desired future state is referred to as the “problem” if the following condition applies: the transformation of an initial state into a desired final state requires a process of search, selection, and implementation of appropriate means promising a possible problem solution. Figure 1.5 depicts the structure of a problem.

A gap between starting and target conditions, with as yet unknown means of reaching the target, creates a condition of stress or disequilibrium. For example, a buyer sees the need to reduce costs in their firm, but does not know-how to solve the problem. The target condition is lower costs. The means for reducing costs, such as the rationalization of production processes, probably includes investment in new production technologies. In this case, a problem solution could consist in buying new machinery, equipment, and systems. The driving force behind the exchange, from the buyer’s perspective, is the perceived need for cost reductions, which is in turn driven by the will to survive in the market under current competitive conditions.

In a similar way we can define the seller’s problem solving process as the search for means to accomplish tasks such as the generation of income to cover costs, to secure employment, to obtain liquid resources (money) to balance outstanding payment obligations, to pay dividends, and to provide a return on investment to the shareholders of the company. The degree of stress created by a problem, and

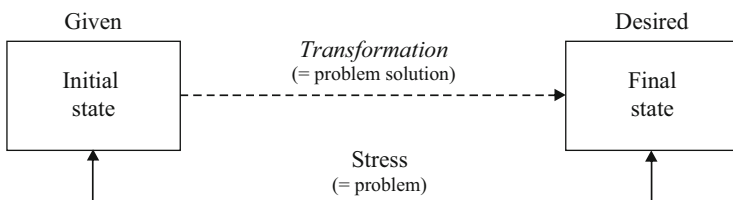


Fig. 1.5 The structure of a problem

hence the pressure to solve it, depends on the importance of the goal and the extent to which the means of solution are known and easily available.¹³ In short we can describe a problem as a task combined with the perceived pressure to find a solution.¹⁴

Definition 3: Problem

The perceived pressure to find a solution to a task.

The strength of the motivation to engage in exchange equals the pressure to solve a problem. Three types of factors affect this pressure:

1. The consequence of success or failure

The pressure to solve a problem will vary according to the perceived importance of fulfilling a task. If the execution of a task promises significant contributions to goal achievement, the exchange partner will try harder to solve the problem. Thus, adopting a new and promising technology will result in the input of significant amounts of energy and effort into the exchange. The more important are the anticipated consequences of failing to solve the problem, the greater is the pressure for solution.¹⁵ For example, if the customer is threatened by significant penalties if it fails to supply a particular service on time, they will be more concerned about securing the needed resources.

2. Complexity of the task and the availability of means of solution

The more complex the task is perceived to be, the greater the pressure and effort required to find a solution. A new task, such as the specification of a Computer Aided Design (CAD) system for the first time, creates more pressure and requires more effort to solve than a repeat purchase of a CAD system in an existing system configuration.

Limits on the resources available, financial or human, also increase the difficulty and pressure involved in finding a problem solution. This is because compromises have to be made with respect to budgets or the quality of the problem solution. Thus, if a firm lacks skilled employees to prepare an invest-

¹³ Regarding the term “problem” the degree of the perceived pressure to solve a problem is irrelevant. There may be different occurrences. The use of the word “problem” varies from everyday language. In everyday language, a “problem” describes a negatively evaluated state of stress that can hardly be overcome or not be managed at all.

¹⁴ The perceived pressure to find a solution does not necessarily have to be reduced by the transformation from an initial to a final state. The state of stress can also be reduced by adjusting and subjective readjusting the final to the initial state. For example, in this context irreversible circumstances have to be accepted.

¹⁵ Hereby, it is not a matter of lost consequences of the fulfillment but negative consequences that are anticipated by the decider in case of non-fulfillment.

ment decision, pressure will increase even when everything else remains unchanged.

3. Time pressure

The shorter the time available to solve a problem, the greater the pressure to find a solution. Time pressure may mean some options are not available, as when the time to submit a tender expires due to unexpected technical problems in tender preparation, or when costs will increase significantly if overtime rates have to be paid to extend working hour to complete a job on time.

Two other fundamental characteristics of people and organizations have an impact on the way they try to solve their problems. These are bounded rationality and the desire to avoid risks and uncertainty.

The Search for Problem Solutions: “Homo Oeconomicus” and “Administrative Man”

In economic theory, human behavior was, and to a large extent still is, assumed to be rational. By this we mean that economic theory assumes economic decision makers are rational people making free decisions and striving for individual advantages. “Homo oeconomicus,” as the decision maker is termed, strives for a maximum level of net benefit, i.e., benefits minus costs. This image of man goes right back to the beginnings of economic science and is a central assumption in Adam Smith’s major work ‘The Wealth of Nations,’ dating back to 1776 (Smith, 1976).

As a guide to thinking about human behavior, this perspective has frequently been criticized as too egotistic or self-centered. However, this model of behavior does not assume human beings are always and only egotistic and opportunistic (i.e., pursuing self-interest with guile to the disadvantaged exchange partners).¹⁶ In this book, when we discuss the economic decision maker’s search for advantages, we only imply that their behavior is directed toward the search for advantages for *their own side* in the exchange. In doing so, they can create advantages for themselves as well as for others, such as family members or the firm or organization they are a member of, as well as for their exchange partner. In this sense, exchanges can be purely motivated by altruism, the search for advantages for others (Giersch, 1993).

We do not assume that an exchange partner is altruistically motivated toward their exchange partner and in any exchange each party tries to reach the best outcome for its own side under the given circumstances. This does not exclude one side making concessions to the other that it does not necessarily need to do. But, behind these concessions, we expect some kind of indirect self-interest, such as creating better conditions for future exchanges with the same exchange partner or the achievement of noneconomic goals.

Another criticism of the assumptions of homo oeconomicus is the constant striving for maximum advantage. This criticism was developed mainly by those who developed the behavioral theory of the firm and, in particular, by American

¹⁶ For the distinction of egoism and opportunism, see Sect. 1.1.1.2.

Nobel Prize winner Herbert A. Simon. According to them, any market participant's search for a problem solution is indeed rational. But this does not mean searching for a maximum advantage. It only says that a person acts with respect to their own ideas of advantage as far as evaluation is concerned. An advantage results if the difference between the benefits and costs (both broadly defined) of one alternative is superior to all known alternatives—including not acting at all.

The evaluation of advantage is subject to various kinds of uncertainty:

- Have all alternatives been considered sufficiently?
- Has the nature of the situation been fully taken into account?
- Will the expected consequences of an alternative really materialize?

If uncertainty is present, the individual must consider whether a higher level of goal achievement can be reached by obtaining additional information, which will involve additional costs. The individual will compare the estimated improvement in goal achievement to the costs of additional information search. In this way maximization of advantage and minimum uncertainty are incompatible.¹⁷

Imperfect information, uncertainty about the consequences of an action, as well as the limited ability of the decision maker to process all the information argues against maximization behavior. A market participant does not strive for a maximum but rather a satisfactory or favorable problem solution.

The concept of rationality draws on people's empirically revealed preferences, which imply that rationality is related to their subjective goals, desires, and norms. As a consequence, we cannot draw on an independent and objective rationality to explain market activities or a precise definition of what is "right," "reasonable," "logical," or "intelligent" behavior. Instead, rationality reflects the desire for favorable results regardless of their subjective explanation.

This concept of rationality is based on the decision maker having multiple goals and limited information processing capacity. Economic behavior is "intendedly rational, but only limitedly so" (Simon, 1945). For the purposes of decision making, a decision maker creates a simplified picture of the situation limited to the subjectively relevant and critical factors. This is termed bounded rationality.

This view of decision making is applicable to an individual making decisions purely on their own behalf, as well as for actors involved in collective decision making, such as we find in firms and households. Table 1.2 compares the two perspectives of classical "homo oeconomicus" with "administrative man." In this book, we follow the more realistic perspective of the behavioral theory of the firm because it helps us to understand market activities better than the strict classical model.

¹⁷ Alchian (1950) already demonstrates that rational behavior in terms of the homo oeconomicus cannot be reconciled with the assumptions of imperfect information and uncertain predictions. For the signification of uncertainty: see the following section.

Table 1.2 Guiding principles of the economic and the behavioral theories of the firm

	Classical economic theory of the firm	Behavioral theory of the firm ^a
Guiding view of man	Homo oeconomicus: utilitarian image of man. Freedom of choice, a reasonable person strives for his/her individual advantage	Bounded rationality: a person is a problem solver who is intendedly rational, but has limited knowledge and information processing capabilities
Durability of goals	Goals are given and not subject to change	The individual is controllable and adaptive. Goals change over time (“organizational learning”)
Goal content	The individual pursues an increase in benefit or utility. Benefit is one dimensional. In the case of multiple benefits, they can be ordered and are free of contradiction	The individual pursues different goals simultaneously. They are not simply ordered and are not free of contradiction. Goals are finalized afterwards
Goal motivation	Maximization behavior. The individual always chooses the best of all possible alternatives	The individual strives for satisfactory solutions
Autonomy	The individual makes free decisions independent from external influences	The individual is influenced by reference groups
Information on alternatives	The individual knows all hypothetically possible alternatives. The decision situation is completely and objectively defined	The individual does not know all alternatives. Individuals create a subjective picture of the decision situation and search for further information with respect to the problem (“problem formulation”)
Information on consequences action	The individual knows all the outcomes of all possible activities	The individual acts under uncertainty about the consequences of his actions. Uncertainty is perceived as undesirable and the individual attempts to reduce it (“uncertainty avoidance”)
Lead time for decisions	Nil. The individual has infinite information processing capacities	Decision making is a time consuming process, consisting of various phases and sometimes multiple loops
Information costs	Nil. All information needed is available	The search for information creates costs

^aCyert and March (1963)

The Search for Advantage: Managing Uncertainty

Definition of Uncertainty

Both the seller and the buyer are guided by previous experiences as well as by future expectations. The more limited are an exchange partner’s experiences with the object of the exchange and his counterpart: (1) the more complex is the exchange; (2) the less precise are their expectations regarding courses of action and their consequences; and (3) the more uncertainty exists. Uncertainty is a state in which a decision maker perceives that an action has a number of possible outcomes. All exchange tends to take place under uncertainty and each party involved

perceives more or less uncertainty about the benefits and costs it expects from the exchange.

Sources of Uncertainty

Perceived uncertainty arises from three possible sources: (1) incomplete information about the behavior of the exchange partner; (2) external influences on the exchange; and (3) an actor's contribution to the exchange.

1. Incomplete Information About the Behavior of the Exchange Partner

The behavior of the exchange partner determines to a large extent, whether the exchange leads to the intended problem solution or not. A failure may occur because the exchange partner lacks the ability to provide the product or service agreed on. This is the case if the partner overestimates their capacity. Secondly, they may not want to provide the product or service.

Consider the situation in which the partner does not perform appropriately, in some way. Williamson (1985) refers to such behavior as opportunistic,¹⁸ which is done for selfish reasons and disadvantages the other party. For example, a seller promises to keep a delivery deadline when the contract is agreed but expects that he will be unable to meet the deadline, or a seller promises a generous claim arrangement as part of the contract but, when a claim occurs, they refuse to cooperate.

Definition 4: Opportunism

A type of behavior involving self-interest seeking with guile, which disadvantages an exchange partner.

Opportunism should be distinguished from egoism, which comprises any form of selfishness in market behavior. Opportunism emerges in situations where there is some degree of freedom of action because contracts are incomplete—they do not cover every contingency. Opportunism becomes overt in the form of incomplete or distorted communication, such as willful attempts to mislead, distort, conceal, disguise, or in some other way confuse the other party (Williamson, 1985). The danger of opportunism is that it leads to behavioral uncertainty in exchanges, which in turn leads to costly preventive measures.

Opportunistic behavior can be observed before an agreement is reached, when someone hides their actual intentions or real characteristics. After the agreement is reached, opportunistic behavior may occur in attempts to exploit any opportunities to reduce costs or to increase benefits at the expense of the other party (Spremann, 1990). For example, the seller could secretly reduce the amount or quality of their

¹⁸ Here, the use of the term “opportunism” differs from everyday language. In everyday language, opportunism signifies “an opportunity for self-advancement usually with no respect for right or wrong” (The Newbury House online dictionary). We are using this word as a theoretical term according to Williamson.

contribution in order to reduce their costs, or the buyer could refuse to pay or pay later than originally agreed.

Opportunism is assisted by the unequal knowledge of the exchange partners. At first opportunistic behavior may not be evident to the exchange partner. If one partner has reason to suspect the other may behave opportunistically, mistrust results. If such suspicions do not exist, trust exists. Obviously, a situation of mistrust will lead to increased costs of monitoring and controlling the partner's behavior, compared to a situation of trust.

2. Incomplete Information on External Influences

An additional source of uncertainty results from the effect of environmental factors. These can result in a problem solution not being carried out as originally planned. A seller might be affected by strikes, which cause delays in delivery, or prices may change due to increased costs of raw materials. Political or economic problems in the buyer's country may delay payments. Furthermore, changes in technology or developments in society may change the problem itself, making the original problem solution no longer appropriate.

3. Incomplete Information About One's Own Contribution to the Exchange

Finally, even one's own contribution is a possible source of uncertainty, such as an incorrect estimation of our resources and abilities. This type of uncertainty may relate to problem formulation as well as to problem solution. For the former, uncertainty refers to the danger of misunderstanding the problem or envisaging inappropriate solutions. This can lead to the provision of goods or services that may provide some kind of benefit but which do not solve the original problem.

For problem solution, mistaken estimates of one's own resources and capabilities may lead to a failure to serve the market partner in the agreed manner. In particular, unexpected problems in integrating a good or service into the buying firm's existing system can be quite costly and difficult to deal with. A buyer of a new production system may find out, for example, that in order to operate the system effectively, a major and expensive effort in staff training is required that was not anticipated.

Uncertainty impacts on the decision making of the buyer and seller. A buyer may regard the products of two sellers as equal, but favor the in-seller, a firm they already buy from, because of a higher degree of trust and familiarity. Uncertainty is a cost to be taken into account together with other costs involved in obtaining value. And activities to avoid or reduce uncertainty incur costs, which are yet another type of exchange cost. Uncertainty, if it cannot be reduced, may prevent agreement being reached, even if the terms of the exchange are otherwise favorable to both sides.

In sum, decision makers tend to avoid uncertainty, and this is a fundamental aspect of behavior (Cyert & March, 1963).

A distinction can be made between risk and uncertainty (Knight, 1921). Risk is when the outcomes of an action are not certain but the probability of different outcomes occurring is known. True uncertainty involves situations where we do not know the kinds of outcomes that may arise or their likelihood of occurring. Decision theory may be used to provide a framework for analyzing the impact of

risk on decision making. The perceived risk that the exchange partner's contribution will not be satisfactory can be divided into two components (Cox, 1967): (a) the undesired consequences resulting from the exchange or the amount at stake and (b) the perceived probability of the negative consequences actually arising. Perceived risk is thus a function of the possible negative consequences perceived, weighted by the subjective probability of them occurring.

If an agreement turns out to be unfavorable, events must have occurred that reduced the anticipated value of the exchange. Assuming fixed perceived probabilities, the risk for one party increases the more important the problem solution is and the greater the damage resulting from not completing the originally agreed exchange. If a partner is completely certain about the outcomes of the exchange, the perceived risk is zero, even if the actual probability of a negative outcome is greater than zero.

Managing Uncertainty

Risk reduction strategies comprise measures to reduce the perceived probability of not completing the exchange as agreed and measures to reduce the damage resulting from not completing the exchange.

1. Reducing Perceived Risk

One way to reduce perceived risk is to collect additional information (Stigler, 1961), including information on the exchange partner and that available through third parties. The exchange partner's ability and willingness to contribute to the exchange in the agreed manner are of central concern. The services of third parties may also be used, such as technical laboratories, government agencies, consultants, and banks, who can provide information on the partner's capacity, willingness, and relevant legal status.

A further way of reducing perceived risk is by using legal institutions developed to enforce contract compliance. This requires that the promises each party makes with regard to the exchange are clearly defined in the contract, as this reduces the probability of subsequent conflicts over the content of the agreement. Contracts protect both sides by imposing sanctions on any violation of the agreement according to the relevant legal framework ("pacta sunt servanda"¹⁹).

Finally, a seller can reduce perceived risk by forcing the buyer to pay before the exchange is completed or by requiring bank guarantees from the buyer. This is common practice when doing business internationally with parties from areas affected by political or military crisis or that have weak currencies. In a similar way, a buyer can require financial guarantees from the seller, underwritten by banks.

2. Reducing the Damages from Exchange Failures

There are three ways to reduce the damage that occurs if an agreement is not fulfilled. First, each party may try to impose costs on the other party should they fail

¹⁹ (Latin) = "contracts must be fulfilled" (Roman legal principle).

to meet its obligations. To do this contract agreements include clauses specifying exclusion of liability for “force majeure” or for price adjustment clauses. Second, various types of guarantees may be specified in the contract to deal with contingencies, such as accelerated access to bank guarantees if payment is delayed. Finally, financial compensation may be sought for damages incurred. These include penalty payments for late delivery, insurance contracts, such as those offered by many governments to protect international transactions in the capital investment sector, and the inclusion of surcharges in a seller’s price calculation, which is a form of self-insurance.

Whatever methods are used, efforts to manage uncertainty incur costs in the form of the time and effort involved, the resources used, and any premiums paid for insurance. However, no method can eliminate risk and buyers, and therefore sellers and buyers have to cope with some uncertainty. In order to deal with this, they must develop some minimum degree of trust in each other. Hence, trust is an essential feature of exchange. Following Luhmann (2000), we define trust as a unilateral concession in an exchange that places a party at risk because it gives the other party some possibility to act in ways that adversely affect the trusting party, without the latter being able to prevent it. In addition, the damage resulting from exploiting a position of trust usually exceeds the benefits resulting from the exchange if the other party behaves in a trustworthy manner. This means that trust is not really a mechanism for reducing risk and uncertainty, but rather a feeling or attitude that allows those involved to cope with risk and uncertainty.²⁰ In this sense it is similar to hope and we can say that trusting is a way of removing uncertainty from our minds.

All activities to reduce risk and uncertainty incur costs and the acceptance of any remaining amount of uncertainty that cannot be further reduced is itself one of the costs of exchange. The more trust there is the smaller these costs are perceived to be.

A Digression

It is possible to illustrate the theoretical framework we have just developed with a fairy tale some of us may remember from childhood: “Lucky Hans”.²¹ In this fairy tale Hans appears to engage in a sequence of unfavorable exchanges with others. Let us first recall the story.

²⁰ “In the end, trust never can be justified; it is generated by overstressing the available information. It is a mixture of knowledge and ignorance” (Luhmann, 2000).

²¹ Erich and Monika Streissler (1983) had the brilliant idea to explain the economic exchange theory by means of this exemplary tale.

Lucky Hans

Hans spoke to his master, whom he had served for 7 years: "Master, my time is up, now I want to return home to my mother. Therefore I ask you politely to give me my wages." His master answered: "You have served me faithfully and fair, and as the service was so shall be the remuneration," and he gave him a piece of gold that was as big as Hans' head. Hans pulled out a blanket from his bag, wrapped the gold in it, loaded it on his shoulder and started on his way back home. After walking on the road for some time he met a horseman totting quickly and merrily on a lively horse. "Oh," Hans said quite loud, "how wonderful it must be to ride! The rider is sitting like on a chair, never stumbling over stones on the road, never damaging his shoes, and, you cover the ground you know not how." The horseman heard Hans', stopped and said to Hans: "Hans, why do you travel by foot on this road?" "I do not have a choice since I have to carry home my load. It is true that it is gold, but I cannot keep my head straight because of it and it hurts my shoulder." "Well, I'll tell you what," said the horseman, "we will exchange. I will give you my horse and you will give me your gold." "I shall be delighted to agree," Hans responded, "but let me tell you this, you will have to crawl along with it." The horseman climbed down from his horse, took the gold, helped Hans to climb on and told him: "If want you to make the horse go faster, click your tongue and shout: ho ho!"

Hans was delighted sitting on his horse and enjoyed his new comfort. But after a little while, he felt like riding his horse a little bit faster, so he started to click his tongue and shouted "ho, ho!" The horse started a sharp trot, and before Hans knew where he was, he was thrown off and was lying in a ditch, which separated the country road from the nearby fields. The horse would have bolted had it not been for a farmer walking by the road leading his cow, who stopped it. Hans recovered slowly from his fall and finally managed to get back to his feet. He was however still grumpy and spoke to the farmer: "Riding a horse is not much fun, and even worse, if you come across a nag like this one, which kicks and throws you off, you can break your neck. I will never climb back on this horse. Let your cow be praised, you can walk quietly behind her and beyond that she provides you with milk, butter and cheese every day. What would I not give to have such a cow." "Well," said the farmer, "if it really means so much to you, I will trade my cow for your horse." Hans agreed with the greatest delight. The farmer quickly mounted the horse and rode away. Hans drove his cow quietly before him and thought about his lucky bargain. "If only I have a morsel of bread, and that can hardly fail me—I can eat butter and cheese with it as often as I like, if I am thirsty, I can milk my cow and drink the milk. My goodness, what more can I want?"

Later on, he stopped at a country inn, ate all the food he had with him, lunch as well as dinner, and ordered from what was left of his money half a

(continued)

mug of beer. After that he traveled on with his cow towards the village of his mother. But when noon came closer the heat got oppressive and Hans found himself on an open plain that would take him about an hour to cross. Hans started to get hot and his mouth started to get dry from thirst. "I know how to help myself," he thought, "the time has come to milk my cow and refresh myself with milk." He tied the cow to a branch of a tree and, since he had no bucket, he placed his leather hat underneath the cow. But, despite his efforts, not a single drop of milk appeared. And, because of his clumsy attempts to milk the cow the poor and impatient animal eventually kicked him in the head with its hind foot and he fell over and for a long time did not know where he was. But fortunately, just then a butcher passed by pushing a wheelbarrow loaded with a young pig. "What has happened to you, my friend?" he said and helped Hans to get back on his feet. Hans told him his story and, after hearing it, the friendly butcher offered Hans a drink from his bottle and said: "Have a good drink from my bottle, it will refresh you. Your cow does not want to give milk, but to tell you the truth, your cow is an old animal, only good for the plough or for the butcher." "My goodness," Hans responded, while brushing down his clothes, "who would have thought it. With a cow like mine I will certainly end up with a lot of meat. However, I don't care much for beef as it is not juicy enough for me. But look at that beautiful pig you have! It tastes different and then think of all the sausages." "Listen, Hans" the butcher responded, "for you, I will exchange my pig for your cow." "God bless your friendliness," Hans responded and happily handed over the cow for the pig.

Hans continued on his way and reflected again on his good fortune: Whenever he encountered a problem or any inconvenience, he was given instantly an opportunity to fix his misfortune and solve the problem. Very soon he was joined by a young fellow who carried a beautiful white goose under his arm. After a while they introduced themselves and Hans started to tell him about all his good luck and how he always made such good bargains for himself. The fellow told him that he was taking the goose to a christening feast for a newly born child. "Just lift her to feel the heavy weight" the fellow continued and grabbed the goose by its wings, "it has been fattened for 8 weeks. Whoever eats a bit of her when she is roasted will be delighted by the meat and fat." "You are right," said Hans as he felt her weight in one hand, "this is a good weight. However, as you can see, so is my pig." At that moment the fellow turned his head from side to side suspiciously. "Listen, my friend, it may not be alright with your pig. In the village I just passed, a pig was stolen from the village teacher's barn. I fear, it was the one you have with you. They sent out people to look for the thief and it would not be good for you to be caught with this pig. They would throw you into the gloomy hole of the village jail." Poor Hans was terrified. "Oh my God! Please help me to get

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out of this terrible situation. You probably know how to hide away in this place, please take my pig and leave your goose with me.” “As a matter of fact, the deal you are proposing will leave me in a risky situation,” the fellow answered. “However, I want to save you from your misery.” He took the rope from Hans and quickly disappeared with the pig at the next crossroads. Good Hans, without any cares, continued on his way home carrying the goose under his arm. “When I think about it, even my latest exchange was good for me. First, there is the tasty roast, then all the fat that will drip from the goose will make delicious dripping for my bread that will last me for at least 3 months, and finally there are these fine white feathers. I can stuff my pillow with them to make me sleep very comfortably. How delighted my mother will be!”

When passing the last village before his home, he met a scissor grinder with his barrow, singing to its turning wheel. Hans stopped and watched him for a while. Finally he spoke to him: “You seem to be a happy man turning the wheel and grinding the scissors.” “Oh yes,” answered the grinder, “the trade is a safe haven. A good grinder is a man who always finds money in his pockets. Can you tell me where you bought your beautiful goose?” “I did not buy it but traded it for my pig.” “And the pig?” “I received it in exchange for a cow.” “And the cow?” “I received it in exchange for a horse.” “And the horse?” “I gave a nugget of gold as big as my head.” “And the gold?” “Well, that was my wages for 7 years of service to my master.” “It seems, you always knew how to help yourself,” the grinder said. “Now, wouldn’t you be a really happy man if you felt coins jingle in your pocket whenever you got to your feet?” “But, how shall I do that?” Hans replied. “You must become a grinder, like me. It does not take more than a grindstone, everything else will come in time. As a matter of fact, I have a spare one here, which is a little worn but, because of this, I won’t ask more than your goose for it. Will you agree to that deal?” “Of course I will, how can you ask!” Hans answered, “I will be the luckiest person on earth. What should I worry if I find money whenever I reach into my pocket.” So he handed over the goose and took the grindstone in exchange. “Now,” the grinder continued, while picking up ordinary stone that lay nearby, “take this stone as well, it will help you straighten old nails. Take good care of it.”

Hans took the stone and happily went back on his way, his eyes glowing from delight: “I must be born under a lucky star,” he called out loud, “everything I wish comes true.” By that time, because he had been on his feet since dawn, Hans became tired. Also, he was getting hungry. But all of his food was already eaten. Eventually, he could not go on without a rest. The weight of his stones hurt him. Hans started to imagine how good he would feel without this load. Walking at snail pace he arrived at a small well in the fields where he could take a rest and refresh himself. To protect his stones he

(continued)

put them very carefully by his side on the edge of the well. He stooped down to drink and as he did so he slipped and bumped his stones. Both stones fell into the water. When Hans saw his stones sinking to the bottom he jumped for joy, kneeled down and, with tears in his eyes, thanked god for his good grace. Hans was released from his heavy load without having to blame himself for losing them. “No man under this sun can be as fortunate as I am,” he cried out. Lightheartedly and free from any cares he jumped up and ran to his mother’s home.

The story of ‘Lucky Hans’ illustrates many of the characteristics of exchange described above.

- In the different phases of his journey, Hans faces various problems. Let us look closer at the horse episode. He wants to travel faster, but lacks a means of transportation. Since he is tired and carries a heavy load, he has a strong compulsion to solve his problem. The means available is the exchange of the golden nugget for the horse. All other episodes follow the same pattern.
- At the same time he creates a simplified picture of his decision-making situation by not considering all available alternatives and not looking at all possible consequences. Thus, we can classify his behavior as “boundedly rational.”
- The fact that his satisfaction at the time of an exchange is transformed into dissatisfaction later on reflects uncertainty: “Lucky Hans” attracts our attention by ignoring the risks associated with his exchange activities. He is vulnerable because he cannot recognize the fraudulent intentions (opportunistic behavior) of his exchange partners and the different types of outcomes that may arise from an exchange. In addition, he seems to be prepared to naively trust his exchange partners to his detriment. Probably, every one of us would like to urge Hans to develop more risk awareness and replaces trust by other means of uncertainty reduction.

We will return to the fairytale of “Lucky Hans” in subsequent sections of this chapter.

1.1.2 Extended Exchange

So far we have analyzed a basic model of exchange, focusing on an isolated dyadic exchange ratio between a seller and buyer, which is not representative of market exchange. What is lacking most is competition. The buyer and/or the seller compete against others to bring about an exchange with each other. In this section we add competition to our model of exchange.

“Competition is the rivalry between individuals (or groups or nations), and it emerges whenever two or more subjects strive for something only one or some of

them can finally have” (Stigler, 1987). This simple definition, from the American Nobel Prize winner George Stigler, makes clear what competition is all about. Scarcity creates rivalry and, thus, competition. Sellers and buyers cannot pursue their interests through exchange without considering other market participants.

In a free market economy, competition occurs as a result of three conditions that exist for decision making and because of the institution of private property.²²

- *Free market access*: Every interested party has the right to participate in the market process in pursuit of their own ideas of benefit. There is no prohibition to market access.
- *Free market exit*: Market participants can exit from the market process in pursuit of their own ideas of benefit. There is no compulsion to buy or sell.
- *Freedom to design the terms of an exchange*: An agreement between the parties to an exchange is found according to their respective comparison of perceived value. Both parties have complete freedom.
- *Private property*: Private property is protected. An owner of goods and resources may freely decide how they are to be used and bears the corresponding risk. Of course, there are some limits set by society as to how goods and resources may be used.

In a free market, those with the most attractive offerings are rewarded and those with less attractive offerings are punished. Any participant’s fate is repeatedly decided by the judgment of market counterparts. The destiny of each market participant is decided again and again by the judgment of market partner—sellers must survive the buyers’ judgment and buyers must survive the sellers’ judgment.

Let us extend the dyadic situation depicted in Fig. 1.3 to include a second buyer BC (competitor). This is shown in Fig. 1.6. B and BC compete for an agreement with S (seller), and only one of them can be successful. Because of this excess demand for his offering, S is in a favorable position to choose between B and BC, and S can exploit this to reach a favorable agreement for itself. The seller in this case is in the position of an arbitrator, deciding which offering is superior and which is inferior. S compares the exchange conditions offered by B and BC in terms of how well they solve S’s problems. Unlike dyadic exchange, where only benefits and costs are compared, S’s decision is guided by his perception of the difference between competing offerings.

This situation is called buyer or customer competition and a seller’s market. Buyer competition is typical in centrally planned economies; however, it can also be found in free market situations. For example, if a seller provides a superior product and lacks sufficient manufacturing capacity, buying firms may compete for

²² In the following, we will assume ideal conditions which in reality can be more or less restricted. The framework of conditions of the market economy is more or less ensured by the authority of laws: These laws do not only protect property and freedom of contracting but do also prevent violence and fraud.

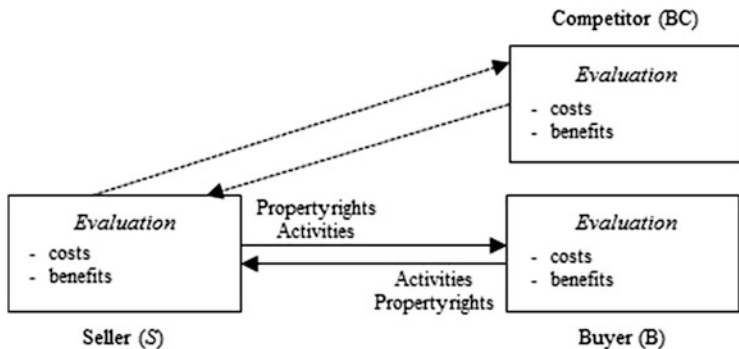


Fig. 1.6 Exchange and buyer competition

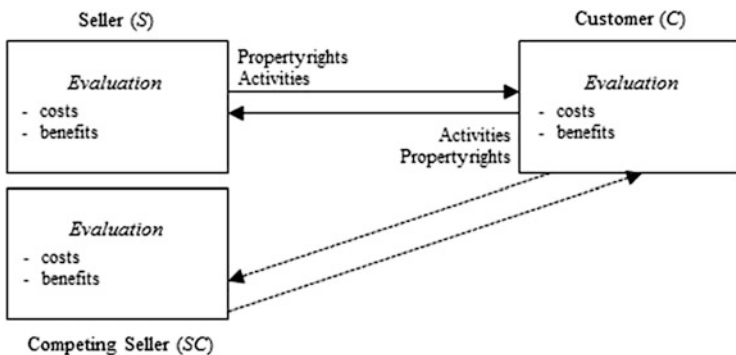


Fig. 1.7 Exchange and seller competition

manufacturing capacity. Generally, these situations may be described as supply shortages.

Now add a second seller SC instead of a second buyer, as shown in Fig. 1.7. A surplus supply situation now exists, a buyer’s market, because only one seller can sell its goods or services. The buyer is now in the position of an arbitrator.²³ The conditions of exchange offered by the competing sellers will be compared and the buyer’s choice is guided by perceived differences in the value of the offerings.

In the case of competition among sellers, the buyer B has more influence on his counterparts than when a seller’s market exists. This is because B has the freedom to switch between S and SC, which allows B to negotiate a more favorable deal.

²³ Unlike in the sports sector, the arbitrator customer in the market activities is not bound to the rules of the game apart from the current laws. He is rather making an effort to lay down his own exchange rules. But he does not impart these rules to the suppliers, i.e., he communicates them in a misleading or incomplete way or reserves the right to modify them in the middle of the process. Sometimes the customer himself is not even sure of his own rules. Therefore, the analogy of sports competitions cannot be thoroughly applied to the role of the arbitrator customer.

Seller competition (buyer's market) is typical for mature markets where intense seller competition prevails.

Exchange in the face of competition is characterized by a battle among sellers and buyers within a given system of rules. To compete they use means designed to win the market partner's favor, which reflect their capacity to solve their exchange partner's problems. The greater the competitive advantage the easier it is to convince market partners to engage in exchange and, therefore, market actors strive to develop and sustain competitive advantages. Market exchange is controlled by the relative power of the parties involved, which derives from their competitive advantage.

In most cases the balance of power is in favor of one of the buyer or seller. Consequently, efforts to generate competitive advantage can be interpreted as an exercise in power creation with respect to the market counterpart (Arndt, 1980).

Distinguishing buyer competition (seller's market) from seller competition (buyer's market) allows us to specify more precisely the sources of power of market participants. Market power depends on the relative scarcity of supply, which depends on the degree to which the parties involved perceive there are substitutes available. The elimination or reduction of the perceived substitutability of a good or service creates opportunities to influence the other side of the exchange.

The competitive process, created and supported by the legal systems of a society, is designed to balance the power of all participants in the market. Market participants try to exploit conditions of scarcity to their own advantage in order to reach favorable agreements with other market participants. The means of doing this is by differentiating offers from those of competitors, offering differential advantage (Alderson, 1957). This does not mean that it is enough just to be different, the difference must make a difference in ways perceived as valuable by the market partner and they need to be difficult to imitate by competitors. Achieving and sustaining differential advantage is not easy because, as soon as a differential advantage is achieved, competitors try to imitate or better it, as we will discuss in more detail in a later section of this chapter.

1.1.3 Complex Exchange

The previous section extends dyadic exchange to triads by introducing a third actor competing with the seller or buyer. This results in two competing exchange ratios. But it still does not correspond to real markets, where exchange situations are usually far more complex.

We define an exchange as complex if there is a system of interdependent exchange relationships with at least three parties involved (Bagozzi, 1975). The basic structure of a complex exchange is not S—B, but S—I—B, in which I is an additional party involved in a sequence of exchanges. We often find such triadic or multiple relationships in real markets, especially when the exchange between two parties takes place through an intermediary.

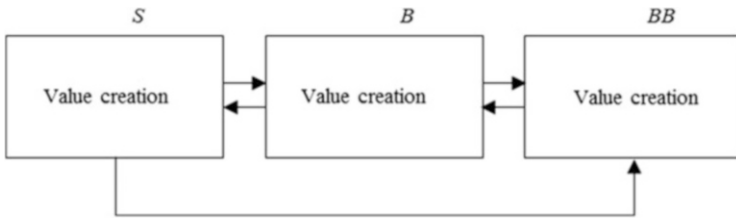


Fig. 1.8 Multi-level market from the viewpoint of seller S

Example 1

A seller S delivers to a buyer B, who is not the final user of the good, but a trader who sells the good to its buyer BB. S not only contacts with B, but also BB in order to get BB to enter an exchange with B. This is the classic example of a *multi-stage market* (see Fig. 1.8).

Example 2

Seller S starts an exchange with firm I, who runs a trade fair. S wants to reach an agreement about favorable conditions for exhibiting at the fair, such that it will be able to attract buyer B. Firm I promotes the trade fair to buyer B in order to encourage B to purchase a ticket and visit the fair. If B visits the fair, S engages in an additional exchange process with the aim of reaching an agreement with B. The exchange between S and B cannot take place without the exchanges between S and I and between I and B. Figure 1.9 illustrates this complex exchange ratio.

Example 3

Seller S and its partner SP offer a buyer B an integrated total solution to a business need. In order to produce and supply this total solution S and SP are supported by a number of subsellers. S and SP are in an exchange ratio with one another as well as (as a group) with buyer B. Firm BB uses B to buy the total solution on its behalf because B has more experience. A third party, an engineering consultant D, is used to provide advice. Here, we have a network of exchange ratios as depicted in Fig. 1.10.

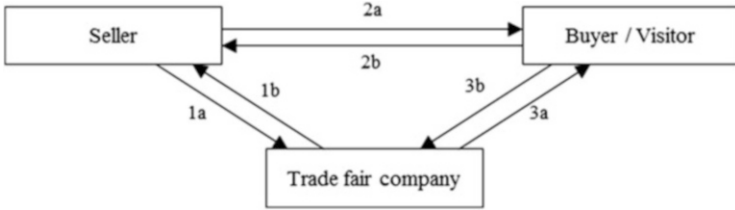


Fig. 1.9 An example of triadic exchange

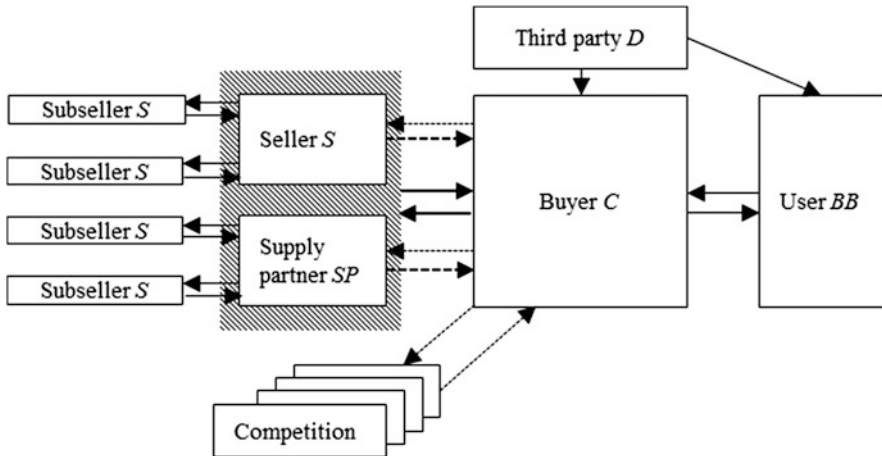


Fig. 1.10 A network of firms involved in a complex exchange

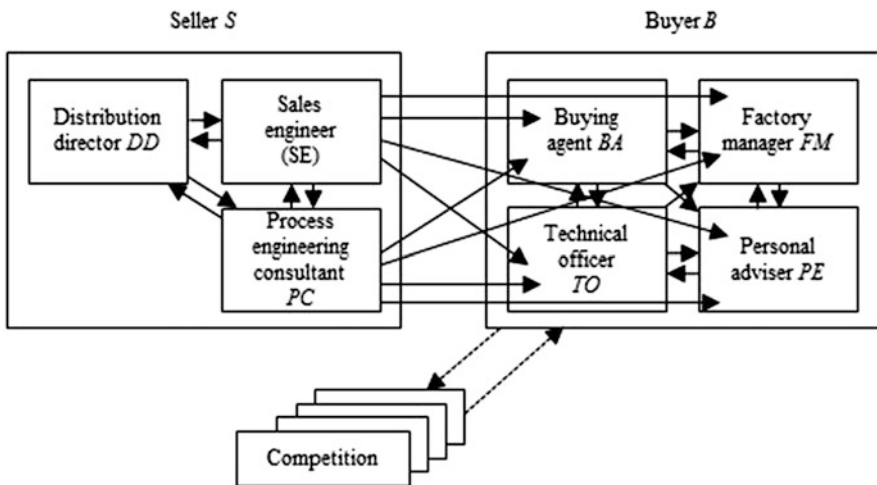


Fig. 1.11 People involved in a complex exchange

Example 4

Seller S wants to reach an exchange agreement with buyer B. The buyer is represented by the buying agent BA, the chief technical officer TO and the factory manager FM. The chief executive's personal adviser PE also plays an important role. S is represented by his sales engineer SE, his process engineering consultant PC, and by the distribution director DD. These people enter into a multi-dimensional exchange ratio with the people acting for the buyer, including a number of partly noncommercial internal exchange ratios. Figure 1.11 illustrates the complex relations network.

Many more examples could be given as complex exchange is the dominant type of exchange in industrial markets. Typically, several firms compete and many people are involved from each firm—deciding, advising, or influencing in other ways. This situation can be found in consumer markets as well, such as in family purchase decisions, but not to the extent found in industrial markets.

Example 4 above introduces some additional dimensions of exchange. So far, firms have been treated as single entities in the exchange process, whereas this example introduces the issue of group decision making. This shows that we must interpret complex exchange as both an inter-organizational and an intra-organizational pattern of interaction among people and activities.

So far the examples of complex exchange ratios have not considered the dynamics of exchange. But, in reality, exchanges *take place over time and have future consequences*. Exchange efforts carried out today have consequences not only for the exchange they are part of, but also for other exchanges, including others taking place at the same time as well as subsequently. Such *spill over or interaction effects* are of particular importance for understanding market exchange. From both the seller's and customer's perspectives, technical, economic, and psychological considerations make it difficult to change an exchange partner easily and, as a result, sellers and buyers tend to develop *supply relations* that can be relatively stable (Hakansson, 1989). A seller–customer relation is a result of exchanges between a seller and a buyer that are not accidental. “Not accidental” means that reasons exist to *systematically* link, a priori, certain exchanges over time, or that, de facto, such linkages emerge. Hence, a buyer–seller relation can be seen as a sequence of connected exchanges. We call such exchange sequences *business relations* (Plinke, 1989).

Examples

- A very insecure customer, after a lot of deliberation, decides to change his dentist. The first visit to the new dentist was very satisfactory. It is highly probable that the customer will go to the same dentist again.
- A car manufacturer is involved in a supply relation with a subcontractor, which involves both basic contracts as well as technical and administrative agreements concerning research and development, production, and logistics. It is not the

individual delivery that counts in these exchange processes, but the business relation as a whole.

- A seller sells to a firm for a number of years and a social bond develops between some of the representatives of each of the firms. The two firms learn about doing business with each other. For these reasons future exchange between the two firms is more likely.

1.1.4 Summary

The characteristics of market exchange discussed so far provide the foundation for our analysis of business markets in this book. We started off with dyadic exchange in order to recognize the basic effects of an exchange on the seller and buyer. This was extended to include consideration of competing sellers and buyers, in order to provide an understanding of the role of competition on exchange. Additional exchange parties, including intermediaries, were then introduced, as well as the many people involved in the exchange process, which results in a more detailed view of complex exchange. Finally, the dynamics of exchange and the connection among exchanges over time and place were introduced to complete the descriptive model of exchange.

The foregoing are the basic concepts necessary to describe any market exchange process. They enable us to consider the following fundamental question regarding the nature of the market process: Under what conditions is an exchange perceived as successful by the parties involved, or when does a mutually agreeable exchange agreement arise between seller and buyer?

1.2 The Market Transaction

We have described exchange in terms of a system of activities aimed at the preparation, negotiation, and control of a mutually conditioned transfer of rights between two or more parties. Our purpose here is to understand how a firm achieves its goals by means of exchange processes—how the input and output of goods and rights plays a role in reaching its goals.

One can analyze exchange from various perspectives—from sociological, psychological as well as from legal ones.²⁴ In this section we examine the conditions under which market participants reach agreements about the mutual transfer of rights and obligations. It is the agreement itself, each party's decision to accept the

²⁴ Schneider (1987) introduced the following enlightening illustration regarding the distinction between empirical and analytical objects: Business students sit in a dark theatre (science), and on the stage is reality. This reality can only be seen when the headlights are switched on—by scientists.

offer of the other party, that is the focus of our attention, and we call this agreement a transaction. The market transaction is an integral part of the theory of economic decision making. It has the characteristic that it does not concern the decision making of one economic actor considered in isolation but concerns the simultaneous interaction of the decisions of at least two parties.

1.2.1 Exchange Ratios

In order for each party involved to be able to solve its problems through market exchange an agreement between them is necessary. Each exchange party evaluates the costs of the goods and services they have to contribute and the benefits of the goods and services they would receive in terms of the problems they are trying to solve. The costs compared to the benefits expected we term the “*exchange ratio*.”

Definition 5: Exchange Ratio

The perceived benefits received or claimed by the seller or buyer in an exchange compared to their perceived costs.

If at any time the buyer and seller agree upon the rights to be transferred, we shall call this agreement a *transaction*—in colloquial language this is referred to as a “deal”.²⁵ If an exchange ended without an agreement, then no transaction has taken place. A transaction occurs when both parties to the exchange become convinced that the exchange ratio corresponds to their expectations and, therefore, they are willing to agree to the transfer of rights involved. In legal terms we refer to it as concluding a contract such as a purchase contract, a leasing contract, a license agreement. An agreement is the visible expression of the fact that, in the given circumstances, neither party perceives a better option, including no exchange.²⁶

²⁵ Commons (1959) provided substantial contributions to the understanding of the transaction as the unit of economic analysis. He made the transaction the final unit of economic examination which represents a unit of transfer of legal control. It makes a classification of all economic decisions of the courts and tribunals of arbitration possible under the various economic factors involved in transactions at the moment they are actually made. Kotler, Keller, and Bliemel (2007, p. 14) make a similar distinction between an exchange process and a transaction. According to them two parties are said to be involved in an exchange process if they are negotiating and moving toward an agreement. A transaction takes place if an agreement is reached. Transactions are the basic unit within an exchange process.

²⁶ Kirzner (1973) writes about a pair of mutually fitting relationships: “Each pair of dovetailing decisions (each market transaction completed) constitutes a case in which each party is being offered an opportunity which, to the best of his knowledge, is the best being offered to him in the market. Each market participant is therefore aware at all times that he can expect to carry out his plans only if these plans do in fact offer others the best opportunity available as far as they know.”

Definition 6: Transaction

An agreement between two parties about the value of the assets each of them gives up and receives in an exchange.

A necessary condition for a transaction is the *matching of exchange ratio for each of the parties involved*. The agreement between the parties turns the subjective exchange ratios into an objective reality. In order to understand the transaction, a more detailed analysis is needed of the value perceptions of each party regarding the exchange ratio.

1.2.2 The Elements of an Exchange Ratio

For the buyer and seller an exchange contains several sources of potential benefits and costs:

- The sales contract or agreement describes the performance requirements for each party and is therefore a source of benefits and costs for each side. We will refer to them as the *benefits and costs of the contract*.
- The negotiation and carrying out of a transaction is not without costs (Picot & Dietl, 1990; Williamson, 1985).²⁷ We refer to these as *transaction costs*. In addition, *transaction benefits* may arise in relation to the process of negotiating and carrying out a contract. For example, it might be an inherently enjoyable social or economic process in some situations, such as the bargaining processes that take place in street markets.
- A transaction is not carried out in isolation from other transactions and processes in the environment. Almost every transaction has external effects of one sort or another. Hence we distinguish between the benefits and cost that arise directly from the exchange, and side effects that only become apparent in other exchanges. We refer to these side effects as *side benefits* and *side costs* from the perspective of the parties involved in the focal exchange.

Figure 1.12 shows the possible sources of benefits and costs for a buyer and seller.

1.2.2.1 The Buyer's Perspective

If a product or service is provided as contractually specified, the buyer receives the contract benefits. These are the benefits the product provided contribute to solving a particular problem, which may involve completing various production, administration, logistics, or other tasks using the product. The meaning of the term "Product"

²⁷ It was the English Nobel Prize winner Ronald H. Coase (1937) who introduced this insight to market theory.

		Type of value	
		Benefits	Costs
Source of value	Value of contract object	Contract objects' benefits	Contract objects' costs
	Value of exchange accomplishment	Transaction benefits	Transaction costs
	Value of side-effects	Side-benefits	Side-costs

Fig. 1.12 The benefits and costs of an exchange ratio

in this context has to be interpreted in the broadest sense as a *means of producing value, of solving problems*: it comprises all the elements defined in the agreement including hardware, software, services, and ownership and usage rights. From the buyer's perspective, a product is not a physical object but a means of solving a problem, with the associated perceived benefits. It is not the machine that constitutes the product but the availability of manufacturing capacity; the consulting process is not the product but the resulting ability of the buyer to deal with a problem in a better way.²⁸

The contract benefits are based on the *usership and ownership rights* gained from product provided, including the rights to use and consume, to earn a profit from, to transform, and to sell. The potential benefits of a product thus occur throughout its useful life, what we term its *life cycle benefits*. A product can have technical, economic, social, legal, and psychological dimensions. In addition, there are various non-contractual services carried out by the seller that result in benefits for the buyer, such as fair trading.

The potential *transaction benefits* for a buyer arise independent of the emergence of an agreement during the buying process.²⁹ One example is the know-how the buyer may gain from the seller as a result of their interactions, which may assist the buyer in later use of the product. Another is the positive experience the buyer has during the exchange process, from their own activities or those of the seller. The seller's efforts to facilitate the buyer's decision making, such as consulting advice, comparisons of alternatives, advertising, inspection tours, and test operations are yet another potential source of benefits that can increase the buyer's trust in the seller and hence lower its transaction costs.

²⁸ The relevance and importance of this distinction between a product as a physical resource or capability and the services or benefits that can be provided by using the product or resource is receiving increased attention in the marketing literature of late with the development of the concept of service dominant logic (e.g., Vargo & Lusch, 2004)

²⁹ Bagozzi (1986) mentions the possibility of exchange benefits.

The third type of benefit relates to the effects on other exchanges taking place alongside and after the focal exchange. One type of side benefit is related to future business activities. For example, in industrial markets the technical circumstances of the focal exchange may facilitate future buying decisions. This occurs when the technical compatibility of a system in the buyer's company is important. If a buyer decides to buy a system which offers high compatibility and a range of future extensions and improves the buyer's flexibility and certainty concerning future investment decisions. These side benefits can be important considerations and even outweigh direct contract benefits. We refer to such benefits as "*future purchase certainty*."

Another type of side benefit is the *simplification of future purchases*. The more technically complex an exchange is, the more past experience with the same partner influences future exchange costs. This is because the people responsible are known, interfaces have been clarified, contract patterns have been tested and technologies are known. Relevant past experience can have beneficial effects on the following aspects of an exchange:

- Knowledge about the market partner
- Decision-making routines
- Trust in the partner
- Technology and use concepts
- Clarification of specifications

Similar types of side benefits can occur in other exchanges taking place at the same time, as when knowledge gained in one exchange is relevant to another or the reputation a buyer gains in one exchange spreads to others.

The benefits will have to be compared to the costs, which we consider now. Costs include not only the purchase price, but all costs anticipated over the life cycle of the product, including implementation, operating, and disposal costs.

The buyer's transaction costs comprise all the efforts involved in reaching an agreement. They include both human time and effort and the use of resources designed to facilitate the buying decision. Of particular importance are the costs of information collection and use that are designed to *reduce risk*. In terms of the different stages of an exchange, transaction costs can be classified as follows (Picot, 1982)³⁰:

- Transaction preparation costs, i.e., search for and procurement of information about possible exchange partners and their terms
- Transaction settlement costs, i.e., the time and effort involved in negotiation, contract formulation, and reaching final agreement

³⁰ A more detailed classification proposed by Albach (1988) is search costs, preparation costs, negotiation costs, decision costs, agreement costs, control costs, and termination costs.

- Transaction control costs, i.e., controlling and monitoring compliance with contract terms including timing, quality, quantity, price, and secrecy
- Transaction adaptation costs, i.e., time and quality adjustments and price and quantity changes resulting from unforeseen circumstances arising during the term of the contract

Costs from side effects can be of considerable importance to the buyer. Technical compatibility is a crucial issue. A buyer who selects a particular seller's system may lock itself into this system in the future and thereby sacrifice some of his future *freedom of choice*. The economic expression of this sacrifice is in terms of the buyer's *switching costs* in case of dissatisfaction.

1.2.2.2 The Seller's Perspective

The benefits and costs of an exchange ratio from a seller's perspective mirror those of the buyer.

The seller's contract benefit is the price paid. This is more than financial revenue. It comprises all contractually specified contributions, actions and non-actions of the buyer in relation to the seller, including monetary and non-monetary aspects.

The seller's transaction benefits comprise all the positive effects which are the direct outcome of the exchange process. These encompass all learning effects resulting from preparing the offer, including increased market knowledge.

The seller's potential side benefits are many. One is the deepening and consolidation of a *business relation* with the buyer, which increases the likelihood of future orders. In addition, the seller can gain technological benefits through cooperating with a leading edge customer in research and development. We call the benefits arising from a deepened business relation and from technological cooperation *cooperation benefits*.

Expectations regarding future business activities with other partners are also important, because an exchange can have carry-over effects on future business activities with the same or other customers. This is especially so when an exchange becomes a reference point for other customers and projects. The benefits here are the referrals that can arise from the focal exchange and we term these benefits *referral benefits*.

The seller's costs comprise everything invested in the development, production, and commercial launch of the product. The transaction costs relate to the seller's efforts to reach an agreement and carry out the exchange. As we did for the buyer, the seller's transaction costs can be divided into:

- Transaction preparation costs, i.e., search for and procurement of information about possible exchange partners and their terms
- Transaction settlement costs, i.e., the time and effort involved in negotiation, contract formulation, and reaching final agreement
- Transaction control costs, i.e., controlling and monitoring compliance with contract terms including timing, quality, quantity, price, and even secrecy

Table 1.3 The costs and benefits in an exchange

Type of benefit			
	Contract benefits	Transaction benefits	Side benefits
For buyers	Offered product benefits	Increased know-how, security	Security, cost reductions
For sellers	Purchase price	Increased know-how	Referral benefits, cooperation benefits
Type of cost			
	Contract costs	Transaction costs	Side costs
For buyers	Purchase price, costs of use	Negotiation, implementation, disposal costs	Switching costs
For sellers	Production costs	Negotiation, implementation costs	Lock-in costs, cooperation costs

- Transaction adaptation costs, i.e., time and quality adjustments and price and quantity changes resulting from unforeseen circumstances arising during the term of the contract

Side effects can become important costs if current transactions create future commitments. These may arise because of effects on the buyer's expectations. Examples are the cost of storing replacement parts and service expectations. The danger of such costs exists whenever the seller is willing to make commitments in the expectation of future exchanges (Söllner, 1993).

Table 1.3 provides an overview of the benefits and costs involved in an exchange from the viewpoint of the buyer and seller.

1.2.3 The First Condition for the Emergence of a Transaction

The preceding description of the exchange ratio and its associated benefits and costs provides the basis for specifying the necessary conditions for exchange partners S (seller) and B (buyer) to reach an exchange agreement, i.e., a transaction. Each partner must balance the costs and benefits involved in terms of what they must give and what they want to receive, with each wishing to get more—or at least not less—than they give. From the buyer's viewpoint, the emergence of a transaction requires that the ratio of anticipated benefit to anticipated costs, *the exchange ratio*, must be greater than one. This is the first condition for the emergence of a transaction.

Condition 1a

The exchange ratio from a buyer's perspective must be greater than one, i.e.,

$$V_B = \frac{\text{benefits}_B}{\text{costs}_B} > 1$$

where, V_B is the value of the exchange ratio perceived by the buyer, benefits_B is the value of the buyer's anticipated benefits and costs_B is the value of anticipated costs including what the buyer has to give up in the exchange.

The seller is only willing to agree to the contract if the anticipated benefits from the exchange exceed the anticipated costs, i.e., if the seller can realize an exchange ratio greater than or at least equal to one. This is the second condition for the emergence of a transaction.

Condition 1b

The exchange ratio from a seller's perspective must be > 1 , i.e.,

$$V_S = \frac{\text{benefits}_S}{\text{costs}_S} > 1$$

where, V_S is the value of an exchange ratio perceived by seller S, benefits_S is the value of the seller's anticipated benefits and costs_S is the value of anticipated costs, including what the seller has to give up in the exchange.

Both sides strive to achieve at least a balance between the broadly defined costs and benefits of the exchange ratio, which means that each of them wants to get at least as much as he gives (Barnard, 1938).³¹ Without both parties anticipating an exchange ratio greater than one, no transaction will take place. Nobody easily consents to an agreement that makes them worse off. It might at first seem impossible to achieve simultaneously an exchange ratio greater than one for both parties. But the apparent contradiction disappears when we focus on *perceived* value in relation to each party's goals.

The buyer's perceived costs are *not* necessarily equal to the seller's perceived benefits and vice versa. Assessments are subjective, they depend on the problems the parties are trying to solve and they are influenced by uncertainty regarding the actual outcomes of the exchange process. This may result in one party perceiving its costs as low relative to the benefits perceived by the other party. The opposite may also occur, when one party perceives its costs to be high relative to the benefits

³¹ March and Simon (1967) describe this behavior as striving for a balance between inducements and contributions. No party wants to contribute more than the value of the inducements it receives.

perceived by the other party.³² The following simple example illustrates the asymmetry of costs and benefits in an exchange.

Example

When, after years of search, one of the authors found, in a flea market in Berlin, a door handle which fitted an 80 year old door in his house. He was very happy. Of course, the item looked corroded, but it would regain its glamour with some polishing. “50 Euros” the salesman requested. “You must be joking,” the author responded, “You found it in a house that was being demolished.” He was sure the salesman had not paid anything at all for it. The reader can easily reconstruct the logic of this situation. The author bought the door handle. What does this tell us? The sacrifice of the salesman in obtaining the door handle has got nothing to do with the benefits for the buyer. The benefits for the buyer arise from comparing the purchase with alternatives, and not from the costs of the salesman. In this case the alternatives were “no door handle” or “further search.”

Those involved in an exchange process not only differ with regard to their goals and their current decision situation, they also have different knowledge. The buyer has incomplete knowledge about the goals and decision situation of the seller and vice versa. In complex exchanges in industrial markets, we frequently find that sellers of technological goods know more about the technology, whereas the buyers have more knowledge about the situation in which it is to be used (Gemünden, 1981).

This *information asymmetry* (Spremann, 1987)³³ underlies the fact that an exchange process is a non zero-sum game. The divergent assessment of benefits and costs in exchange ratios is the basis of the market process and the market economy in general.

In order to describe and explain the emergence of a transaction we must specify more precisely the relationship between what the seller gives and the buyer's

³² An exchange is not a “zero sum game.” The effects of that for marketing can only be mentioned briefly at this point. For a seller to achieve a positive exchange ratio, it is important not only to create a positive assessment for the buyer and to carry out the exchange, but also to keep costs as low as possible. The buyer and seller have considerable scope for action here. Each strives for a relation between outputs and inputs that is as favorable as possible. A production function is defined as the relation between resource inputs and realized outputs (Gutenberg, 1983). In a similar way, we can define a “marketing function” in terms of the relation between the input costs and the outputs for the market partner. Hence, production, and marketing can be described in terms of productivity. However, an analysis of the marketing function is different from Gutenberg's. He focuses on the company, whereas we focus on the relationship between a buyer and seller.

³³ Asymmetrical means that the principal has less relevant information than the agent. This principal-agent-concept in economic theory explicitly assumes that the principal and agent have different levels of information. It interprets the contractual relations between the parties on the basis of egoistical and opportunistic behavior.

perceived benefits and between the seller's perceived benefits and what the buyer gives. We can summarize the features of this asymmetric assessment in terms of the relationship between a seller *S* and a buyer *B*, as follows.

1. Everything *S* gives is possibly beneficial for *B* (and vice versa).
2. Not everything *S* gives is beneficial for *B* (and vice versa).
3. *B* decides what is beneficial for *B*; *S* decides what is beneficial for *S*.
4. Some of what *S* deliberately does remains unnoticed and thus not assessed by *B* (and vice versa).
5. Some of what *S* unintentionally does is noticed and assessed by *B* (and vice versa).
6. The relationship between the costs of *S* and the benefits of *B* is seldom proportional. The relationship between the costs of *B* and the benefits of *S* is also seldom proportional.
7. Some of what *S* or *B* do to create benefits for the opposite side can create damage.

Figure 1.13 illustrates the possible relationships between the buyer's perceived benefits and the seller's costs. Figure 1.13 shows (a) a linear relation between the seller's costs and the buyer's benefit, (b) a saturation curve, and (c) a curve with a maximum after which utility declines steeply and eventually becomes negative. Figure 1.13 (d) shows no relationship between the buyer's benefits and the sellers costs.

1.2.4 The Second Condition for the Emergence of a Transaction

The first condition means that nobody will voluntarily enter an agreement that makes them worse off—taking into account all anticipated benefits and costs. The second condition stems from the fact that a transaction does not take place in isolation, and that buyers and sellers make comparisons among alternatives when evaluating a transaction.

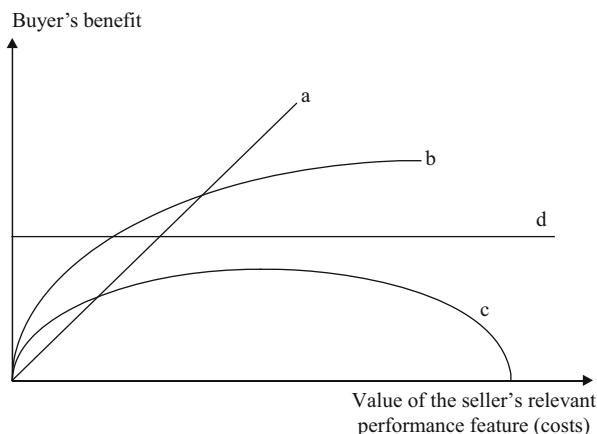


Fig. 1.13 Hypothetical utility functions for the buyer in terms of the seller's costs

The buyer and seller evaluate a given exchange ratio relative to a given *level of expectation*. The basis for comparison is what *Thibaut and Kelley* term the “comparison level (CL)” (Thibaut & Kelley, 1986). This constitutes a *reference point* that emerges from the decision makers past experience and from knowledge and beliefs about the alternatives available. In more general terms it refers to what the decision maker considers fair, right, appropriate, or realistic. The second condition for the emergence of a transaction is that the value of the exchange ratios for the buyer, V_B , must be greater than or equal to the buyer’s comparison level. Otherwise the buyer will not accept the agreement—at least not without additional assumptions.

Condition 2

The value of the exchange ratio for the buyer must equal or exceed the level of expectation, i.e.,

$$V_B \geq CL$$

where CL = evaluation standard for V_B

The comparison level CL is determined by the claims and expectations of the buyer or seller. The claims are derived from experiences in past exchanges as well as from the perceived value of alternatives. If the transaction is influenced by *alternatives*, we call this situation competition. The buyer B and seller S are not alone; they compete in solving their problems through exchange with the *interests of other market participants*. This is because, in a market economy, a third party is involved in any exchange between a seller and buyer—the seller’s competitor (SC) and the buyer’s competitor (BC). Transactions under free market conditions are agreements reached under the influence of competition. Hence, the aim is not only the achievement of mutually acceptable exchange ratios but, in addition, each party has to prevail over a competing party. Naturally, this alters the exchange behavior of the parties involved.³⁴

Definition 7: Market Transaction

The agreement between a seller and a buyer about what each of them gives and receives, achieved as the result of competition on the seller’s and buyer’s side.

Hence, the second condition for the emergence of the exchange is that S does not perceive a better alternative *and* B does not perceive a better alternative. The buyer

³⁴ Not every transaction is a market transaction. A transaction is an agreement between two parties about what each party gives and receives and is achieved if two parties reach an agreement without any market exchange process. This is the case for instance in labour relations, where party A gives an order to party B which B carries out because they are employed by A.

compares the offer of seller S with each alternative offer from sellers SC1, SC2, . . . , SCi, . . . , SCn. The seller compares the offer of buyer B with the offer of buyers BC1, BC2, . . . , BCi, . . . , BCm.

Condition 1 has to apply to each potential exchange partner. Sellers and buyers evaluate the partner in an exchange ratio, and they also undertake exchange activities with other potential partners and make comparisons.

The focus of comparison for the buyer in a given exchange ratio with S is the exchange ratio with the best alternative seller SC—the opportunity cost. S has to offer an exchange ratio which is superior to that of the best alternative seller. Thus, from the buyer's perspective, the second condition for the emergence of a transaction, considering all the perceived costs and benefits in the exchange ratio,³⁵ is as follows:

Condition 2a (Buyer's Perspective)

$$V_{B/S} > V_{B/SC} \Leftrightarrow \frac{\text{benefits}_{B/S}}{\text{costs}_{B/S}} > \frac{\text{benefits}_{B/SC}}{\text{costs}_{B/SC}}$$

The ratio of anticipated benefits and costs in the exchange with the seller S has to exceed the corresponding ratio with seller SC.

Condition 2 is developed in the same way for the seller. The seller, if the market situation permits, will develop a reference point that is used as the basis for choosing among potential buyers.

Condition 2b (Seller's Perspective)

$$V_{S/B} > V_{S/BC} \Leftrightarrow \frac{\text{benefits}_{S/B}}{\text{costs}_{S/B}} > \frac{\text{benefits}_{S/BC}}{\text{costs}_{S/BC}}$$

The ratio of anticipated benefits and costs in the exchange with buyer B has to exceed the corresponding ratio with buyer BC.

1.2.5 Conclusions

Each participant in an exchange process gives as well as receives. The value received is defined by the recipient, the value given by the giver. If the value received exceeds the value given, then a party's welfare will be increased. If this

³⁵ Whether the individual benefit and cost components can be added together we shall leave open at this point. Here we are concerned about but clarifying the structure of an agreement, not about measuring benefits and costs.

holds true for both sides, then the first condition for a transaction will be fulfilled. In order to achieve a market transaction, both the buyer and the seller must be unable or unwilling to find a better alternative. This is condition 2.

In summary, no one can successfully participate in market activities without being able to offer a deal (an exchange ratio) that is advantageous for others. This applies to firms as well as to employees, it applies to capital owners and to landowners, it applies to all people and organizations participating in market transactions.

Let us once again consider “Lucky Hans.”

- During his brief journey, Hans is involved in five transactions with various exchange partners, i.e., he reaches agreements about goods to give and to receive. The horse seller accepts the horse for gold; Hans accepts gold for the horse and so on. The result is the mutual transfer of ownership and usership rights—Hans transfers ownership of the gold nugget, the horse owner that of the horse.
- Hans and his exchange partners engage in each transaction voluntarily. In each exchange situation, Hans determines afresh the subjective value of what he gives and gets and, presumably, so *do* his exchange partners. In each case he perceives the anticipated benefits as greater than the anticipated costs. Hans has, from his perspective, had a successful exchange in every case, as we can see from his expressions of happiness shortly after each exchange.
- Obviously, Hans has a certain style of decision making. He acts only according to condition 1, i.e., he is satisfied in each case if the value acquired seems greater than the value given. Hans has no reference point, as he does not compare an exchange ratio with earlier experiences or to alternatives, as we expect according to condition 2. Hans does not ask if other market participants would accept a similar exchange ratio or offer a more favorable one.

Now a hint to the reader: We have described complex exchange and know that, realistically, more than three parties are involved and that often more than one person is involved in negotiating an agreement. The consequence of this is that the conditions we set for the emergence of a market transaction are context and actor specific. They are formulated in a specific case for *each involved actor and person* and we need to take into account the effects of interactions among the people involved. Hence, an analysis of the design and influence of market transactions—the theory of marketing management—is very complex for both researchers and practitioners.

1.3 The Market Process and Entrepreneurship

Up to now we have described the characteristics of simple, extended, and complex exchange, as well as the conditions underlying the emergence of market transactions. Now we focus on the operation of the market as a whole rather than on individual transactions. Individual transactions do not occur in isolation, but are connected directly and indirectly to other market transactions. This interdependence arises from the competing interests of the actors involved, as when the buyer chooses seller S instead of SC, or the seller decides in favor of buyer B instead of BC. We call this competition. Here, we broaden our concept of competition to view it as a process that involves market participants learning from past experience. Of particular importance is the role played by the “entrepreneur” in the market process, the economic actor who identifies profitable opportunities. The central role of information in the marketing process is also highlighted.

The market is formed by all those seeking benefits via exchange and is in a sense infinite. In order to analyze the market process, we will confine our analysis to activities taking place in a particular period of time. We define the market process as comprising all exchange efforts and market transactions, together with their consequences, that occur in one time period such as a day, month, or year.

In order to illustrate the mechanism of competition it is helpful to conceive of a market in a rather abstract way—as a process in which every person and firm can participate as a buyer and/or as a seller. Everyone who joins the market process is in search of favorable exchange ratios and participates in exchange processes that either result in a market transaction or ends. A market transaction results if an agreement between at least two parties takes place (as defined in Sect. 1.2).

Individual market transactions affect one another in many ways. This is in part because each market participant has to coordinate their own aims and behavior with the aims and behavior of other market participants, including competitors and potential exchange partners. Hence, for a market participant to make its own decisions, information is required about the aims and behavior of other market participants. However, such *information always remains incomplete*, which results in errors and incorrect decisions leading to lower profits and value than might otherwise be possible. Purchases may be made that are more expensive than necessary; sales are made at prices that are lower than could have been obtained. Learning takes place based on such mistakes and provides a basis for improved decisions in the next period of the market process. However, since all market participants learn and adjust their behavior in the next period, further mistakes and incorrect and inferior decisions can still be made. In this way the market process continues.

The market process can be viewed as a *search process that never stops for any participant*.³⁶ Since all market participants are engaged in this search process, the

³⁶Friedrich A. von Hayek (1960), the Austrian Nobel Prize winner in economics, describes the market process as a “process to discover facts which would remain undiscovered or at least unused without him”.

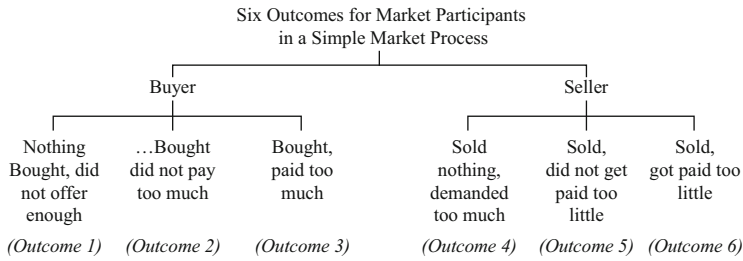


Fig. 1.14 Six outcomes for market participants in a simple market process

market in effect creates the knowledge needed by buyers and sellers to act: “. . . the whole organization of a market mainly serves the distribution of information according to which the buyer has to act” (Hayek, 1976). The basic explanation of the market process is in terms of the limits of human knowledge and the constant search for and acquisition of information (ibidem). The market is a mechanism for efficiently and effectively creating and dispersing information and responding to change (ibidem).

Kirzner developed a helpful way of describing the market mechanism (Kirzner, 1973). He first postulates a market of buyers and sellers in which no participant is aware of the whole market process. In addition, no participant is able to learn from past experience, such that they make their decisions again and again in the same way. In this situation there are six possible outcomes for the market participants as shown in Fig. 1.14:

- *Outcome 1*: Buyers exist that were willing to buy but go home unsuccessful because they did not offer sufficiently high prices. They have not learned that one buyer has to outbid the other.
- *Outcome 2*: There are buyers who purchased and did not pay too much.
- *Outcome 3*: Some buyers purchased, but have not discovered that they could have bought the same goods cheaper.
- *Outcome 4*: Some sellers leave with goods unsold, because they demanded too high prices. They have not learned that in order to sell, they have to underbid other sellers.
- *Outcome 5*: There are sellers that have sold and have not received too little.
- *Outcome 6*: Sellers exist that have sold, but without discovering that they could have sold their goods or resources at higher prices.³⁷

In this model, market participants’ plans are only met in outcomes 2 and 5. In all other cases they have not achieved their aims because they did something wrong

³⁷ We use Kirzner’s model to aid our analysis, not for the description of the entire reality. Other outcomes could be imagined, such as sellers that could have sold more had they learned that they have to produce more.

without realizing it. In this model there are *profit opportunities* in cases 1, 3, 4, and 6. Let us now imagine an adaptive and alert new market participant entering this market where nobody learns. The alert new market participant would discover quickly that some participants buy too expensively and that others sell too cheaply. Hence, they would buy from those who have not noticed yet that they sell too cheaply (case 6), and sell to those who have not noticed yet that they buy too expensively (case 3). Profits result because of the inability of the other market participants to learn and the new market participant's ability to detect these opportunities. The new market participant's alertness is rewarded with profits. The profit consists of the difference between the selling price and purchase price or what is known as market arbitrage. Should the other market participants fail to learn, such profits are guaranteed in the long run.

This is a hypothetical example. Buyers and sellers in real markets do learn and are adaptive. They learn from the experiences of their actions in the market. For example, they discover that they have paid too much or sold too cheaply, they observe what other market participants do, and they can adjust their behavior accordingly. Hence, the profit opportunities in *Kirzner's* market model should disappear. And indeed they do—but with a delay. *Market learning takes time*, and therefore, *at least temporarily*, profit opportunities arise in real markets.

Profit opportunities arise again and again in markets as a result of uncertainty regarding the plans of other market participants as well as due to changes in the plans and expectations of market participants. But these opportunities disappear over time—sometimes very quickly, sometimes relatively slowly.

Market participants who are able to detect profit occasions are called “entrepreneurs” by Kirzner. The word “entrepreneur” has a special theoretical meaning and must not be confused with the everyday meaning of the term. It refers to the role of detecting profit opportunities. The entrepreneur is characterized by alertness and speed of response. Entrepreneurs find profit opportunities quicker than others who might have similar interests and they take the initiative, innovate, and thereby create advantages for themselves and others.

When the entrepreneur successfully exploits a profit opportunity, something important happens that underlies the operation of the market process. New market information is communicated to other market participants, which improves their market activities. By buying from the seller who up to now sold too cheaply and selling to the buyer who up to now bought too expensively, the entrepreneur sends out a *signal* to all other market participants:

- Other market participants hear that there are some who sold too cheaply. They will offer higher prices to them than these sellers thought possible up to now. These buyers then act as entrepreneurs.
- Other market participants realize that some have paid higher prices. They will offer lower prices—lower than these buyers thought possible up to now. These sellers then act as entrepreneurs.

The opportunities detected by an entrepreneur are seen by others, who will try to exploit them as well. In order to succeed, the entrepreneurs have to outbid one another for sellers and underbid one another for buyers. This process results in the gradual erosion of the opportunity as market participants are driven by competitive market processes closer to the limits of their ability to participate successfully at the market (Kirzner, 1973). Profit opportunities detected by entrepreneurs are therefore generally temporary. They disappear via the creation and diffusion of market knowledge, i.e., the information given to the other market participants by the entrepreneur. Profit opportunities attract other entrepreneurs, who start to *compete* with the original ones.

The market process cannot be fully known to the individual market participant, due to the imperfections of human knowledge and due to the uneven distribution of information about the plans and behavior of others. Individual market participants, through their market activities, gather information and at the same time send out information to the other participants in the market process. *The flow of information, as well as the search for and competition over favorable exchange conditions become key elements of a theory of the market process.* Figure 1.15 summarizes the nature of the market process.

In Fig. 1.15, the outcomes of the market process, i.e., the nature, extent, and terms of market transactions, depend on the market participants' plans and actions. These outcomes feed back to the market participants as information. This produces modifications in plans and actions in the next period and so the process continues.

The market process is driven by entrepreneurs' continuous search for profit opportunities. "The necessity to realize profits compels an entrepreneur to adapt as quickly and completely as possible to the desires of buyers (on the goods market) and sellers (on the resource market)" (Mises, 1949). Thus, one of the main driving forces of the market process is the role of the entrepreneur who continuously

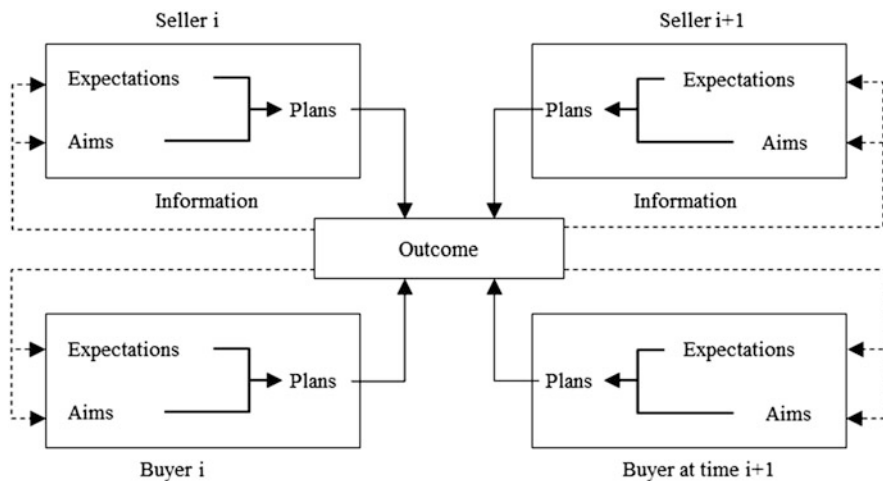


Fig. 1.15 Structure of the market process

searches for *yet unnoticed* changes in circumstances, which enable them to achieve more favorable exchange ratios than was possible or known up to that time. Markets are subject to continuous change because of market uncertainty and because of economic, technological, and social change. Hence, the market process can be seen as “. . . a journey into the unknown, an attempt to discover new ways to make things better than up to now” (Hayek, 1976).

The entrepreneur is not only a trader who buys and sells products. A producer can be an entrepreneur. A producer takes in inputs from its environment and combines or transforms them into products or services, which are sold. The value of these external inputs as well as the producer’s own inputs is what the “producer” buys; the value of his products or services is what he sells.

An earlier description of an entrepreneur’s function is the “dynamic entrepreneur” in the works of the famous Austrian economist Joseph A. Schumpeter (1984). According to him, the entrepreneur’s task is to identify and bring about new combinations of manufacturing resources.³⁸ It is not necessary that the entrepreneur develops the ideas himself; he only has to recognize the potential benefits and innovate in the face of resistance. The profits earned by the innovator create in turn incentives for other market participants (*imitators*) to copy it. This gradually erodes the profit, which spurs entrepreneurs to seek out additional opportunities by means of further recombination of productive factors and by responding to industry or market changes. The result is what Schumpeter calls a process of “creative destruction” in the economy in which entrepreneurial activity leads to the continual supplanting of existing patterns of production by new ones.

A further refinement of the concept of the entrepreneur recognizes that the “entrepreneur” does not act alone in real markets. The detection of profit opportunities takes place in firms made up of systems of specialized labor that require coordination. Entrepreneurial functions are carried out by individuals as well as by groups. Furthermore, the entrepreneurial function needs the cooperation of a number of people in a firm, which leads to a coordination problem that cannot be separated from the entrepreneurial function itself. The perception of profit opportunities therefore arises from the joint action of members of a firm, and, as such, entrepreneurship is also an organizational and management task. The perception of profit opportunities also arises from the joint action of people in different firms because of the different types of knowledge and perspectives they are able to combine and recombine.

Let us consider once more “Lucky Hans.” We can now make some important observations about Hans’ behavior. First, he does not learn and adapt his behavior. As a market participant, he does not learn from past experience. In reality, however, we know that the market process is a learning process for all involved—for market participants as well as for observers. Second, in this fairy tale no competition exists. Rather, it tells us about isolated transactions between two individuals. If

³⁸ For Schumpeter, this encompasses not only new products and product attributes but also new technologies, new resource, and intermediate goods markets.

competition took place, a market process would emerge. Hans' willingness to exchange a large gold nugget for a horse would immediately come to the attention of other horse sellers, who would offer more favorable exchange ratios—maybe ten horses, or a big house for him and his mother plus a horse. But, since no competition exists, Hans receives no information about the other market participants' assessments of their assets and about the exchange ratios they are willing to offer. Hence, we see clearly the important role of information in the market process.

1.4 Competitive Advantage

We have come to understand the market process as a never-ending process of learning for all involved, a process that is kept running by the entrepreneur who detects profit opportunities. Entrepreneurs sense differences in the market, they discover the possibility to sell something at a higher price than they can buy it for, and they disperse this knowledge—voluntarily or involuntarily—to other market participants. This process is a competitive one that rewards the capable and punishes the less able. Competition among sellers, therefore, has a selection function that creates better problem solutions for the buyer.

The Austrian economist Ludwig von Mises described the situation in the following way: “The entrepreneur can only act a step ahead of his competitors if he strives toward serving the market more cheaply and better. More cheaply means richer supply; better means supply with products not yet in the market” (Mises, 1949). The selection process is analogous to that of biological selection, and selection is the fiercest among similar market participants. As Charles Darwin, in 1859, noted “The struggle for survival is most severe between individuals and varieties of the same species” (Darwin, 1989). In more modern parlance, the market may be described as a complex adaptive system in which large scale order and change arise in a bottom-up self-organising way from the local actions and interactions of the actors involved (Wilkinson, 2006).

In this section, we consider the most important factors that determine business success in the market. This requires a more detailed analysis of the nature of competition and competitive advantage. Questions that seem at first quite simple turn out, on closer analysis, to be much more complicated.

1.4.1 “Vive la différence!” The Principle of Sustainable Differentiation

This section analyzes the effects of similarities and differences in competition and will consider various situations that affect the nature of competition and the outcomes for the seller. The situations are differentiated in terms of three factors:

	Complete market knowledge	Incomplete market knowledge	
	No barriers		Barriers
Homogeneous offers	case 1	case 3	case 5
Heterogeneous offers	case 2	case 4	case 6

Fig. 1.16 Types of competitive situations

- **Homogeneity:** The offers in a market are homogeneous if they resemble each other in all aspects, so that the buyer perceives no difference among them. Offers are heterogeneous if they differ either objectively or as perceived by the buyer.
- **Knowledge:** Buyers have complete market knowledge if they know without delay about all offers in the market.
- **Barriers:** Barriers hinder free market entry: new sellers cannot enter the market without entry costs or constraints, and sellers already in the market cannot imitate the characteristics and behavior of other sellers.

Figure 1.16 depicts six cases that will be considered in more detail in the following.

Case 1 is not very realistic but provides a basic case for illustrating some of the issues discussed in this chapter. It describes a world in which there is no market uncertainty, several sellers exist, additional sellers can enter the market at any time without market entry costs, and sellers are homogeneous. The sellers offer products and services that are perceived the same by the buyers in terms of being offered at the same time, in the same place, in the same way, and for the same price. The buyer has complete market knowledge.

What happens in this case? Assuming that buyers are willing to buy, that they needed to solve a problem, it would not matter which seller they buy from. They are indifferent, because the exchange ratio with each seller has the same value. They would have to decide arbitrarily, by some random process. *No competition exists* here, as a buyer could just as well throw a dice to make a buying decision.

Let us now introduce the possibility for sellers to set a price for their offer. Sellers will try to attract buyers by undercutting each other, and other sellers will react. The outcome is a single market price. The reason for this is simple. If different prices existed for identical offers, all the buyers would know this and immediately buy from the cheapest seller. In 1871, the English economist Jevons first described this circumstance and called it the “Law of Indifference”.³⁹

³⁹ When a good is perfectly uniform or homogeneous in quality, any portion may be indifferently used in place of an equal portion: hence, in the same market, and at the same moment, all portions must be exchanged at the same ratio. There can be no reason why a person should treat exactly similar things differently, and the slightest excess in what is demanded for one over the other will cause him to take the latter instead of the former. Hence it follows what is undoubtedly true, with proper explanation that in the same market, at any one moment, there cannot be two prices for the same kind of article. The principle above expressed is a general law of the utmost importance in Economics, and I propose to call it “The Law of Indifference” (Jevons, 1911).



Fig. 1.17 The profit situation of different sellers offering identical products or services at the same price

Let us now assume that not all sellers have the same costs for the same performance. Hence, sellers exist with costs above and below average in the market. If under the conditions of the “Law of Indifference,” a single price for all sellers arises, some sellers will exist for whom this price will be satisfactory, because it is above their average costs. Other sellers will make a loss, because the price is below their average costs.

Figure 1.17 illustrates this situation in simple terms. Each column represents one of 20 sellers ordered in terms of their average costs. The height of a column represents the average costs of a seller. Sellers 1–12 make profits, whereas sellers 14–20 make losses if indeed they offer their products or services for sale. If the price was reduced by one seller, say seller 4, then the price for all sellers would fall to that price, under the conditions of the “Law of Indifference.” All sellers would have to adapt to the cost levels of seller 4 or exit the market. The purchased quantities would have to be supplied by sellers 1–4 or by new sellers with similar or better average costs.⁴⁰ Seller 1 with the most favorable cost structure has the highest degree of price flexibility and can make use of it subject to any constraints on his manufacturing capacity.

⁴⁰ Real markets with features similar to these, particularly those with homogeneous products or services, tend to have intense price competition, which creates a single price and erases major price differences. An example is the mass steel market since the middle eighties. Here, there are no major performance differences and the fight for survival is carried out primarily by means of price and related features. With cost structures being similar and with a supply surplus in the market, hardly any profits are made. That is why most sellers try to cut costs in order to create advantages. Price is the main competitive instrument and the really decisive competitive parameter is cost, which determines survival in market. A seller’s competitive weapons are cost cutting modernization, rationalization, cross subsidies from other business activities in the case of companies with more than one product, and external subsidies as sometimes occurs in international competition. In these situations, attempts are made to organise supplier cartels that regulate the quantity supplied, as has happened in the oil market with the emergence of the Organisation of Petroleum Exporting Companies (OPEC). However, our analysis shows that the market itself will solve the situation anyway by eliminating less efficient suppliers from the market. This can happen on a global basis, which has happened in the steel, shipbuilding, and steel machine industry.

In sum, the competitive situation in case 1 is such that a single price arises at which only those sellers can survive whose average costs are lower or equal to this price. Every price reduction of one seller reduces the price for all because they are all completely substitutable.

Case 2 is closer to reality. Market offers are heterogeneous and sellers can satisfy buyers' desires in different ways. Because there is perfect market knowledge, buyers know about these differences and develop preferences based on different aspects of the offer, including place, time, features of the product or service, or personal characteristics of the seller. Because offers are heterogeneous, sellers have the potential to charge above average prices and make additional profits even given the additional costs of differentiation.⁴¹ This creates a price range within which buyers and competitors do not react to price differences. The wider this is, the closer resembles the position of the seller that of a monopolist and the greater are its profits, other things being equal (Gutenberg, 1984).

The degree of discretionary pricing that is possible creates profit opportunities, unlike case 1. The reason for this is the existence of monopolistic elements in the market. Of course, the assumptions of perfect market knowledge and lack of any market entry barriers are unrealistic. In real markets we would expect imitators to emerge who would try to gain a share of the profits now possible, and they would, through the operation of the market process, eventually eliminate the profit opportunity. Hence the "Law of Indifference" would be valid again.

Case 3 differs from case 1 in that there is no perfect market knowledge, but sellers' offers are still homogenous. Buyers and sellers have incomplete information and therefore uncertainty becomes part of their decisions. The result is that, as we have described above, entrepreneurs arise, who buy from those who sell more cheaply and sell to those who have not yet noticed that they could buy more cheaply.

Entrepreneurs make *arbitrage profits*. Other entrepreneurs, learning about the profit opportunities, emerge and compete with the original entrepreneur, which eventually eliminates the profit opportunity as market knowledge is increased by the action of the entrepreneurs. The final outcome is perfect market knowledge and a single price for all buyers.

In summary, in a market with homogeneous offers, a single price arises even under incomplete market knowledge, depending on the speed of the flow of information. Profit opportunities in this situation arise temporarily as a result of the lack of information, and they are eroded through the activities of "entrepreneurs."

Case 4 is a further step toward reality. Heterogeneous competition and acquisitorial potential exist. Price competition and product and service differentiation prevail and market knowledge is incomplete, giving rise to entrepreneurs. This time, however, entrepreneurs do not only imitate the exploitation of price differentials in the market (case 3), they also imitate the successful seller who has created a partial

⁴¹ This is why the analysis by Gutenberg (1984) focuses on the case of incomplete market knowledge.

monopoly for itself (case 2). Thus, the *entrepreneurs profit through information advantages as well as through innovation* which differentiates their offers. Imitation will sooner or later eliminate the profit opportunities arising in case 2.

In this case we see that imitation does not only eliminate differences in prices with cheaper offers succeeding. It also evens out quality differences, because more efficient, better offers prevail.⁴² Information shortages and quality differences that initially exist will tend to disappear, and the temporary profits of cases 2–4 will disappear, shifting the situation to case 1.

Cases 5 and 6 differ from cases 1 to 4 because barriers exist. Barriers act as an obstacle to competition for new entrants as well as for those already in the market. Market entry barriers are always disadvantageous for new entrants compared to incumbent sellers, because the latter can approach buyers more easily than new entrants. And if a seller has a first mover advantage compared to its competitors then others cannot catch up—either because they are unable to (the advantage is too great) or because they do not want to (e.g., they are afraid of the first movers' response).

In the case of product homogeneity and incomplete market knowledge (case 5), a seller such as seller 1 in Fig. 1.17 can create a barrier for potential competitors by creating a cost advantage that cannot easily be imitated, at least in the short term. The result is that competitors cannot compete on price, because their competitive position is weak. The effect of that is shown in Fig. 1.17. Seller 1's profit is higher than the competitors'. And its profit is sustainable as long as no competitor is able to imitate the cost advantage.

The interpretation of case 6 is similar to case 5. If a seller manages through product or service differentiation to be preferred by the buyers and as a result earns higher profits, this acts as a barrier as long as competitors cannot imitate the differentiation. *Hence, barriers are, among other things, the reason for sellers earning profits significantly higher than competitors.*

The picture of competition created in cases 5 and 6 provides the basis for an analysis of competitive advantage. Dynamic seller competition means that sellers are permanently searching for and experimenting with new products or services in order to find or create ones that distinguish themselves from those of other sellers, in terms of value to the buyer and/or the costs they incur. If a competitor succeeds in operating with lower costs than its competitors, then it can offer lower prices to buyers, which can increase its market share and profits. If a seller succeeds in offering a better product or service without higher costs, then it can increase prices and earn higher profits. This never-ending search and experimentation has only one

⁴² An example is the quality certification system ISO 9000 developed by the European Commission. At first, sellers that had their quality systems scrutinized and certificated had a competitive advantage. Today, with many sellers having done so, no positive competitive effect remains. Negative competitive effects do remain, in that buyers avoid sellers without a certificate. Kleinaltenkamp (1993) derives the competitive effects of norms and standards for product qualities from Kirzner's theory: "Accordingly, the existence of product and system standards could be interpreted as an equilibrium regarding the quality of the goods traded in the market."

aim: *By differentiation, the seller wants to avoid being substitutable.* Furthermore, a seller strives to establish a difference that is sustainable; it wants to avoid being imitated.

It is necessary for sellers to differentiate their offer in meaningful ways from competitors and to make it difficult for others to catch up. Nevertheless, others will constantly try to imitate the successful seller to become more successful themselves.

Let us summarize: One can only understand competition by focusing on the relations between sellers. The differences between them determine success or failure. Success depends on the existence of factors that maintain the differences, at least for a certain while. We will term this essential feature of market-driven action as “*the principle of sustainable difference.*” Every effort of a seller to create a successful competitive position has to be planned, carried out, and controlled from this perspective. The size of a seller’s competitive advantage and hence of its profits depends on how strongly its offer differs from competitors in features perceived and appreciated by buyers. But competitive advantage also depends on how much lower its average costs are compared to competitors, given comparable offers. The competitive strength of a seller is the outcome of differentiating itself from other sellers with respect to relevant features. Hence, competition is in the first place not about being “good” or “cheap,” but about being “better” or “cheaper.” That is why we focus on a firm’s *relative* competitive position.

We shall analyze a firm’s relative competitive position by means of a three-stage model: the sources of competitive advantage, its form, and its effects.⁴³

Figure 1.18 describes how the three elements work together. Let us begin with the first stage—the sources of competitive advantage. In competition, every seller has certain capabilities or competencies based on its skills and resources, including all the people and their knowledge, the plant and equipment, customer relationships, and corporate image and reputation. Competencies are all the factors a seller can use in order to achieve its goals (Riebel, 1970).⁴⁴ It is essential for success in competition that the capabilities it has fit with the problem solutions desired by buyers. A seller who strives for competitive advantage will try to develop or acquire better talents and resources than competitors and will try to protect them against imitation.

Also essential for competitive success is the way in which processes within a firm are organized. Internal processes require specific combinations of competencies in order to be used. These processes encompass all the procedures and operations taking place within a firm including logistics, order processing,

⁴³ Similar arguments are presented by Day (1990) and Day and Wensley (1988) who see “skills” and “resources” as reasons for competitive advantage.

⁴⁴ Regarding the classification of sources of competitive advantage see also Engelhardt (1966). The idea of distinguishing between potentials, processes, and program was brought up by Erich Gutenberg who saw all procedures within a company as formed by resource inputs, resource transformations, and resource outputs (Gutenberg, 1989). We shall maintain Gutenberg’s concentration on a company’s productivity when determining competitive advantage from the interplay of potentials (resource input), processes (resource transformation), and program (resource output).

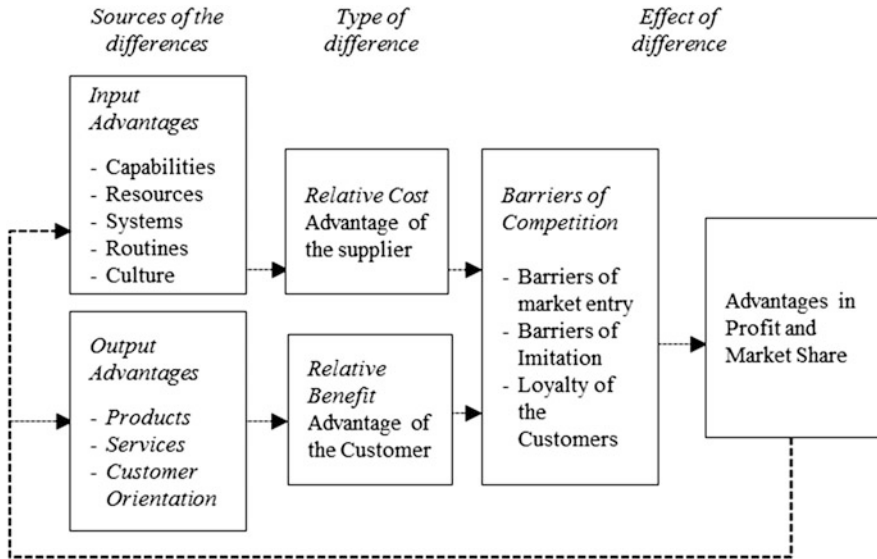


Fig. 1.18 Elements of competitive advantage

production, distribution, research, marketing, and planning processes. These processes can be imitated by others and this is why companies try to achieve and defend specific process advantages.

Competencies and processes together determine the output of a company and we call this a firm's *program*. It includes the outputs offered to the market and what it expects from others in return. The program is the firm's total offer including the nature of the product, the product range, services, communication, distribution, and price. The program is what distinguishes one firm from others. It is its visible source of differentiation for the buyer. Once achieved, a company usually tries strongly to defend an established differential advantage.

Competencies, processes, and programs together are the means by which a seller tries to create and defend differential advantage over his competitors. Every effort to improve a firm's competitive position has to start at one or more of these three components. Competencies are what the company *possesses* to survive in competition. Processes are function-specific operations and are what the company *does* in order to succeed against competitors. The firm's program is what the competencies and processes are transformed into in order to offer a benefit to buyers.

As a result of its particular mix of competencies, processes, and program, a seller achieves a certain competitive *position*. This position has various dimensions. First is the type of advantage, which may be by means of cost advantages or benefit advantages. The former describes the seller's average costs as compared to competitors; the latter describes the net benefits perceived the buyer, compared to buyers' perceptions of competitors' offers.

The second dimension of a firm's competitive position concerns the effects of cost or benefit advantages. It is these effects that create a favorable competitive

position. For the seller, cost and benefit advantages lead to increased buyer satisfaction, an enhanced image, an increased repeat purchase rate, higher than average profit, and potentially a higher market share compared to competitors. Above average profits and a greater market share indicate a seller's superiority. Furthermore, its extra profits mean it can *invest* more heavily in competencies, processes, and programs in order to secure and extend its advantageous position.

To summarize, it is clear that we have to distinguish between the seller's and the buyer's perspective. We can also distinguish between the sources of competitive strength—differences in competencies, processes, and programs—and the effects of a competitive position—the cost and benefit differences.⁴⁵ We will now analyze the dimensions of competitive advantage in more depth.

1.4.2 Analysis of the Sources of Competitive Advantage

1.4.2.1 Differences in Competencies

Each company is different, because each has its own history. Over time, as a result of its actions and interactions, a firm develops a unique set of experiences. These experiences reflect all the decisions that the company has made in the past and all the learning that has taken place by the people in the company, including the collective learning that has taken place. The latter includes experiences in managing the internal interactions taking place among different subunits and processes in the firm; the effects of earlier investments in goods and services on internal operations, on human resources, or on market relations; and the external effects of such investments on business contacts and relationships, on market knowledge, and on the firm's reputation. The sum of these effects is embodied in the competencies of the firm. There are competencies in all aspects of a firm, in the structures of leadership, in the ways employees think, and in the learning ability of the firm and its immediate environment.

Therefore, competencies are all the abilities, resources, capacities, external linkages, and support a seller can activate in order to *approach* a new market, to *attack* a competitor, or to *defend* itself against an attack from competitors. In competition, competencies only make a difference if they are firm specific, i.e., if they cannot easily be acquired by others internally or externally. One of the most important competencies is the corporate culture, which results from the collective development processes. Some examples of the potential sources of differential advantage are:

⁴⁵ An issue here is that of measurement. Customer perceptions and assessments cannot be measured in the same way as those of the seller. Differences in competencies, processes, and program are difficult to quantify. However, an analysis of relevant differences can be carried out. This chapter is not about techniques for measuring a firm's competitive strength, but about conceptual questions regarding the nature and sources of competitive strength.

- The productivity and creativity of researchers and developers
- Design competences
- Availability of new technologies
- Knowledge about customer needs and about how to meet them
- A deep and broad product range
- Reputation
- A favorable location
- Access to essential raw material and to important input suppliers
- Capital stock
- Relationships to important opinion leaders
- Stable business relationships
- Integration into a cooperative network.

It is the competencies firms have relative to competitors that underlie their strengths and weaknesses. A firm's competencies can result in various types of performance of relevance to buyers, and it is their strength in *possible* competition that is relevant.

One way to analyze the competencies of a firm is in terms of its strengths and weaknesses. This analysis involves first developing a list of the main types of abilities, resources, capacities, external linkages and supports, and weighting them according to their perceived importance. Then, a firm is rated in terms of how strong or weak it is on each item. A weighted summation reflects the overall strength or weakness of the firm.

A strengths-and-weaknesses analysis can be carried out from a seller's or a buyer's perspective. If carried out by a seller, it will try to adopt a *buyer's perspective* in rating and weighting the items, although there are of course dangers of projecting the seller's own views onto the buyer. The buyer might think about these items in a completely different way.

A strengths-and-weaknesses analysis of a seller can also be done by a buyer. It can be used to compare different sellers in a systematic way before choosing one. Many industrial customers carry out such analyses regularly and give the results to their suppliers, often including previous results. Sometimes buyers use this as a basis for giving awards to their suppliers or for imposing penalties. In this way it is used as an instrument to improve sellers' performance.

1.4.2.2 Process Differences

Each firm is different, because each firm has different processes. The uniqueness of its processes is a direct result of the uniqueness of competencies. Competencies influence *actual* processes in the same way as the firm's history influences its competencies. The competitive strength of a seller is therefore not only dependent on its competencies, but equally on the *processes* it employs, which encompass all functional parts of the firm. The following questions illustrate the variety of processes involved:

- How long is the time between order and delivery?
- How fast can the firm adapt to demand changes?
- How fast does the firm complete development projects, reorganize processes, bring new products on to the market, and react to customer demands?
- How much and where does the firm invest in research and development compared to its competitors?
- In which way has the firm organized its distribution compared to its competitors?
- How flat or extended is its management structure compared to its competitors?
- How “market driven” is the firm?
- How well does the coordination of the individual departments enable a consistent market orientation?
- How many production processes does the firm carry out itself, and which ones are carried out externally?
- What can be achieved externally that is less costly?

Michael Porter's model of the value chain is useful when analyzing process differences (Porter, 2004). The firm is interpreted in terms of a system of interrelated processes that together accomplish the tasks of the firm. The value chain indicates the way in which a firm fulfills its tasks and reflects the firm's history, its strategy, its methods of operation, and the economic foundations of the firm's activity (ibidem).

The “value chain” as illustrated in Fig. 1.19 includes the value creating processes of a firm plus the profit margin. According to Porter, the overall value created by the firm's production processes minus the profit margin forms the costs of the value creating activities. Primary activities are concerned with the production of a product and with its sale, delivery, and customer servicing. Support activities are necessary to maintain the primary activities. They are involved in procuring and managing inputs of products, technology, and human resources, and in carrying out functions necessary for the operation and integration of the other activities such as financing and planning. The dotted lines indicate that an activity can be relevant to both primary and supporting activities (ibidem).⁴⁶

The value chain enables us to analyze differences in processes among sellers with regard to possible competitive advantages. Every activity within a firm can be analyzed in terms of its relevance for differentiating the firm's performance in terms of creating benefit differences or in creating a potential to decrease costs. By analyzing process differences we gain information about the competitive strength of sellers, because we can identify processes determining competitive success. However, the analysis is not so much concerned with process differences themselves but with their effects on the seller's costs and—via differentiation—on the buyer's net benefit.

⁴⁶ It is not possible to discuss here whether Porter's distinction between different value creating activities is useful or not. What matters is the analytical idea to develop instruments that enable a comparison between companies in order to analyze and build on competitive advantages. We will come back to the topic of process structures later.

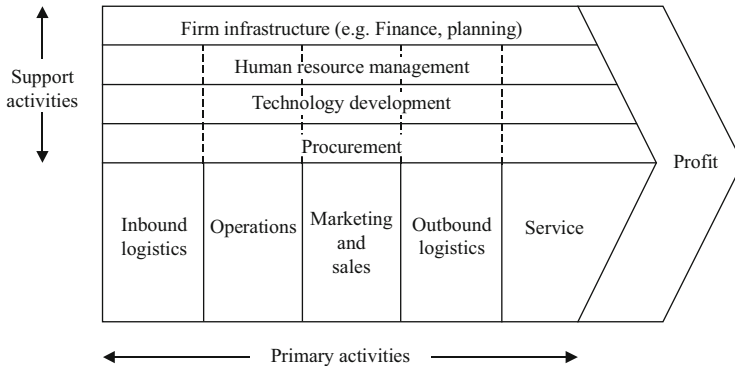


Fig. 1.19 Porter's value chain (Source: Porter, 2004)

1.4.2.3 Differences in Sellers' Programs

The program a seller generates is the outcome of and is limited by its competencies and processes. The scope of the product range, the product's fit with market demand, the advertising fit, and the firm's image in the buyer's mind are all outcomes of the firm's competencies and processes. Price is also part of the program and reflects the competencies and processes, because they determine the firm's costs.

The differential advantage a seller has over its competitors is in part achieved through what it is prepared to do for the buyer. A seller offers a different product and/or service, a different promotion campaign, or distribution channel, or a new method of purchase financing and so on in order to be different from competitors. Naturally, a firm will choose modes of differentiation that the buyer will be able to recognize and value. Only then they will become relevant for the latter's purchase decision. Another way to differentiate is in terms of price. Lower prices increase the buyer's net benefit; higher prices indicate a superior product.

A common way to seek differential advantage is in terms of product differences. *Product comparisons* and tests can be carried out regarding product attributes, aesthetic qualities, use costs, purchase price, etc. As far as possible such an analysis tries to be objective and relates to the buyer's perception and use of the product. The aim is to get to know the competitors' products, to understand the differences that are relevant to their competitive position. From a buyer's perspective, product tests offer useful background knowledge to inform purchase decisions. Industry organizations and research institutes, special interest journals, and specialized service companies serve the markets with comparative product information. If a test focuses on relevant purchase criteria, it can offer useful knowledge regarding the differential attractiveness of products.

However, a product test by itself does not capture a seller's competitive strength. Suppose that in a product test one particular model gets the highest score. Is this proof of its competitive strength? It is, no doubt, an indicator. But you would have to compare the score with the price difference. If, for instance, a higher price

indicates higher costs, then the score would not necessarily indicate a particular competitive strength because product tests can only be one indicator of competitive advantages. Other elements will have to be included. Another consideration is that buyers may not be homogeneous with respect to the problems they are trying to solve or the purchase criteria they use. Hence, a product may rate highly for some buyers but not others. A fuller analysis of buyer behavior and what this means for establishing competitive advantage is left for later chapters. Here, we assume that a market is made up of similar buyers in terms of their problems and purchase criteria and difference among buyers constitute submarkets.

1.4.3 Analysis of Competitive Position

1.4.3.1 Relative Cost Advantage

A seller's competitive strength depends in important ways on its *relative* costs. If a seller manages to produce a similar product at a lower cost than its competitor, it is in an advantageous position that it can use in different ways. We define "cost advantage"⁴⁷ as

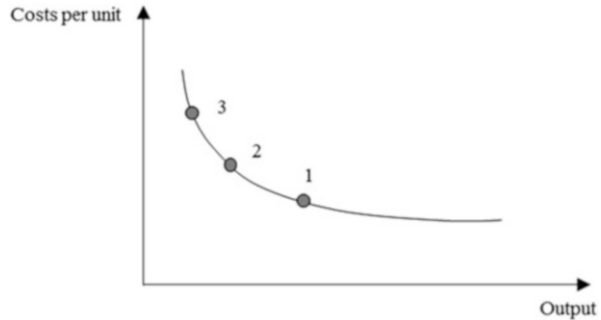
Definition 8: Cost Advantage

$$\text{cost advantage}^{S/SC} = \text{costs}^{SC} - \text{costs}^S$$

A positive number indicates seller S's superiority, and a negative one indicates an inferior position. Figure 1.20 clarifies the effects. Seller 1's position is advantageous compared to seller 2 and 3. Its productiveness is higher since its *performance is similar but at a lower cost*. The reasons for this might be superior competencies and/or superior processes stemming from past experiences (Henderson, 1968). Relative competencies, such as availability of natural resources, qualified employees, or technical competencies in production or communication systems can create significant cost advantages. These result in superior *productivity*. Significant cost advantages can also be achieved by means of process differences,⁴⁸ especially if the process differentiation is realized through increased speed of operation. Speed advantages are significant productivity factors and have important impacts on costs. They are therefore an important source of cost advantages (Clark & Fujimoto, 1991; Stalk & Hout, 1990).

⁴⁷ Later, we relate S's cost advantage over SC to the profit difference between S and SC, in order to eliminate the impact of prices on the definition of competitive advantage (see part 4). However, this does not affect the cost difference criteria as a determinant of competitive advantage.

⁴⁸ Hammer and Champy (2003) give illustrative examples.

Fig. 1.20 Cost advantage

A cost advantage has more than one positive effect for the seller:

- The seller can, at similar prices, gain greater profits per unit sold, and it can use this to improve its competitive position, e.g., by investing in the firm's skills and resources, through research and development, or in the conquest of new markets.
- The seller can undercut its competitors and expand its sales and market share, which creates opportunities for further improvements in relative costs.
- The seller can, more efficiently than its competitors, protect itself against new market entrants, because its ability to defend is stronger. Price cuts can be used as a weapon in such situations, a weapon that firms with a cost advantage have a greater freedom to use.

1.4.3.2 Net Benefit Advantage

When analyzing benefit differences, we need to focus on the meaning of differences in competencies, processes, and programs for the *buyer*. A seller's competitive strength is its ability to offer greater benefits or lower costs, i.e., greater *net* benefits, to the buyer compared to competitors.

In order to analyze this ability, we can make use of the description of the market transaction given above. Let us once again consider condition 2. With freedom of choice, no buyer will choose a particular seller if he perceives that other problem solutions offer a more favorable exchange ratio. The buyer will choose seller S if S offers a higher net benefit (the difference between benefits and costs) than a competitor SC. Therefore, S will have to have a positive difference between the net benefits of S and SC on the critical dimensions. Figure 1.21 summarizes the elements of such a net benefit difference.

Therefore, we define the net benefit advantage as

Definition 9: Net Benefit Difference

$$\text{net benefit difference}^{S/SC} = (\text{benefit}^S - \text{costs}^S) - (\text{benefit}^{SC} - \text{costs}^{SC})$$

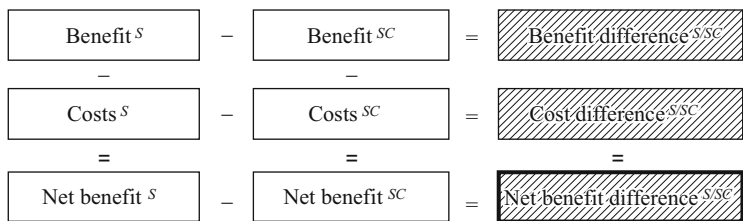


Fig. 1.21 Elements of net benefit difference

From this perspective, it is not absolute values that affect purchase decisions—it is the *relations* between values that count. A buyer compares the differences. We shall use this for assessing buyer advantage: We do not have to determine all four components of the comparison separately as we can focus on the *differences* in the evaluation of sellers.⁴⁹ The comparison between the two offers is simplified in this way. The following elements are needed to compare S and SC in terms of the benefits and costs for the entire life cycle of their products or services.

1. *Purchase price*: The amount of money the buyer has to pay to the seller for the problem solution. This includes all additional costs, including services such as transportation, insurance, and consultancy.
2. *Costs of the buying process*: This includes any advanced payment and subjective effort on part of the buyer to prepare the investment decision and implement the problem solution. These include the costs for external consulting services, land and property acquisition, the construction of floor foundations for a machine to sit on, electrical sockets, staff training, etc.
3. *Costs of the long-term availability of the problem solution*: These include costs to install, use, and maintain the product throughout its life cycle, including all spares, servicing, and final disposal.

The sum of costs 1–3 are often referred to as *life cycle costs*.

4. *Benefit differences*: The difference between the perceived benefit of the problem solution compared to SC’s offer. Again the entire life cycle is the focus.

Figure 1.22 shows the comparison. Cost differences and benefit differences between S and SC are shown. The price of seller S’s offer is slightly higher, but S offers the buyer significantly lower costs of use, maintenance, and disposal. Overall, the buyer is better off buying from S than SC, the difference being the “perceived cost difference S/SC.” Furthermore, the buyer perceives the overall benefits of S’s problem solution greater than SC’s. By changing to S, he can improve his position in terms of the “perceived benefit difference.” The sum of

⁴⁹ In order to simplify and clarify, we assume that we can precisely determine the exchange ratio offered by SC that is preferred by the buyer. We assume further that this offer gives an exchange ratio of 1 for the buyer i.e., costs and benefit are equal.

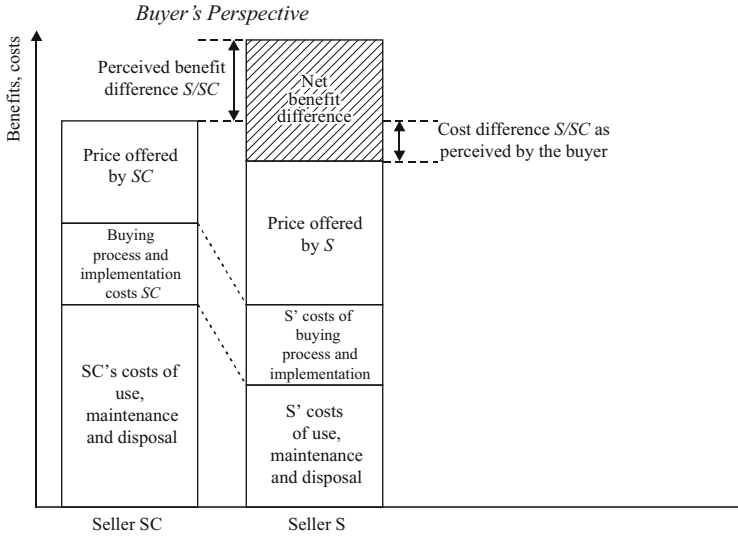


Fig. 1.22 An example of net benefit differences between two alternatives

the two difference values (costs and benefit), when switching from SC to S, forms the overall net benefit difference between S and SC.

In an earlier section we introduced the elements of an exchange ratio based on the perceptions and evaluations of the exchange participants. This subjective perspective is valid also for the definition of benefit and cost differences.

What does a seller have to do in order to create a net benefit difference for a buyer? The seller has to create an offer that promises lower costs or higher benefits than competitors. It has to offer a product or service as good as the others but cheaper. Or, it has to offer at the same price as others something special, something that is unique and positively valued. Or, it has to do with a combination of these. Of course, compensating effects are also possible, as when an unfavorable price is more than offset by a benefit advantage. Figure 1.23 summarizes possible situations for success and failure.

The ability to create an advantage for the buyer is dependent on a seller's competitive strength. This strength is reflected in its ability to offer better exchange ratios.

1.4.3.3 The Effects of Competitive Advantage

At equal prices, a seller with a cost advantage will gain greater profits than its competitors. At lower prices, the seller will increase its market share and strengthen its cost advantage, creating the basis for higher profits in later periods. A seller that provides its buyers with a greater net benefit is valued more highly by them; it strengthens its reputation, and buyers satisfied with its performance will become repeat customers. These are the conditions for profits being greater than competitors' and for increased market share.

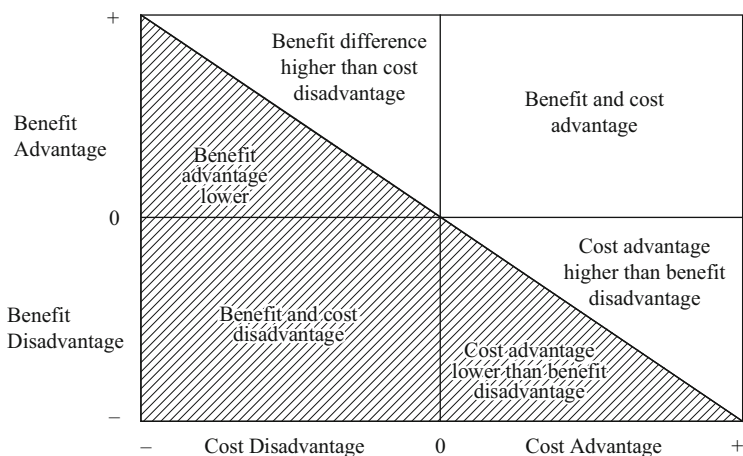


Fig. 1.23 Benefit and cost advantages and disadvantages

Profits that are the outcome of an advantageous position can be used by the seller as additional investments that competitors can only finance from other sources. The effects are as follows: a competitive advantage facilitates investment and thereby it helps to protect existing advantages and/or create new ones. Hence, it is vital for every competitor to create, find, or extend its competitively advantageous position. It is the very nature of competition that success or failure depends on the firm’s competitive position and *every action has to be analyzed in terms of its effects on this position—how it improves or degrades it and how it utilizes it.*

1.4.4 The Economics of Competitive Advantage

1.4.4.1 Efficiency and Effectiveness

Sellers differentiate themselves from others through their ability and willingness to offer benefits to their buyers. If a seller can do so on a sustainable basis, its competitive position is strong. *Sustainability* depends on whether a seller’s abilities can be easily *imitated* and whether it can offer the benefits to buyers at conditions that are favorable or at least acceptable. Let us reconsider Fig. 1.22 and clarify the structure with an example.

Example

A producer of travel coaches, SC, offers its products with a certain level and pattern of life cycle costs and associated benefits that the buyer perceives as equal in value to the costs. In simple terms, the coach is “worth it’s cost.” Another seller, S, is able to offer more comfortable seats, a higher maximum

(continued)

speed, and better springing, which makes the buyer perceive a benefit difference. Also, use costs are lower because of a better fuel consumption or longer maintenance intervals. The net benefit difference between sellers S and SC is the sum of the buyer's benefit advantage and the advantage stemming from the lower costs of use.

This does not show S's total competitive strength compared to SC. That S offers more benefits to the buyer is not necessarily a competitive strength. For instance, maybe buyers are only concerned about price so that a buyer's advantage depends on offering a low price that does not cover a seller's costs. S offers these benefits in a desperate struggle to remain in the market. If S's price is below its average costs, it does not affect the net benefit difference. However, we have to assume that, in this situation, the seller does not have a particular competitive strength—otherwise, it could have achieved a higher price. In this case, the relative cost disadvantage has to be taken into account as a counterpart to the positive net benefit difference.

It is therefore necessary to include *both* the cost advantage/disadvantage and the net benefit difference to describe a seller's competitive strength. To do so, we will reconsider Fig. 1.18. The superior seller has certain abilities and resources (*competencies*) that he transforms into *processes* that create certain performance outcomes (*program*). The criteria for assessing the seller's competitive strength are (1) the extent of its superiority over its competitor as perceived by the buyer, which is reflected in the net benefit difference and (2) the extent to which it can achieve profits in this situation, which is reflected in its *cost advantage*. *The Net benefit difference and cost advantage together form the competitive advantage.*

In order to compare the competitive strength of two sellers S and SC, we have to consider both the net benefit difference and cost advantage.⁵⁰ We therefore extend Fig. 1.22 in Fig. 1.24.⁵¹

The left hand side of the Figure illustrates the buyer's perspective and corresponds to Fig. 1.22. The right hand side depicts the seller's perspective. The two price offers of S and SC are compared, each being divided into average costs and profits. Seller S has the same costs as SC, but a higher profit because of its higher price. S's higher profit margin than SC's is another indicator of competitive strength in addition to the net benefit difference. This is because even if SC offers its product at a price equal to its average costs and S reduces its price to its average costs, S would still make a profit, other things being equal. The full competitive

⁵⁰ We are not concerned with the quantifiability of every feature in our definition, but with the analysis of competitive strength.

⁵¹ See a similar approach in Forbis and Mehta (1981). Here, the authors' definition of competitive advantage is problematic because they concentrate on the difference between the benefit orientated upper price limit of the seller and its average costs. This cannot be used to measure competitive advantage, because you cannot compare costs and profits between a seller and its competitor in this way. Therefore, we focus on profit differences between the relevant sellers.

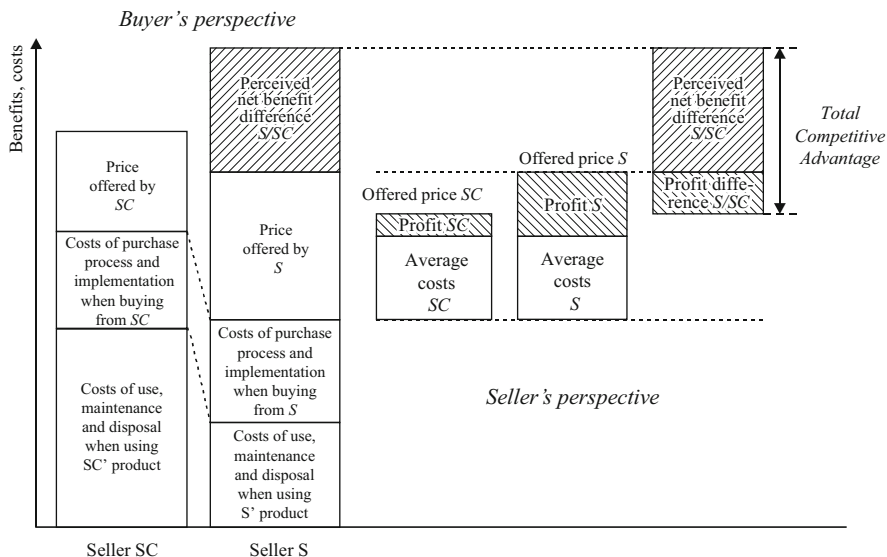


Fig. 1.24 An example of competitive advantage

strength of seller S can be seen: S does not only have lower average costs than SC, it can offer the buyer lower costs of use and higher benefits as well.

In the example, S's competitive strength is partly reflected by its higher price. However, the strength would remain even at a lower price. The reason is simple: A price decrease increases the net benefit difference, because it means that S's offer is more attractive to the buyer and hence has greater competitive strength. It is not relevant whether a higher price gives way to a low price or a low price to a high net benefit difference, the competitive advantage is equal in either case.

The overall advantage that S can use when competing with SC is its competitive advantage $^{S/SC}$ and we define it as follows⁵²:

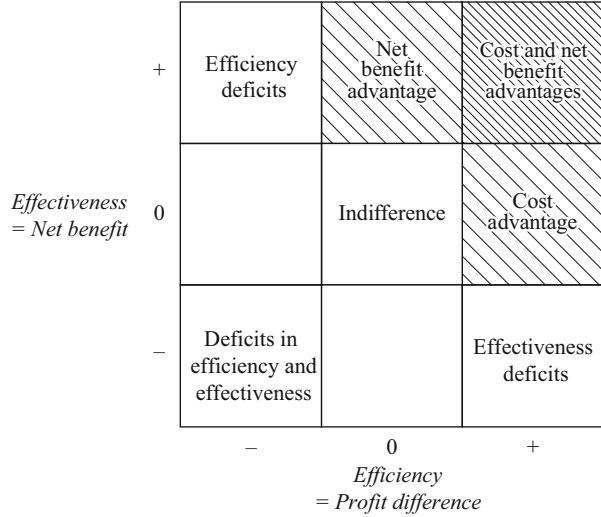
Definition 10: Competitive Advantage

A seller S's competitive advantage over SC is the buyer's net benefit difference $^{S/SC}$ in favor of S plus S's positive profit difference $^{S/SC}$.

The competitive advantage expresses a seller's relative position regarding cost and net benefit differences. We therefore have to define competitive advantage as a

⁵² The algebraic notation should not give the impression that we only treat quantifiable elements when analyzing costs and benefits. On the contrary, the contents of an exchange ratio, as outlined in above, contain all value components, both positive and negative, as perceived by the buyer. The quantification in expression 1) therefore is a task not yet solved. We use the expression in order to clarify the structure of the concept, not as a mathematical formula.

Fig. 1.25 Efficiency and effectiveness as dimensions of competitive advantage



two-dimensional entity composed of efficiency, which relates to cost advantages and effectiveness and which relates to net benefit differences perceived by the buyer.

A seller’s possible competitive positions are presented in Fig. 1.25 in terms of *efficiency* and *effectiveness*. The columns show the relative cost positions, measured in terms of the profit difference between S and SC. The vertical axis shows the relative net benefit position. We distinguish between negative, zero, and positive values on each dimension resulting in nine relative competitiveness situations.

Definition 11: Effectiveness and Efficiency

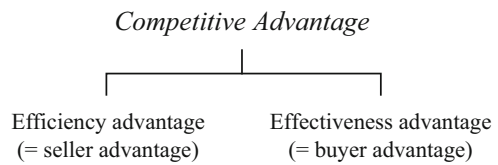
Effectiveness: An external performance measure that indicates the extent to which a firm satisfies its buyers’ expectations and demands.

Efficiency: An internal performance measure that indicates the relation between inputs and outputs.

Competitive advantage can be seen as the outcome of efficiency and effectiveness advantages. Indifference means that the seller and competitor are equal in both dimensions. Weaker situations reflect weakness in effectiveness, efficiency, or both. A seller has superior efficiency and effectiveness when it achieves a superior cost position and a net benefit advantage for buyers.

The two-dimensional classification of competitive advantage indicates that a seller has to focus on two distinctive spheres of operation when searching for competitive advantage: the internal operations of the firm and the buyer’s requirements. The advantages a seller derives as a result of internal operations are

Fig. 1.26 Components of competitive advantage



termed *seller advantages* and those arising for buyers are termed *buyer advantages*⁵³ (see Fig. 1.26).

Seller advantage is solely the outcome of differences in competencies and processes among sellers—it would exist even if buyers perceive all offers to be homogeneous. In competition, a seller advantage is a crucial advantage, whether it is realized in terms of higher profits per unit or lower prices. A lower price is particularly effective, because buyers will respond to a lower price faster and more precisely than a performance difference.⁵⁴

Buyer advantage is the superior benefit S offers compared to SC. It is a *relational* measure. The difference can only be shown between two sellers. In a purchase situation, as many different buyer advantages exist as there are possible pairwise comparisons between relevant sellers.⁵⁵

1.4.4.2 Competitive Advantage as a Guideline for Firms

Gaining a profit greater than a competitor depends on the existence of competitive advantage. Competitive advantage is the sum of buyer advantage and seller advantage. Buyer advantage is the result of differentiation within the seller's program, which results from differences in competencies and processes. Seller advantage also results from differences in competencies and processes. Competitive survival

⁵³ The term “buyer advantage” was introduced by Große-Oetringhaus (1990): “Understanding marketing strategically means satisfying a buyer’s needs better than competitors. This relative degree of satisfaction we shall call buyer advantage.” Forbis and Mehta (1981) mean the same when using the term “economic value to the customer.”

Customer advantage has to be distinguished clearly from the term consumer surplus used in microeconomic theory since Alfred Marshall [see for instance Stackelberg (1951)]. Consumer surplus describes the difference between the market price and the highest price at which a customer would buy, whereas customer advantage is about the difference in price of an individual competitor. The term consumer surplus is derived from the conditions of atomistic competition, whereas the concept of customer advantage treats a situation of oligopolistic competition with heterogeneous performances and limited market knowledge.

⁵⁴ The idea in Fig. 1.20 is the same as in Fig. 1.17. Those sellers with lower average costs realize higher profits per unit sold. Microeconomic theory calls this difference between the market price and the lowest price at which a seller would sell “producer surplus.” However, this is not related to the individual competitor’s situation, but to the market price in atomistic competition.

⁵⁵ This is why in an actual business situation, it is essential to choose the right seller for comparison. However, it is not the model’s application that we are concerned with. Here, we are defining the seller’s competitive actions in terms of buyer advantage.

means being different from others: Be different or die! (Alderson, 1957).⁵⁶ Hence, competitive advantage becomes the decisive guideline for the market oriented firm. In the end, it is not financial targets such as profits and turnover that guide executives' activities, but the continuing search for competitive positions that enable the firm's *survival*.

Different terms can be found in the literature to describe essentially the same concept as competitive advantage. Wroe Alderson introduced the concept into marketing theory using the terms "differential advantage" and later "competitive advantage" (ibidem), the term that we use. However, the words used are a secondary consideration. It is their meaning that matters. One has to consider precisely what an author means when referring to "competitive advantage" or using another term, because different interpretations can hide behind the use of the same terminology (Ansoff, 1965; Nieschlag, Dichtl, & Hörschgen, 2002; Ricardo, 1817).⁵⁷

Let us consider some terms which are not the same as competitive advantage. A product advantage is not a competitive advantage, because it is not related to the buyer's problem solving needs. A seller's strength is not a competitive advantage, because it is a general feature of its competencies that may not help to solve a buyer's problem. Process advantage is not a competitive advantage if it does not result in superior performance in terms of costs and/or buyer's net benefit. It is necessary to take a holistic view in order to assess competitive advantage. The distinction between efficiency and effectiveness forces the further distinction between buyer and seller advantage. These two together constitute competitive advantage.⁵⁸

Definition 12: Competitive Advantage

Competitive advantage: A seller's sustainable ability to be more effective than its competitors in terms of creating more benefits (i.e., buyers' advantage) and/or to be more efficient than its competitors in terms of lower costs or faster operations (i.e., sellers' advantage).

⁵⁶ "Every business firm occupies a position which is in some respects unique. Its location, the product it sells, its operating methods, or the customers it serves tend to set it off in some degree from every other firm. Each firm competes by making the most of its individuality and its special character. It is constantly seeking to establish some competitive advantage. Absolute advantage in the sense of an advanced method of operation is not enough, if all competitors live up to the same high standards. What is important in competition is differential advantage, which can give a firm an edge over what others in the field are offering."

⁵⁷ The business literature contains various terms for competitive advantage. Alderson (1957) introduced it into marketing theory, referring back to J. M. Clark's theory of monopolistic competition. Rogers (1962) used the term "relative advantage" as a determinant of the success of product innovations. Ansoff uses the term "distinctive competence". In consumer advertising, the term "Unique Selling Proposition" is well known. Porter (2004) writes about "competitive advantage", and so does Simon (1988). Aaker (2001), calls it "Sustainable Competitive Advantage (SCA)".

⁵⁸ Backhaus and Voeth (2014) use the term "comparative competitive advantage", linking it to Ricardo's term "comparative cost advantage". The authors' definition of "comparative competitive advantage" also includes perspectives of buyer and seller advantage (Backhaus & Voeth, 2014).

A seller with competitive advantage can make life hard for its competitors in two different ways. First, it can shield its buyers from the competitors by either satisfying them to the extent that they do not *want* to change the seller (or at least because it would require too much effort) or by creating a situation in which they *cannot* switch sellers, because they are dependent on it. The latter way focuses on decreasing the buyer’s mobility by erecting *mobility barriers*. Such barriers are created by a sustainable net benefit difference or by switching costs.

The second way is to deter or de-motivate potential or actual competitors. Existing competitors are de-motivated by the difficulties of imitating the superior performance of the focal seller. These difficulties could exist, for example, because the competitors cannot easily copy the superior seller’s competencies. Other reasons are that they cannot reproduce the seller’s processes, because they require special know-how, or the product cannot be imitated, because certain raw materials are not available. We use the term *imitation barriers* to refer to reasons for competitors not trying to take over the superior seller’s buyers.

Potential competition is limited by the sellers’ advantages due to experience, structural cost advantages, or from legal protection. All the forces that hinder potential competitors targeting a superior seller’s buyers will be called *market entry barriers*. Credible deterrence maneuvers such as threats of retaliation are part of these.

Competitive advantage is created by the mobility barriers, market entry barriers, and imitation barriers a seller may be able to set up for potential competitors. Figure 1.27 summarizes these effects.

Finally, let us summarize the necessary conditions for a competitive advantage.

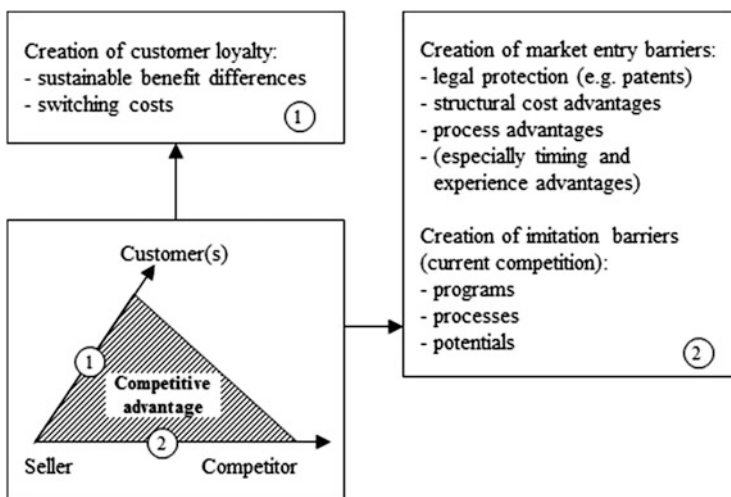


Fig. 1.27 Possible ways to protect a competitive position

1. Particular *abilities and resources* exist that result in certain competencies and processes and lead to a performance output or program. The abilities and resources are better than the competitors' and lead to superior efficiency and effectiveness. Included here are the firm's employees and their abilities, especially the ability to learn. It also includes the availability of physical or financial assets, know-how, flexibility, market access (e.g., being known and well known, having efficient and effective distribution channels), buyer understanding, and finally the ability to create internal synergies that lower costs. The seller can either offer comparable performance cheaper than its competitors, or it can offer greater performance at equal costs.
2. The ability to "do something better" refers to something of importance to the buyer—it is related to the solution of buyers problems. Even the most efficient service system cannot create a competitive advantage if the buyer has its own maintenance and repair team. The features important for the buyer have to remain important for a period of time, because there would be no competitive advantage without a problem that needs to be solved.
3. The ability to "do something better" is *perceived* by the buyer, whether it be a price advantage or greater benefits. If the potential benefits are hard to communicate, this will affect the perceived benefit. They have to be *believed* to be acted on.
4. The ability to "do something better" exists in relation to all *relevant* competitors. Relevant are those competitors the buyer thinks it is possible to buy from. A single competitor catching up would destroy the competitive advantage.
5. The ability to "do something better" or with lower costs is relatively *sustainable*, hence, making the competitive advantage *worth protecting*. This implies that competitors must be unable to imitate the advantage's sources in terms of the underlying competencies, processes, and program.

In the end, the ability to *protect* a competitive advantage is crucial. A seller has to be *more* efficient and/or effective than its competitors. Competitive rivalry and efforts to imitate are at the very heart of the competitive process and a competitive advantage can be sustained only for as long as imitations can be prevented.⁵⁹ Hence, the bases of competitive advantage, the differences in competencies, processes, and program have to be sustained or renewed. The "principle of sustainable differentiation" is valid everywhere. However, firms cannot completely escape the threats of imitation or innovation by rivals, which will eventually eat away at any competitive advantage.

The difficulty and fragility of competitive advantage are highlighted in a study of 6,772 firms in 40 industries over 25 years in the USA (Wiggins & Reufli, 2002). This reveals that some firms do perform in a truly superior way for a time but only a very small minority does so and it rarely persists for very long.

⁵⁹ We can only discuss this problem briefly here. For additional discussion, see Reed and De Filippi (1990).

1.4.5 Conclusions

The definition of competitive advantage indicates what counts in competition. A seller has to focus on being more effective and/or efficient than its competitors. A firm's competitive advantage is the sum of its seller and buyer advantages and reflects what the seller has achieved and his competitors have not. Seller and buyer advantages are the profits created by the market transactions.

In market transactions, the seller acts in a way that enables it to gain profits. Two methods of doing this are available or a combination of them. A seller can limit the buyer's advantage and hence increase the seller's advantage. This will result in greater profits per market transaction, but a smaller number of such transactions achieved. We call this *market skimming behavior*. The seller can also limit the seller's advantage, and hence increase the buyer's advantage, which results in less profit per transaction but a greater number of transactions. This we call *market penetration behavior*. The choice between skimming and penetration has a significant impact on the seller's market share and profit. The choice depends on the seller's assessment of the price elasticity of demand and on its strategic intentions. These questions have to be discussed elsewhere.

This completes our discussion in this chapter. We return to conditions 1 and 2 for the negotiation of a market transaction, which we treated in part 2. No market participant will accept an exchange agreement that does not improve their position, and they will only accept it if they cannot improve their position further with another exchange partner. As we can see, conditions 1 and 2 indicate that both the seller and the buyer have to expect a profit that is greater than in other transactions, otherwise the market transaction will not occur. Therefore, a seller's competitive advantage marks a situation in which it can more easily bring about market transactions than its competitors. Its profit is a signal for others to try to do the same. The opportunity detected by an entrepreneur is also a profit opportunity for others—by means of imitation. Once a seller has detected an opportunity, it will, subject to its abilities, try to protect these opportunities by erecting barriers against competitors. The market process is on the one hand a never-ending struggle to create and protect advantages and, on the other, an arena for followers that want to copy the advantages created by others, thus finally destroying profits.

Exercises

1. What options exist for the purchase of goods and for sales?
2. What is an exchange?
3. Why do exchanges exist?
4. What value can result from an exchange?
5. What is a problem and a problem solution?
6. Explain the causes of uncertainties which can be connected with an exchange.
7. What is a risk and what kind of possibilities are there for managing a risk?
8. What is the difference between a simple exchange and an extended exchange?

9. What are the characteristics of a buyer's market and a seller's market?
10. What is a market transaction?
11. What are the elements of a market transaction?
12. Explain the benefits and the costs resulting from a transaction.
13. What is the difference between a buyer's perspective and a seller's perspective?
14. Explain the conditions for the emergence of a transaction.
15. What is a market process?
16. Describe the terms "innovation" and "imitation."
17. Explain the elements of a competitive advantage.
18. Describe the causes of competitive advantages?
19. Describe the terms "efficiency" and "effectiveness."
20. Explain the connections between effectiveness with seller advantage and efficiency with buyer advantage.

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Wulff Plinke

This chapter focuses on the evolution of the marketing concept and the components of marketing management in firms. The first part is about the way our understanding of marketing has developed over time, including market and customer orientation. The second part discusses in more depth the management of marketing activities in firms and the nature and role of market and customer orientation.

2.1 Meanings, Myths, and Misunderstandings: Some Preliminary Comments

In the previous chapter, we became familiar with the fundamental concepts and basic processes of the market: problem solving as a central driving force; exchange in its dyadic, expanded, and complex forms; market transactions; market process; and competitive advantage. Using these concepts, we are able to paint a picture of market processes and the conditions under which market participants can achieve their objectives. In the second and third chapter, we will focus on the behavior of suppliers in market.

First, some preliminary comments regarding the term “marketing.” All of us—whether we have the relevant experience or not—have our own more or less well-defined preconceptions of what marketing is. Preconceptions are not inherently bad; quite the contrary, they make our lives simpler. Without preconceptions, all thinking and acting would take considerably longer. However, existing preconceptions of marketing can hinder people’s understanding of the basic principles of industrial marketing described in this book.

Here are some popular meanings, myths, and misunderstandings about marketing:

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1. *Marketing is unnecessary*: Many engineers and scientists and even experts in IT or financial and accounting departments in a firm have this view of marketing. It leads to a fundamental skepticism, even outright rejection that can lead to interdepartmental conflicts. It is not easy to get to the roots of this skepticism, but some of the causes include the following. In firms operating in industrial markets, we often come across the view that market success is dictated almost entirely by engineers and technical factors. Engineers frequently believe that market success depends primarily on having excellent contacts with the engineers in the client firm. They believe in their process and product technology and in the product itself. "A good product sells itself!" They do not consider other factors that may mean the best product doesn't even get a look-in. Consider the case of IBM, which took pride in never having offered the best mainframes from a technical point of view, yet occupied the number one spot for years due to its superior sales force and service. Then there is the story of how the Sony Beta video system succumbed to competition, from the arguably technologically inferior VHS system. It is not hard to find other examples. The conclusion is that a superior technology or product does not sell itself. Technology is only one factor affecting market success. Anyone who considers marketing unnecessary is generally representing some other functional interests in the firm. Preconceptions about marketing, whether positive or negative, frequently have something to do with the struggle for influence and budgets in a firm.
2. *Marketing is the manipulation of buyers*: Another view is that marketing involves manipulating people to buy things they otherwise would not. This view is typified in books such as Vance Packard's "Hidden Persuaders" and Wilson Brian Key's "Subliminal Seduction" (Packard, 1957; Key, 1973). But marketing is not a word for more or less sophisticated and questionable methods of influencing, persuading, or manipulating customers. Such methods are a part of marketing activities but they should not be equated with it.
3. *Marketing is pricing policy*: Marketing skeptics, especially those from finance and accounting, frequently regard buyers in industrial markets (in contrast to consumer markets) as being highly rational. They argue that they are professional purchasing managers, and there is thus no scope for marketing like activities. On the other hand, if the product does not stand out against rival products in other ways, the price alone ultimately decides who wins the game. We saw in Sect. 1.4 that this is only one of several possible situations. The conclusion is simple: when the product does not stand out and price is the deciding factor, more thought should be given to marketing and action taken in this direction.
4. *Marketing is selling*: Marketing is not just another word for selling. Sales are a traditional line function in the firm, which arises due to the division of work and specialization. While selling has a lot to do with marketing, it should not be equated with it. Nor should marketing be equated with market research, with advertising or with public relations. It is much broader than these activities.
5. *Marketing is for specialists*: Here marketing is equated with the marketing department of a firm and is viewed as the job of specialists who are responsible

for various marketing activities, including market research and advertising. Just as the R&D specialist feels responsible for “their” function (and would not tolerate outside interference), the same applies to the marketing “function”—with the result that no one is viewed as responsible for marketing apart from the specialists supporting the sales manager or general management. We often come across departments or job descriptions in companies in the capital goods sector with the name marketing. The tasks they perform range from market monitoring, statistical analysis, and keeping an eye on the competition through to drafting action plans and negotiating with advertising agencies and market research firms and the analysis and preparation of overall strategic concepts. All these activities are an important part of marketing. Our contention is that *marketing is not a position or a department in the firm nor is it a box in an organization chart*. For this reason, a firm with a marketing department does not necessarily practice marketing, while a firm that has no job with this title may practice marketing in a perfectly effective manner. Rational arguments regarding the organization of marketing are only possible once the basic concept of marketing has been clarified and the marketing process defined.

6. *Marketing is everything*: Marketing is sometimes used as a universal expression for diverse business processes, especially if someone wants to change something, i.e., “A bit more marketing is needed there . . .” Marketing is not a snappy circumlocution for internal measures designed to get an idea or an initiative over to the employees, nor is it a means of oiling stiff wheels or a sweetener to make an uncomfortable decision acceptable. We should not try to apply the term marketing to anything and everything in human interactions. *Marketing takes place in markets*.

The various activities and issues discussed in the foregoing may be associated with marketing but it is a far more strategic, comprehensive, and fundamental aspect of business than any one of these.

We therefore ask that you try to put aside everything you have knowingly or instinctively associated hitherto with the term marketing. Once you have worked your way through this chapter, you can revisit your initial ideas and compare them with our view of marketing.

2.2 The Marketing Concept

2.2.1 Evolution of the Marketing Concept

The marketing concept has been steadily increasing in importance. Marketing management as we understand it today originated in the 1950s and is thus more than 60 years old. Let us look at two viewpoints from the early days of modern marketing, which marked the transition from a selling to a marketing orientation in business.

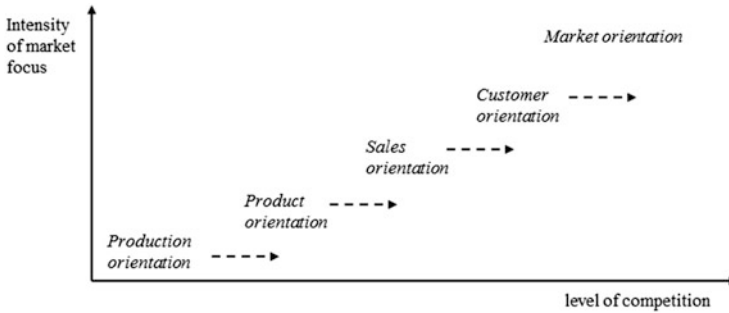


Fig. 2.1 Orientations of the firm to the market

Peter Drucker (1954) formulated the following vision of the marketing concept:

There is only one valid definition of business purpose: to create a satisfied customer. It is the customer who determines what the business is. Because it is its purpose to create a customer, any business enterprise has two—and only these two—basic functions: marketing and innovation. [...] Actually marketing is so basic that it is not just enough to have a strong sales force and to entrust marketing into it. Marketing is not only much broader than selling, it is not a specialized activity at all. It is the whole business seen from the point of view of its final result, that is, from the customer's point of view (Drucker, 1954, pp. 38–40).

Theodore Levitt (1960) of Harvard University expressed it thus:

Selling focuses on the needs of the seller; marketing on the needs of the buyer. Selling is preoccupied with the seller's need to convert his product into cash; marketing with the idea of satisfying the needs of the customer by means of the product and the whole cluster of things associated with creating, delivering and finally consuming (using) it (Levitt, 1960, p. 50).

Modern marketing aims to bring about a specific orientation of the firm to the market. These two “gurus” of modern marketing described the marketing concept some time ago, but it is still not the case that this concept has become accepted as a matter of course in every firm. No matter how reasonable it appears to be, this focus of firm behavior does not occur automatically. On the contrary, very different firm orientations can be observed in the market, which in some cases have nothing to do with marketing. The reason for this is to be found in the level of development of an economy or industry and the intensity of competition.

In simplified historical terms, the relationship between a firm and its market can be illustrated by the development of competition between the suppliers of consumer and capital goods in the Federal Republic of Germany following the Second World War (cf. Fig. 2.1). The pattern of development is similar to that experienced in many Western countries after WWII.

2.2.1.1 Production Orientation

Production orientation is a management orientation which assumes that the availability of production capacity creates a decisive competitive edge. It assumes that *production is the bottleneck*. This was the situation at the end of the WWII, when

virtually everything had been destroyed and reconstruction was just getting underway. Anyone who could produce found purchasers, as the market was drastically under-supplied. A production orientation is the management orientation found in the complete absence of competition. Symptoms of production orientation include, disregarding the customer's wishes, the arrogance of the monopolist, pronounced hierarchies, a tendency towards bureaucracy, and an inclination amongst staff to cultivate personal interests if there is a lack of control. Even now we come across examples of production orientation like islands in the sea of competition, for example, in local government bodies, or the ferry service of an island which receives a lot of visitors in summer but can only be reached by one shipping line. Centrally controlled economies are production oriented in principle. Production orientation will cause a firm to fail when competition emerges and the firm cannot radically reorganize itself very quickly.

2.2.1.2 Product Orientation

If competition develops in a production-oriented economy, as in many economies after WWII, then a product orientation will tend to emerge. The reason for this lies in competition geared to product improvements and imitations that is intended to generate competitive advantage. As the supply situation is still not adequate, good, affordable products are much in demand. Customers are quite prepared to seek out and tolerate waiting times to obtain the product. Product orientation is a management orientation which assumes that the availability of good products creates a decisive edge in competition. *The obstacle to corporate success is therefore product development.* The principal symptom of product orientation, which can still be found here and there today, is a pronounced technical culture in the firm, where managers in R&D strive to extend scientific boundaries and lay claim to high status in the firm. Turns of phrase such as “the *gentlemen* in development, the *men* in production, and the *people* in sales” are indicative of the kinds of attitudes existing. A product orientation focuses on the superiority of the product, not the cost, and the quality of the product, not the volume. Long delivery times are seen as an indication of superiority. But a product orientation can sink a firm, if competitors with an aggressive pricing policy imitate or launch similar products on the market, and the supplier is not able to keep the imitators at bay by means of continuous product improvement.

2.2.1.3 Sales Orientation

When supply improves such that several products are available that can satisfy customers, competition intensifies and a stronger orientation towards selling will develop. The reason for this is that buyers will tend to prefer suppliers who make purchasing easier, cheaper, and more agreeable for them compared to others offering similar products. A sales orientation is one in which management assumes that the availability of a good sales team and low prices create a decisive edge in competition. *Sales is thus the area restricting the success of suppliers.* The reason for this situation emerging in Germany was that production plants had been built, and development teams had produced several new products which were available

on the market. However, there was a lack of sufficiently experienced and motivated sales teams, so that the best and most successful suppliers were those mastering production, product development, and sales best. The attributes of a sales orientation are stocks of finished products, the aggressive use of instruments of “hard selling”—the deployment of sales people and trade fairs, and the greater use of advertising, pricing, and credit policies. A firm can founder when pursuing a sales orientation because the means used are expensive and their effect quickly evaporates in a competitive world.

Production, product, and sales orientations constitute orientations to the *functions* of a supplier (what we call a *supplier orientation*). These are quite different from the following stages of development of firm behavior.

2.2.1.4 Customer Orientation

A customer orientation emerged in America earlier than elsewhere. The reason for this lies in the lead time which the US markets had in attaining maturity, i.e., fully mastering the supply of goods to purchasers. Symptoms of “affluence” began to appear (Galbraith, 1958). Success in competition could no longer be achieved through production, product, and sales orientations, meaning that a new approach was called for. Compared with its predecessors, customer orientation represents a complete switch from a focus on the solutions of the supplier’s problems in terms of functional bottlenecks to the one that focuses on the customer. Customer orientation is a management orientation which assumes that a knowledge of the customer’s requirements and a coordinated marketing effort to manage and meet the customers’ expectations generate a decisive edge in competition. The obstacle to increasing success is *the knowledge of customer requirements* and the ability *to gear the offer to the requirements of the customer*. This orientation constitutes the shift to a modern understanding of marketing, as formulated by Drucker (1954), Keith (1960), Levitt (1960), Kotler (1967, 1972), and others.

Modern marketing emerged in other countries, such as Germany, later than it did in the USA, usually starting in consumer goods and then expanding into other areas, including industrial goods and services (Engelhardt & Günter, 2000; Backhaus & Voeth, 2010).

Even though the subject of marketing has developed in many ways in the intervening years, nothing has changed with regard to our basic understanding of the marketing concept (Brown, 1985; Meffert, 2000; Nieschlag, Dichtl, & Hörschgen, 2002). The core of the marketing concept is a radical shift from a production, product, and sales orientation to an approach to business planning that starts with the customer. *Kotler* provides a useful comparison between the selling concept and the marketing concept, as shown in Fig. 2.2.

2.2.1.5 Market Orientation

Customer orientation, as embodied in the marketing concept, represented a break away from a supplier orientation and a focus on function. New ways of succeeding were revealed to firms who took the wishes and expectations, perceptions and judgments of customers seriously, and geared their offers to them.

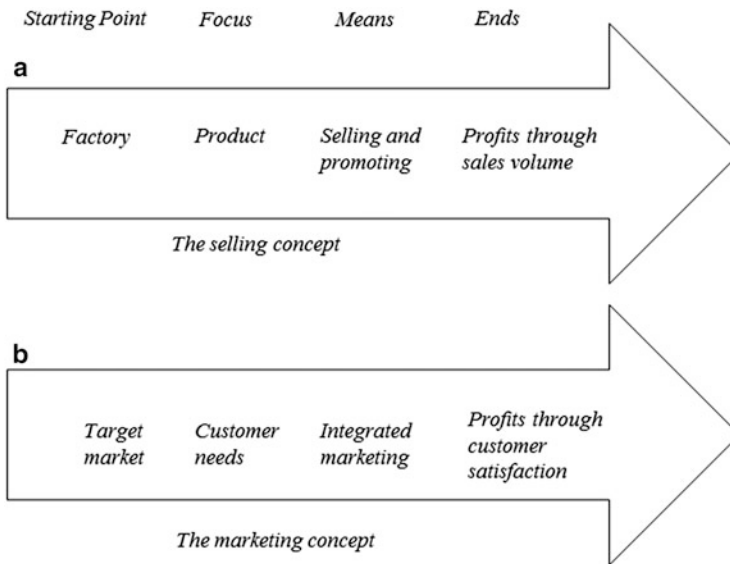


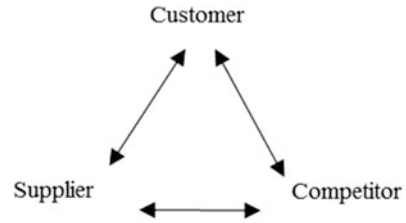
Fig. 2.2 Selling concept and marketing concept (*Source: Kotler, 1997*)

As competition further intensified, an additional dimension of market orientation was added to the way firms oriented themselves to the market, i.e., a *simultaneous* orientation to customers *and* competition. Whereas, it may have been sufficient to pursue a policy of customer orientation to gain a lead, it is now the *relative* position of the supplier compared with its competitors that is critical. In the first chapter, we described this position as a *customer advantage* from the point of view of the customer. Since customer advantage describes the net difference in benefit between two suppliers, competitor analysis becomes part of customer analysis: the supplier—competitor—customer orientation triangle is the paradigm, which we term market orientation (cf. Fig. 2.3). Competitor analysis through the eyes of the customer is a necessary prerequisite in determining customer advantage. One result of increased competitor and customer orientation is the spreading culture of *benchmarking*, which is the systematic comparison with the best in the sector and the best in a particular function (i.e., best practice).

A firm's market orientation is not the function of a particular department; on the contrary, a market orientation is a *general management task*, a specific feature of running a business unit. Market orientation is a matter for the managing director; it cannot be delegated. The marketing concept has to be developed into the market-oriented management of a business unit (Plinke, 1992). *Market-oriented management* is the current challenge facing companies wishing to gear themselves to the industrial market.

Interim conclusion: As competition increases, different supplier orientations result. The transition from one phase to another is fluid, so that various orientations can coexist, at least for a while. However, the temporal sequence, supply

Fig. 2.3 The “marketing triangle”



orientation → customer orientation → market orientation, is evident. The marketing triangle illustrates this. Whereas focusing on the supplier’s own functions dominated initially (supplier orientation), as competition became more intense and markets shifted from sellers’ to buyers’ markets, it was the turn of the second corner of the triangle—customer orientation. The marketing triangle is complete when the third corner is included: we then speak of market orientation. The marketing concept with its market orientation is the answer to predatory competition and forces management to gear all the processes of the supplying firm to generating customer advantage. Markets are thus developing to the point that customers ultimately dictate the offer. Or, in other words, suppliers who fall behind their competitors in the eyes of the customers will fail without any regret on the part of the customers. The fact that competition is evolving in this way is not based on the behavior of the suppliers alone—customers also contribute to this. Due to competition with regard to innovation, performance, and price, customers are learning that they can continuously demand more. This spiral has no foreseeable end.

We have not discussed *competitor orientation* as a separate type of firm orientation in this section. A symptom of this is unconditional adaptation to the way dominant competitors behave. Such a reactive mode of behavior is not consistent with the marketing concept, but competitor orientation is nevertheless observed in some markets. The principal orientations in competition are summarized in Table 2.1.

2.2.2 Customer Satisfaction, Customer Orientation, and Market Orientation as Core Elements of the Marketing Concept

2.2.2.1 Customer Satisfaction

The marketing concept is geared towards generating customer satisfaction. A firm that has to compete in a buyers’ market exposes its products and services, its sales policy, its communications, in short its entire appearance in the market, to the judgment of the customers. As judge, the customer determines success, growth, stagnation, or failure. Buyers can exercise the function of a judge because they are able to choose among different offers. The more the market offerings resemble one another, the more the customer can exert their power of demand, and the more advantageous the exchange relationships will be for them.

Table 2.1 Supplier orientations in competition

		Are buyers' wishes and expectations taken as the starting point for supplier behavior?	
		No	Yes
Is the way competitors behave taken as the starting point for supplier behavior?	No	Production orientation Product orientation Sales orientation	Customer orientation
	Yes	Competitor orientation	Market orientation

For a supplier, this situation means that it must make more effort to gain and retain customers and that it must be permanently prepared to risk losing old customers to competitors.

Competitive advantages create access to new customers and prevent the migration of old customers. By gearing itself to creating competitive advantages, the supplier must know the problems of its customers well (and possibly better than the competition) and must solve its customer's problem better than any other competitor considered by the customer. Achieving competitive advantages in this sense also presupposes that the supplier is prepared to *make the problems of the customer its own*. Ultimately, this leads to the serious intention to really *satisfy* the customer.

The American mail-order firm *L.L. Bean* formulated a mission statement which is aimed precisely at this point. At the entrance to the firm's head office in Freeport, Maine, is a large plaque, on which the wood-cut message shown in Fig. 2.4 is to be found. This is based on the business principle of the firm's founder, Leon Leonwood Bean (2006), which has been practiced since 1912: "Sell good merchandise at a reasonable profit, treat your customers like human beings, and they will always come back for more."

A promise of 100 % satisfaction certainly cannot (and should not!) be given by every firm and every sector, but the example shows what competition focuses on in extreme cases. No firm engaged in fierce competition can disregard the job of satisfying its customers for long. There is far too great a risk that other suppliers will offer them greater satisfaction and thus prevail. A customer satisfaction represents the core of the marketing concept. Customer satisfaction is the *North Star* by which we orientate ourselves when navigating through the competition. We have already encountered the principles in the first chapter: Robinson Crusoe can only solve his problems by exchange if he offers things to his neighbors on terms that are advantageous to them. Marketing is a management concept that is successful and profitable for the supplier precisely because it makes offers to buyers that are advantageous to them and ultimately lead to satisfaction. Satisfaction is a phase

100 % GUARANTEE

All of our products are guaranteed to give 100 % satisfaction in every way. Return anything purchased from us at any time if it proves otherwise. We will replace it, refund your purchase price or credit your credit card, as you wish. We do not want you to have anything from L.L. Bean that is not completely satisfactory.

L.L. Bean, Inc., Freeport, Maine.

Fig. 2.4 Performance guarantee from L.L. Bean

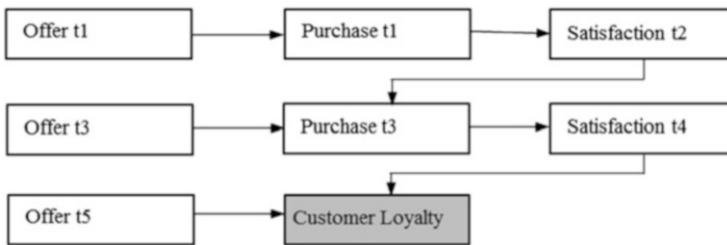


Fig. 2.5 Customer satisfaction and repeat purchase behavior

in the learning process of a buyer which, if passed successfully, increases the probability of a repeat purchase. Figure 2.5 highlights this.

However, the law of diminishing returns also applies to customer satisfaction. Increasing customer satisfaction costs money and not every performance increase is rewarded by customers in terms of their willingness to pay.

Customer satisfaction has several dimensions. In particular, we can differentiate between (a) satisfaction with fulfillment of the contract, i.e., the product (function, reliability, safety, aesthetics, economic efficiency, etc.) and the service (correct, worth the money, quick, helpful, etc.) and (b) satisfaction with the exchange process (respect, politeness, sincerity, friendliness, understanding, and helpfulness in the event of complaints, etc.). This is summarized in Fig. 2.6.

The basic idea of customer orientation may be simple, but operationalizing and measuring the relevant variables is difficult. To begin with we will use a simple definition: satisfaction is the degree of match between the *problem solution perceived by the customer* and the *problem solution expected by the customer*. It arises as a consequence of the customer's experience of the initial purchase and/or repeat purchase and tends to promote customer loyalty.

2.2.2.2 Market and Customer Orientation

Market and Customer Orientation in Practice: Examples

Customer satisfaction is part of customer behavior, and market and customer orientation are parts of *supplier behavior*—manifest in management style and

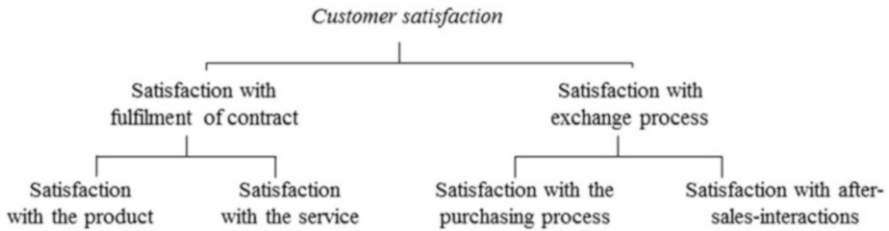


Fig. 2.6 Dimensions of customer satisfaction

employee behavior. The premise of the marketing concept is that a market orientation geared to customer satisfaction gains the supplier superiority in competition.

Before we finalize a definition of market and customer orientation, we list some of the main characteristics of a market and customer-oriented firm (Aaker, 1989; Shapiro, 1988).

Characteristics of Market and Customer-Oriented Companies

A market and customer-oriented firm

[...] knows and understands its customers.

- Knows which product and service features are important to the customer and knows what priority they take.
- Knows the customer's *problem*. Understands what drives the purchasing forward or stops it and also whether it is something which cannot be grasped objectively, such as feelings or associations.
- Recognizes unfulfilled needs or problems which arise *in good time* and knows which products or services are not yet (or no longer) the best solution to current and future customer requirements.
- Segments. Forms customer segments (target groups) according to the criterion of the most homogeneous customer advantage possible.
- Senses technological change and the change in its customers' values *at an early stage* and gears its innovation strategy to this.
- Looks for comprehensive solutions (*system solutions*). Recognizes that the customer is interested in integrated solutions and does not simply want to buy a product.
- Knows *who* makes the purchasing decision and who influences it.
- Knows the influence of the specific *purchasing situation* of the customer.

[...] listens to its customers.

- Reviews *customer satisfaction* at regular intervals with reference to qualitative instruments and if possible quantitative methods.
- Is open to customer comments. Listens. Suggestions or *complaints* by customers are taken seriously and influence strategy.

[...] knows how customers categorize the firm.

- Is clearly *positioned* in the respective segment.
- Knows through systematic market research how the customer assesses the firm's performance in comparison with its competitors.

[...] approaches its customers.

- Adopts an *attitude geared* to problem solving in relation to the customer.
- Induces its executives to seek regular contact with customers.
- Does not wait for the customer to come to it. Has indicators and information on which customers are approached *preferentially* (target customers).
- Is always easy to *reach* for its customers. The customer easily finds the contact responsible for them. The firm responds quickly.

[...] lives market orientation.

- Defines the content of customer orientation for *every* functional area and every department.
- Sets *standards* (performance targets), by which the level of customer orientation can be verified and is verified for each department.
- Installs forms and mechanisms of cooperation between departments and functional areas that are designed to ensure customer satisfaction.
- Recognizes problem areas in customer-oriented cooperation between departments or functional areas. The management is able to solve conflicts constructively.
- Ensures a swift, comprehensive, and continuous flow of information between sales (including market research and service) and the functions of R&D, production, and procurement.
- Realizes customer orientation in *all* functional areas of the firm.
- Has a *structural organization* which is (also) oriented to the objective of ensuring customer satisfaction.
- Has an *incentive structure* which is (also) geared to customer satisfaction.
- Makes customer orientation a part of the value system practiced (*corporate culture*). The top management executives set an example of customer orientation.

[...] really satisfies its customers.

- Gives (in the context of its corporate self-image) customers what they want to have or *what they believe they have a right to demand*, how they want it, and when they want it—and at a price which they feel is fair.
- Does not unconditionally give customers what they want, but (only) what they need and what *satisfies them in the long term*.

What is a Customer?

- A Customer* is the most important person ever in this office ... in person or by mail.
- A Customer* is not dependent on us ... we are dependent on them.
- A Customer* is not an interruption to our work ... is the purpose of it. We are not doing a favor by serving them ... they are doing us a favor by giving us the opportunity to do so.
- A Customer* is not someone to argue or match wits with. Nobody ever won an argument with a customer.
- A Customer* is a person who brings us their wants. It is our job to handle them profitably both to them and to ourselves.

Fig. 2.7 Customer orientation at L.L. Bean

- Knows that *quality is synonymous with customer satisfaction* and that therefore quality is not only a production task but represents a permanent challenge to all functional areas (Total Quality Management).

Finally, let us look once again at an example from *L.L. Bean*. Figure 2.7 summarizes how *L.L. Bean* wants its employees to view their customers and, accordingly, how they are to approach customers and practice customer orientation.

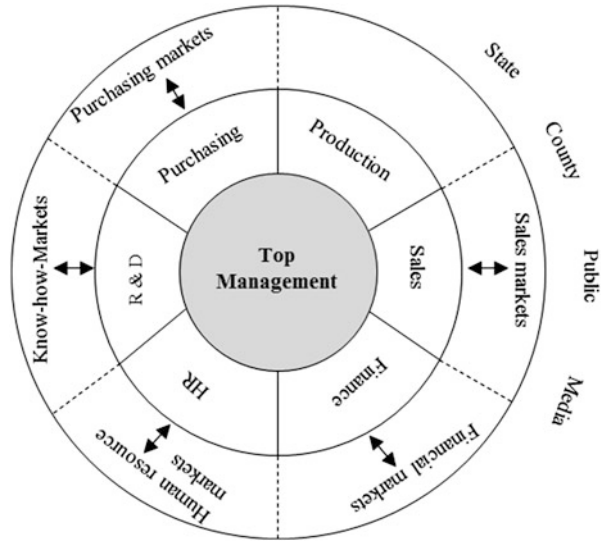
It is clear from these examples that what matters for firms is market and customer orientation. In the following section we will explain why market and customer orientation is so important to a firm, what its underlying rationale is, and how market and customer orientation can be distinguished clearly from one another.

Market and Customer Orientation as Survival Principles

According to the *Behavioral Theory of the Firm*, firms are organizations which consist of coalitions of interest groups (Cyert & March, 1963). Interest groups pursue their objectives partly cooperatively and partly in conflict, and change their objectives over time as changes take place in the coalition structure or in relations with the outside world. The firm maintains both internal and external coalitions. Figure 2.8 illustrates the integration of the firm into a network of external and internal coalitions.

External coalitions are used by the firm to procure vital resources. Survival is surely the main objective of a firm. For this reason the firm must acquire external coalition partners which facilitate the realization of this aim by providing vital

Fig. 2.8 External and internal coalitions of the firm



resources. Companies are more or less heavily dependent on their relations with customers and suppliers, industry associations, unions, the state, capital providers, etc. The firm thus has to offer various *inducements* to prompt external coalition partners to make appropriate *contributions*. Indeed, it has a vital interest in gaining influence over the external coalitions and developing appropriate relations with external counterparts.

In this sense the survival of a firm can be attributed to its ability to acquire the necessary resources on an ongoing basis through exchange processes with *all* coalition partners. This ability depends on its efficiency and effectiveness. *Effectiveness* in this context is an external performance standard reflecting how well a firm is meeting the demands and expectations of its external coalition partners. *Efficiency*, on the other hand, is an internal performance standard, which indicates the ratio of output to input, i.e., the economic efficiency of resource acquisition. Constant changes in the environment force the firm continuously to secure the short, medium, and long-term acquisition of resources anew.

The firm will gear itself as a matter of priority to those coalition partners who have a *critical* resource—critical in the sense that survival and competitiveness are affected the most by these resources. It may be a matter of, for example, access to technological know-how, qualified executive staff, capital resources, political goodwill, or distribution outlets. Above all it is how such resources impact on a firm’s ability to generate customer advantage that determines the value of the resource. Those external coalitions which control a critical resource have a greater influence on the overall activities of the firm than other coalitions.

The marketing concept, as originally presented, focused on shifts in customer demand from one supplier to another as the greatest threat to the firm in the long term. The transition from sellers’ markets to buyers’ markets was cited as a possible

explanation. But market and customer orientation also have to recognize the requirements of other important stakeholders in the firm, as well as external coalitions that control key resources. These also demand management attention if the firm is to develop and sustain its ability to compete successfully. Management has to deal with the demands of shareholders and investors, who expect interest to be paid at the prevailing market rate on the capital they have invested, and the employees, who are protected by labor law and bargaining rights. External relationships with key suppliers may be critical in creating competitive advantage as well as suppliers of complementary products and services, such as hardware and software suppliers. Or, in sectors with rapidly changing technology, technical know-how becomes a critical resource and requires management to secure access to new ideas and developments through various external linkages. In general, we may argue that companies develop for themselves customer advantage through *resource power* (Plinke, 1992).

Distinction Between Market and Customer Orientation

Customers make their purchasing decision on the basis of what they perceive to be their subjective advantage. A market orientation causes the supplier to study customer advantage and create the conditions for its realization. A market orientation is thus responding to the customer's interest in the form of a satisfactory solution to a problem and, to meet the requirements of one's own firm, to ensure this solution is provided more cheaply or better than the competition. Anyone who is responsible for the market orientation must implement the marketing concept and herein lies a significant challenge for research in marketing.

In order to test the claimed beneficial impact of market orientation, it is necessary to develop a measure of a firm's market orientation, which has been the subject of much research (e.g., Canning, 1988; Masiello, 1988; Shapiro, 1988; Narver & Slater, 1990; Kohli & Jaworski, 1990; Lingenfelder, 1990; Homburg, 2000; Jaworski & Kohli, 1996; Utzig, 1997). Different types of measures have been developed as the following definitions show:

- Kohli and Jaworski (1990, p. 53): the “organization wide generation of market intelligence pertaining to current and future customer needs, dissemination of intelligence across departments, and organization-wide responsiveness to it.”
- Narver and Slater (1990, p. 21): “Market orientation consists of three behavioral components—customer orientation, competitor orientation, and inter-functional coordination—and two decision criteria—long-term focus and profitability.”
- Ruckert (1992, p. 228): The level of market orientation in a business unit (is) the degree to which the business unit (1) obtains and uses information from customers; (2) develops a strategy which will meet customer needs; and (3) implements that strategy by being responsive to customers' needs and wants.
- Deshpande, Farley, and Webster (1993, p. 27): “We define customer orientation as the set of beliefs that puts the customer's interest first, while not excluding those of other stakeholders such as owners, managers, and employees, in order to develop a long-term profitable enterprise.”

- Day (1994, p. 37): “market orientation represents superior skills in understanding and satisfying customers.”
- Homburg (2012) associates customer orientation in the first instance with the dimensions of quality and flexibility in dealing with customers.

What is striking is the lack of uniformity in these definitions. Here we distinguish between customer orientation and market orientation in terms of content.

Market and Customer Orientation of People

We use the term *market orientation* to describe the orientation of decision makers who are responsible for implementing the marketing concept in the firm. A market orientation is a characteristic of people’s behavior that we can refer to as a *behavioral intention*. A market orientation in this sense is the attitude of a function holder, the enduring intention to take the perceptions and decisions of the customer as a yardstick for acting in competition (Trommsdorff, 1997). The customer advantage causes the function holder to always view acting in relation to the customer in terms of the supplier—customer—competitor triangle. Knowing or anticipating the effect of the competition on the customer and drawing conclusions from this for the activities of the firm is an inseparable part of the marketing task. Thus, we can describe market orientation as *triadic*.¹ A market orientation is reserved for this reason for the “full-time marketer,” whose task is integrated customer *and* competitor orientation.

By comparison, most other function holders in the firm are “part-time marketers” to use Gummesson’s term (Gummesson, 1991). These people are not primarily concerned with steering the firm through competitive waters but have other priorities and expertise. Nevertheless, in their own way even these specialists make a contribution to solving the customer’s problem. This part-time role leads us to a definition of *customer orientation*. The task of problem solution for the customer is broken into subtasks relevant for individual functional areas. We call a set of such subtasks a functional program. A *functional program* breaks the overall market orientation task into parts tailored to different functional areas. The functional programs in turn are translated into *behavioral programs* for each individual employee, including the way they interact with others in the same or other functional areas. Behavioral programs are intended to ensure that the specialists are oriented in performing their functions not only for meeting functional targets but also for solving the customer’s problems. The allocation of behavioral programs geared to the customer means that people in the functional areas provide a *certain* service for the customer, which we describe as their customer orientation. If customer orientation is defined in this way for each function holder, then they are not only able to recognize what their part is in solving the customer’s problem, they can also decide what they do not have to do, and when they can or even must say no.

¹ Triadic (Greek) = consisting of three entities.

Example

A field sales employee makes a considerable contribution to solving the customer's problem by their technical consultancy work. However, it is not this person's job to see themselves in the customer's eyes always in comparison with competitors ("thinking in a triangle"). This would not only overtax them but also prevent them from giving of their best. A "customer consultation" program is thus developed in collaboration between a full-time marketer, who has the overall solution to the problem in mind as a performance guarantee for the customer, and sales. Depending on the overall competitive situation and competitive strategy, minimum tasks are formulated for a field sales employee which they are supposed to perform for their customers. In addition, the maximum extent of a consultation is defined in relation to the overall importance of the customer.

A behavioral program for the field sales employee is therefore derived from the functional program and governs the consultancy work of the employee. The employee can thus be seriously *customer-oriented* without having to be *market-oriented*.

Differences in market orientation thus result from the job content and level of responsibility of the worker. It cannot be expected that every employee in every functional area will always think and act according to the principles of customer advantage. That really would be too difficult. The employee lacks the information and the perspective for this.

The difference between market orientation and customer orientation now becomes clearer. Market orientation is triadic and regulates the behavior of market-oriented management; customer orientation is dyadic and is a functional program for the functional area or a behavioral program for the worker. Market orientation is focused on customer advantage; customer orientation on the other hand focuses on specific customer benefits.

Figure 2.9 illustrates the interplay between market orientation and customer orientation (Utzig, 1997). The length of the bar designated 1 symbolizes the extent of customer demands and expectations. It will only rarely be possible to meet these completely. The planned extent of customer demand fulfillment by the supplier (No. 4) will therefore differ to some extent (No. 3) from the customer's demands.

Market orientation focuses on the degree of fulfillment of customer expectations, i.e., the establishment of a target somewhere between the value which the customer sets (No. 1) and the value which the competitor reaches (No. 2). Market orientation determines the boundary between No. 3 and No. 4 and is *triadic* in that the planned performance for the customer is set in relation to that offered by competition.

Once the firm's planned demand fulfillment has been determined (No. 4), *functional programs for all functional areas* and *behavioral programs for all workers* can be derived by breaking the overall performance down into the partial

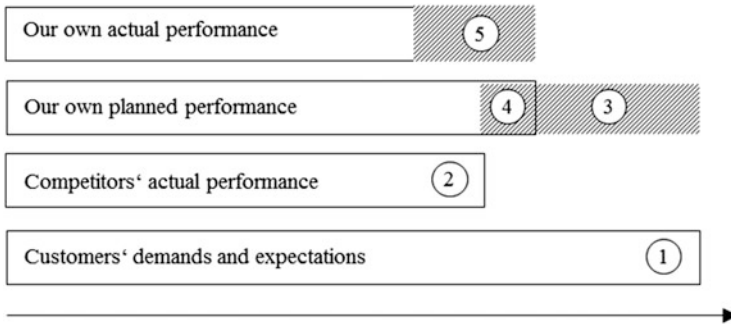


Fig. 2.9 Distinction between market orientation and customer orientation

performances required. Every partial performance is planned according to its contribution to the planned overall benefit to the customer. The extent to which each partial performance is actually produced, or whether deficits result (No. 5), is thus *measurable* in principle. Customer orientation is the requirement imposed on individual partial performances to orient themselves to *defined benefit objectives* for the customer. Therefore, customer orientation is not competitive but *derived* from a competitive market orientation.

It can be seen from this figure that a firm cannot be “customer oriented” if it has not marked the boundary between No. 3 and No. 4 or derived the corresponding functional programs from the planned degree of demand fulfillment. Establishing this boundary is far from simple. It calls for a decision on what and how much one intends to give the customer but also what one does not intend to give them. Since customers’ demands are different, the potential for market segmentation exists, i.e., the identification groups of customers with similar needs and expectations (Kleinaltenkamp, 2002).

A firm that wants to be customer oriented must therefore be market oriented in the first instance and determine the value to be offered according to No. 3 or No. 4. Only then can it establish whether and to what extent the individual functions have made the necessary contributions, i.e., whether customer orientation exists to the required extent.

In addition, customer orientation is an understanding of the *role* the supplier assumes in relation to the customer. This is a serving role, not just services in the narrower sense but generally in every exchange relationship. This requirement is often misunderstood. Only suppliers who can dictate the terms of the transaction themselves can afford to be arrogant. If the decision to buy or not is up to the customer, a serving attitude will certainly be more in the interests of the supplier. But there is another, rather more fundamental aspect. Serving can be seen as demeaning in the sense that we do not wish to be a “servant.”² But those who

²Regarding reservations against serving, cf. the penetrating analysis by the American economist Veblen (1899): “We are deeply convinced that a formal uncleanness, as it were, is attached to

think this way have not only misunderstood the market process, they have misunderstood the difference between changing roles and social status. The supplier is not serving his customer because the latter wants a servant, but because they want to find a solution to their problems. The serving role of the supplier is a problem-solving role.

Market and Customer Orientation of the Firm

Let's do a test and ask ourselves whether a certain firm we know is market or customer oriented. We soon discover that we don't get very far with the previous distinction between market and customer orientation. The market and customer orientations of the firm are not behavioral characteristics of people; on the contrary, we need to ask about the principles and structural features of the overall *corporate process*.

A firm will not become market or customer oriented unless a genuine corporate policy decision is taken at the top decision-making level to make the customer the starting point and end point of the entire enterprise. A *commitment* of this kind is a strategic decision which affects the firm and everyone in it to the core. The self-image of the firm as a whole and the relative importance of its values are called into question and possibly even turned upside down. Market and customer orientation has to be seen as part of the mission of the firm, which is understood and adopted by everyone. This in turn leads to targets that are not entirely of a financial nature, but give top priority to satisfying the customer. From these objectives, it is then possible to develop *competitive strategies* in the markets serviced, which are translated into *functional programs*. The orientation to the customer and to the solution of their problems becomes embedded in the structure and operations of the overall organization.

We must be careful therefore to distinguish between the behavioral characteristics of people on the one hand and the structural features of firms on the other. Table 2.2 summarizes the characteristics of market orientation and customer orientation in people and firms.

2.2.3 Conclusion: What Is Marketing?

Marketing, for a firm (marketing management), is defined as "the planning, coordination, and control of all corporate activities geared to current and potential markets. Corporate targets are to be realized through the long-term satisfaction of customer requirements" (Meffert, 2000).

those occupations which we normally associate with service. Refined people firmly believe that certain lowly jobs [. . .] must also be spiritually infectious."

Table 2.2 Market orientation and customer orientation of people and of the firm

	People	Firm
Market orientation	Business mission, behavioral orientation, attitude Focused on analysis and realization of customer advantage Triadic “Full-time marketer” Job of business unit management	Principles and structural features of business process Comprehensive management task; includes all functions at all levels Geared to superiority in competition Customer advantage as target variable Strategic commitment Job of business unit management
Customer orientation	Behavioral program for each individual employee Fulfillment of own function with regard to a specific customer benefit Dyadic “Part-time marketer”	Systematic translation of competitive strategy into functional strategies and functional programs Translation of functional programs into behavioral programs for each employee

This generally accepted definition makes the following clear:

1. The supplier realizes its objectives by satisfying customer requirements. Producing customer satisfaction is equivalent to solving customer problems. Marketing means orientation to problem solving.
2. Marketing means orientation to the market. By its nature marketing management includes market orientation and customer orientation. Market orientation is geared to transactions with current and potential customers.
3. Marketing represents a large number of activities: marketing is a process. This does not exclude the possibility that marketing can also be institutionalized and that a firm has a marketing department, for example, or a corresponding project team. But marketing should not be understood as one unit in the organizational structure.
4. Just as competition can only be defined within a specific market arena, so too can the role of marketing only be defined in relation to a specific competitive arena. Customer needs vary, and to ensure customer satisfaction, it is necessary to segment customers and to pay close attention to business relationships and to important individual transactions.
5. Marketing in the firm involves the analysis, planning, coordination, and monitoring of market-oriented activities. Marketing in the firm is a management process. Marketing means directing the activities of the firm or the business unit within the competitive environment, with the aim of securing its survival in the arena in question.

The definition of marketing reveals three levels of meaning which together make up the role of marketing in a firm:

- The meaning of marketing as a “*Marketing Philosophy*”—signifying customer orientation and the associated principle of making profits by satisfying customer

needs. This “philosophy” is aimed at achieving market exchanges for the mutual advantage of seller and buyer.

- The meaning of marketing as a “*Marketing Technique*”—signifying the analysis of marketing tools and their effects, i.e., the methods and tools for gathering, processing, and analyzing information and improving decision making.
- The meaning of marketing as a “*Marketing Management Concept*”—signifying the processes of analysis, planning, implementing, monitoring, and controlling of the value-creating activities between supplier and customer, in which the supplier adopts the active role.

All three levels form part of modern marketing in the firm. We can now attempt to paint an overall picture which brings together these essential aspects of marketing. For this purpose, we will use *Porter’s value chain* (Porter, 1999). In this model, the firm is seen as a collection of different types of activities that are linked together. We will not go into the details of his model at this point. Instead, we focus on the depiction of the selling firm as a chain of processes involving different activities.

Just like the seller, the buyer’s firm can also be depicted as a value chain. Seller and customer are therefore two linked chains of activities. This image now enables us to describe a *third process* which links together the process chains of the supplier and customer—the supplier’s marketing. Figure 2.10 illustrates this.

The marketing concept prompts the supplier to develop its competitive orientation from the customer’s process chain. This involves understanding the customer and its processes and how the customer perceives competitors. It also includes integrating this knowledge into the suppliers own process chain (upper arrow).

The marketing concept requires that the supplier adapts its offer to meet the wishes of the customer and strives to secure the customer’s acceptance (lower arrow). The two arrows together make it clear that *marketing is a process which ensures that the processes of the customer and the supplier are harmonized*. Marketing is the engine, gearbox, and steering mechanism of a mutual process of harmonization. The supplier’s process must “fit” with the customer’s process in the sense that the supplier’s offer as a whole enables the customer to organize its own processes more advantageously. The marketing concept suggests that it is the supplier who adapts to the processes of the customer, rather than the other way round. However, this does not rule out the possibility of the supplier pursuing the targeted management of customer expectations.

So that marketing is able to harmonize the two value chains, it is necessary to ensure that the right conditions exist on both sides. On the supplier’s side, marketing formulates the harmonization objectives with this aim in mind and communicates these to all parts of the firm. Marketing also ensures that in its own specialist departments, the objectives are understood and implemented in such a way that each unit can recognize and make its own contribution to harmonization. Marketing must identify and work towards the solution of any interface problems which arise in the course of this.

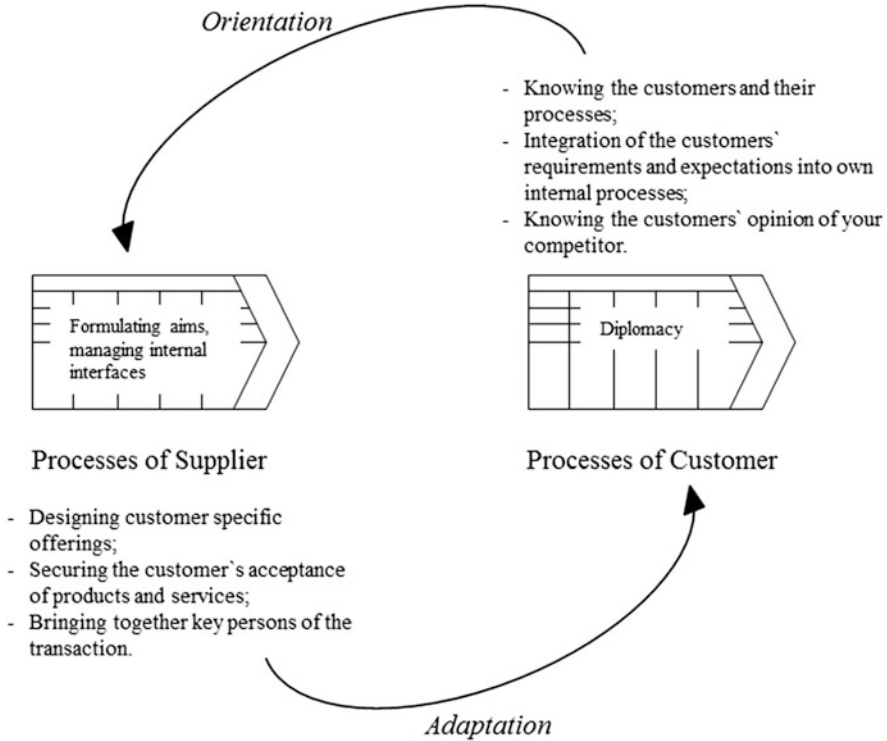


Fig. 2.10 Marketing as a process of supplier and customer harmonization

Interface problems and potential conflicts occur between supplier and customer and must be recognized and managed. This can take the form of “Project Management” in the case of large single transactions or “Relationship Management” in the business relationship between a supplier and customer. Both involve communication with the decision makers in the customer’s firm and bringing together the right people from each firm so that not only is the correct understanding generated but also that the “chemistry” is right. We refer to this task as “diplomacy.”

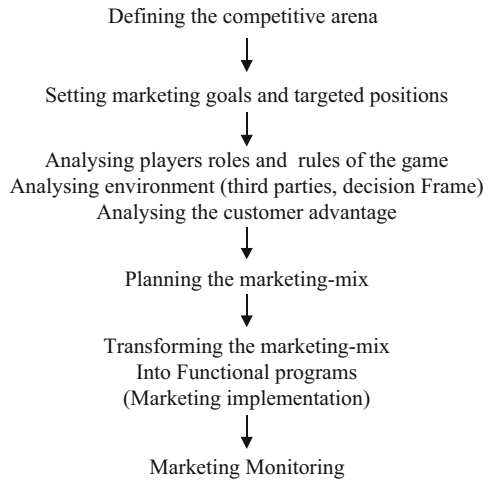
2.3 Marketing as a Management Task

2.3.1 Process Structure of Marketing Management

2.3.1.1 Phased Procedures in Marketing

The marketing process may be described as a sequence of stages as illustrated in Fig. 2.11. However, in practice these stages may not be followed in this order and a firm may jump backward and forward and skip stages.

Fig. 2.11 Phases of the marketing process



We begin with the *definition of the competitive arena*. This is the context in which the competitive process takes place. It is defined so as to focus on the essential elements and derives from the way the “competitive problem” facing the supplier is viewed. This may be a situation in which a supplier has a lead over competition or when it feels challenged by a competitor.

The second phase of the marketing process involves establishing marketing objectives. *Marketing objectives* derive from a firm’s overall objectives and are broken down into appropriate sub-objectives. Without objectives, monitoring and therefore marketing aimed at increasing effectiveness and efficiency are impossible. Especially important is the definition of objectives in terms of the desired competitive market position. Here, market share is relevant, but also important is the positioning of the supplier relative to competition in terms of quality and price.

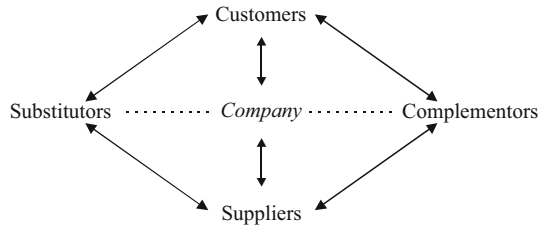
The planning of marketing action involves a careful analysis of the parties involved, in order to identify a competitive position which is as advantageous as possible for the supplier. Hence the third step in the marketing process consists of identifying those with whom one can collaborate in the arena. These include:

- Other businesses of the supplier itself
- The target customer(s)
- The competition

Every competitive situation is characterized by a triangle of involved parties, in which two parties are attentive to a third and the outcome of the market transaction is decided by the interplay between the three parties.

However, another factor is that the parties involved may change their roles over time and even play more than one role at the same time. As a sector develops competitors may become customers, customers may become suppliers or competitors. The complex patterns of *strategic alliances, mergers, and*

Fig. 2.12 Parties in the arena
(based on: Brandenburger & Nalebuff, 1995)



acquisitions, characterizing many global markets in recent times, force to take a new view of competition. We talk about the *players*, who are involved in the *arena*, and the *roles* they play or might play, especially whether they are to be regarded as opponents, as partners, or as neutrals as far as the supplier's objectives are concerned.

Figure 2.12 shows an expansion of the competitive arena from three to five types of players. All the players in the arena are competing for the same thing: to create and acquire value. There are the customers and suppliers of the firm as well as the players with whom the firm interacts, but with whom it enters into no transactions. These are the “substitutors” and the “complementors.” The former are competitors in the conventional sense. The latter are suppliers of complementary products or services, such as hardware and software suppliers. Faster hardware will increase the customer's readiness to pay for more sophisticated software, etc.

The analysis focuses the motives and interests of the players, the roles they play, as well as their capabilities and resources, activities, and products. The supplier seeks to occupy a position that is as advantageous as possible for itself within this context.

In a business arena, certain commonly understood *rules of the game* are likely to exist that have developed over time. These are patterns of behavior among customers and suppliers that determine the conditions for success and who will be the winners and losers. Examples include:

- The way in which orders are placed by certain important customers, e.g., private contract, closed-bid tendering, favoring certain groups of suppliers
- The timing of launches of new product generations, e.g., first-to-market strategies
- The creation of de facto standards, e.g., dominant technical design standards, e-trading, and software systems
- A focus on certain marketing tools, e.g., financial engineering in turn-key business and price leadership from a dominant supplier.

An analysis of the rules of the game is important because adhering to them or consciously changing them can have a marked influence on the competitive position of the supplier.

Finally, the analysis includes a consideration of the relevant environment. This includes relevant laws and regulations (e.g., trade practices legislation,

environmental protection legislation), as well as institutions, organizations, or people who have an impact on competition in some way, such as government agencies, pressure groups, and industry associations. In the competitive arena, as in a sport, there are “spectators,” who are not passive but who, consciously or not, have an influence on the market process and are therefore part of it. We will call them third parties. *Third parties* are players who have an effect on the outcome of market transactions without being participants. Examples are consultant engineers, standards institutions, organizers of trade fairs, and the media.

Knowledge of the players, the rules of the game, and the environment enable the supplier to identify a potential winning position(s) which is defined in terms of establishing appropriate *customer advantage*.

Planning the application of marketing tools or what is termed *the marketing mix* (Borden, 1964) concerns the design of the exchange relationship with potential customers. In a buyers’ market, suppliers can only effectively pursue their interests by understanding how to match the wishes and problems of potential customers with their own interests. This is done by designing an appropriate marketing mix using various types of marketing tools including products, brands, packaging, services, distribution, communications, pricing, credit, and contractual terms. The aim is to seek the most favorable relationship possible between the return achieved and the performance provided to customers.

Achieving an advantageous competitive position involves coordinating and orientating the activities of all functional areas aimed directly and indirectly at the customer. This phase is usually referred to as *marketing implementation*. This phase is inward looking. It includes the translation of the marketing mix into functional programs and coordinating the execution of functional programs with respect to the customer’s expectations.

Finally, *marketing monitoring and control* involve measuring the effects of a firm’s marketing actions including both those aimed at the market and those relating to internal implementation tasks and *comparing actual results with predetermined targets*. The comparison of actual results with targets is the basis for learning more about the market and of the firm’s own internal operations and provides the basis for improved planning of future marketing action.

2.3.2 Marketing Management as a Closed-Loop Control System

Marketing management may be depicted in terms of a feedback control process or *closed-loop control system* like any cybernetic system. The supplier is the controller and the customer’s process generates the control loop (see Fig. 2.13).

The *reference variables* here are the firm’s *marketing objectives*. The supplier enters the competitive arena with one or more objectives that may include market share, levels of turnover and profit, achieving a particular market position (e.g., a level of awareness or distribution intensity), the level of customer satisfaction, the continuation of a business relationship, or securing a particular order at a certain

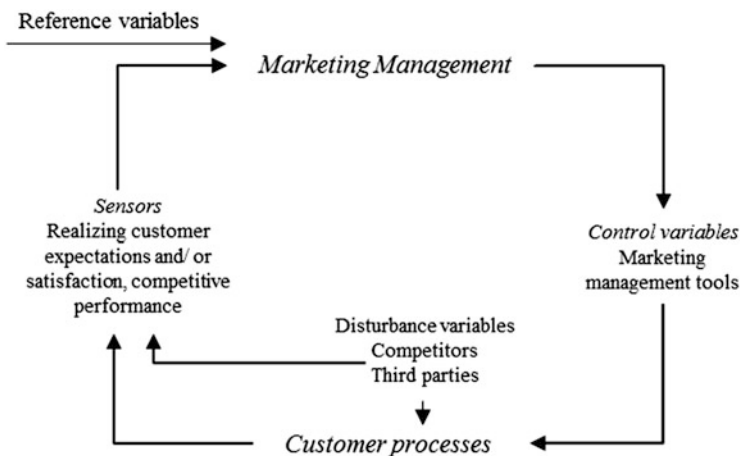


Fig. 2.13 Marketing management as a closed-loop control system

price. These objectives form the control mechanism for all actions taken by the supplier in the arena.

The *controller* (marketing management) is the decision-making unit which steers the marketing process. It may be top management, it may be a functional director such as the Sales Director, or it may be the manager of a staff department reporting to top management or to the Marketing Director. It is irrelevant for our description of the marketing management process which unit in the firm actually fulfills the role of controller. Without such a controller we cannot speak of marketing.

The controller gathers information about the state of the competitive arena; about purchasers, distribution systems, and competitors; about third parties and their influence; and about the overall economic and social environment in which the players operate. The information sources the controller uses are their *sensors*. These include the firm's own field force, the systemic acquisition of information from the media, the use of trade fairs, databases, information services, and—last but not least—the firm's own market research resources. In this way, the controller finds out how its offer is perceived by the market, about the activities of competitors, and how they are regarded by target customers.

Usually some gaps between actual and desired outcomes will be identified that call for action. The supplier uses various tools or *control variables* to try to improve the situation. Two groups of marketing management tools form the marketing mix. The first group comprises tools which determine the content of the offer. These are (1) the range of products and services provided (including the design of the product, product range and services, and possibly credit services) and (2) the pricing policy and the contract policy. The second group consists of those tools with which the supplier facilitates and brings about the conclusion of a contract with his customer. These are (3) the distribution policy and (4) the communications policy. Figure 2.14

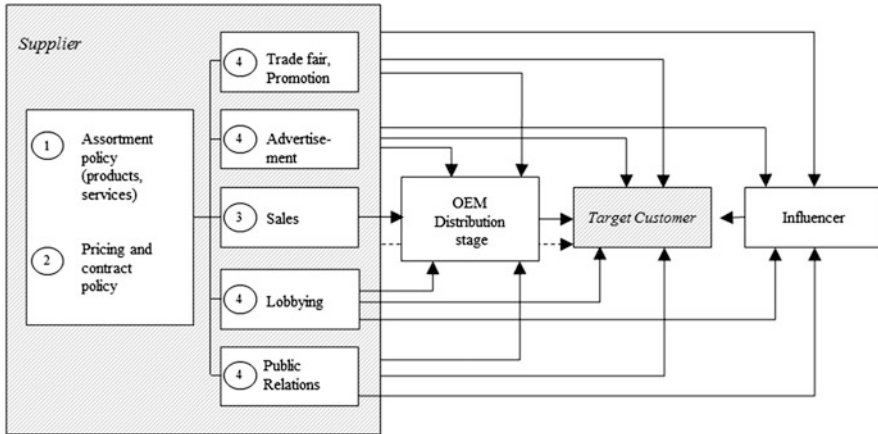


Fig. 2.14 Tools and levels of effect of the marketing mix in business-to-business marketing

illustrates the organization of the tools into a system and the levels at which they exert an effect.

In addition to the supplier’s control variables, other factors affect the control loop, called *disturbance variables* (“noise”). These include the tools competitors use to influence the market process. Third parties can also have an effect on purchasers (cf. the “influencers” in Fig. 2.14). Examples include consultants, technical journals, and scientific institutions. Finally, the general public can also play a role and, on occasion, can exert considerable pressure on suppliers in the form of boycotts and protests. Examples include environmental protection groups affecting demand for certain types of products and publications trying to influence purchasers by identifying firms that pollute or have questionable employment practices.

The system is a closed loop and movement around is continuous. The controller is part of the firm and is part of a closed-loop control system at a higher level. The linkage of the controller to higher level control loops in the firm is the means by which *changes in the reference variables* occur, as corporate objectives and strategies change. So far we have not considered the supplier’s internal or in-house processes. These processes can be described also as a closed-loop control system. The in-house control system describes a management task that, in contrast to the external control system, relates to directing in-house processes. It comprises the activities of all the people and departments in a firm that influence customer value creation, directly or indirectly. It may include participating subcontractors or joint venture partners, but not people within the customer’s firm. The in-house processes include not only those activities that take place up to the time of the transaction but also include after-sales services provided to the customer (Fig. 2.15).

Marketing management as the *controller* develops marketing objectives that describe the desired state of the in-house control loop (*reference variable*). These

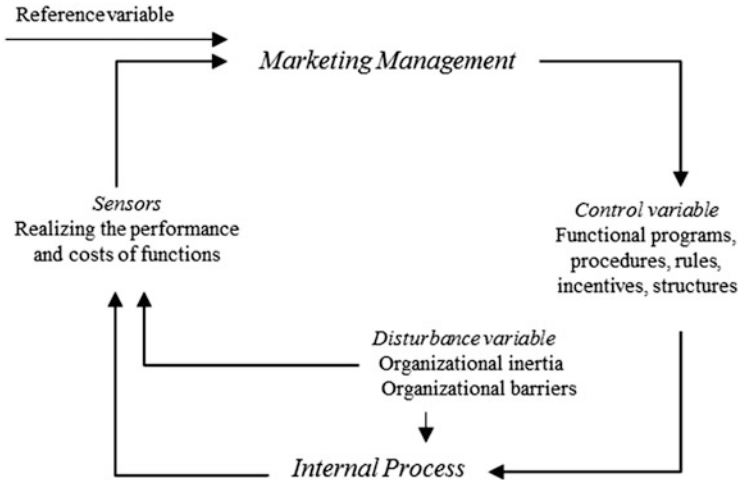


Fig. 2.15 The in-house closed-loop control system of marketing management

objectives are performance objectives for the in-house process which are derived from customer expectations and also from top management expectations. In terms of the dimensions of competitive advantage (Sect. 1.4), we can distinguish between effectiveness targets and efficiency targets. Focusing on customer expectations leads to the specification of *effectiveness targets*. *Efficiency* targets are aimed at the requirements of the own firm, including keeping within cost budgets and achieving profits.

The *control variables* of the internal control system are those measures which marketing management uses to influence the process in the desired way. These include the functional programs worked out and agreed jointly with functional divisions. R&D, Development, Production, Logistics, Sales, and so on make different *contributions* to achieving effectiveness and efficiency targets and, as a result, objectives need to be divided into appropriate and measurable performance variables. Control variables also include the usual types of management tools, such as procedures, rules, agreements, and incentives. Finally, the establishment of an organizational structure is also a control variable.

Disturbance variables (“noise”) in the in-house control system do not come from outside the firm, but from within. The control loop is affected by the degree of *inertia* of the system. This includes organizational resistance and personal resistance by management and employees which leads them to be distracted, unwilling or unable to perform as required.

The *sensors* of the internal control system are the feedback and monitoring systems in place. The control of effectiveness is based on the quality standards attained; the control of efficiency relies on the in-house accounting system and measures the profitability of a process in comparison with the specified targets. Performance feedback is the starting point for the readjustment of target variables.

Marketing management comprises both an external *and* an in-house control system that have to work in combination. How these two control systems are coordinated is discussed in a later section. First, we focus on two other important issues. Directing the external control loop raises the question of how *customer satisfaction* can be “managed.” Management of the in-house control loop is based on influencing the *market and customer orientation* of employees and managers or of the entire business unit.

2.3.3 Management of Customer Satisfaction: The External Loop

Customers are satisfied when they have the feeling that they have made the right purchasing decision. The precondition for a purchasing decision is the existence of a customer advantage, i.e., a positive difference in the perceived cost–benefit ratio between the suppliers considered when making the choice. Customer satisfaction is achieved when the customer advantage experienced is the same or better than that originally expected before the purchasing decision was made. Customer satisfaction therefore depends on the gap between actual experience and expectations.

The supplier can influence both the customer’s experience and their expectations, to some extent, by means of the marketing mix. In this way they affect the satisfaction of the purchaser. Through the use of various marketing tools, especially the communications program, the supplier can influence the expectations of the purchaser, and it can guide the experience of the purchaser in all phases of their encounter with the product or the service (i.e., acquisition, implementation, utilization, and disposal). The supplier creates customer experience through its activities that confirm, exceed, or fall short of the customer’s expectations, and this affects their degree of satisfaction or dissatisfaction.

Customer satisfaction is generated through the interaction of controllable (marketing mix) and uncontrollable factors. The latter include changes in the attitudes and behavior of the purchaser, changes in the conduct of competitors, and changes in the environment.

As far as the supplier is concerned, customer satisfaction means matching the customer’s experience with their expectations—taking into consideration uncontrollable factors. The central task of the supplier is to satisfy the customer so that they will buy again and talk about their experience in positive terms with others, i.e., generate positive word of mouth communication. In markets characterized by long-term business relationships or by brand or supplier loyalty, customer satisfaction is a key focus of attention for marketing management.

Figure 2.16 provides an overview of the satisfaction generation process. Using this we can identify the most important factors determining customer satisfaction and highlight the options open to marketing management to shape satisfaction. The diagram depicts the series of stages involved on the customer’s and the supplier’s side. Each stage has a potential impact on customer satisfaction and the arrows indicate the direction of the effect.

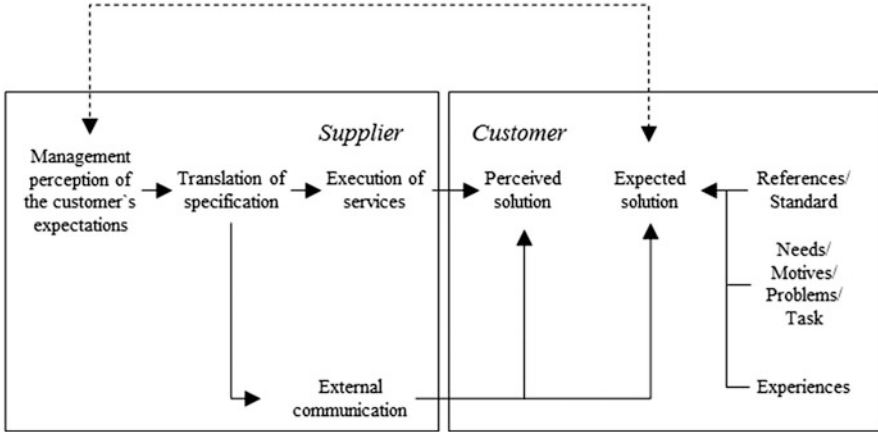


Fig. 2.16 Determinants of customer satisfaction from the supplier's and customer's standpoint (based on: Parasuraman, Zeithaml, & Berry, 1985)

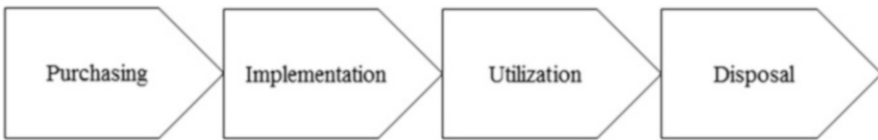


Fig. 2.17 Customer's process chain

Let us first consider the customer and its expectations. The customer has a certain problem to solve (cf. Sect. 2.2.1.1) and wants to solve it with the supplier's assistance. The customer wants to bring about a change in its firm, and the supplier can affect any stage of the customer's buying and using process chain through the products and services it offers, i.e., the exchange process and the transaction, implementation, utilization, and disposal (Fig. 2.17).

The customer decides whether to use a particular solution to its problem based on the overall reduction in cost and/or the increase in performance it can achieve across all stages of its process chain.

The supplier promises the customer a solution to its problem and thereby creates expectations. Customer's expectations are also formed independent of the supplier due to the nature of the problem faced and the customer's ideas about how it wishes to solve the problem. These ideas will, in turn, be affected by the customer's past experience. Other factors affecting expectations include any relevant industry standards or customs, what other suppliers are offering, and how such offerings are perceived by the customer.

The supplier develops an understanding of the customer's expectations and translates these into market performance specifications and then into a means of communicating the offer to the customer. The customer purchases the product and/or service, evaluates it, and compares the actual experience with their

expectations. The match between the two determines the level of satisfaction or dissatisfaction.

The supplier has various ways of affecting the match between the customer's evaluation and expectations, but we will not go into these in detail here. The main point is that the customer can be influenced by the supplier. If the supplier creates unrealistic expectations through its communications, the customer will be disappointed and, if the supplier creates very low expectations, the customer may not buy. Management of customer satisfaction therefore involves creating the appropriate customer expectations. Important factors here will be the impact of earlier purchase experiences and the influence of the competition. The *implementation* of the offer then results in the perceived solution, if the supplier makes no mistakes. However, it should be recognized that a large measure of subjectivity may be involved. Customers' expectation can change even after a purchase has been made as a result of changing circumstances. For example, competition could announce a new generation of products to be introduced shortly, which could change customers' expectations and adversely affect their satisfaction.

The measurement and management of customer satisfaction in industrial firms raises certain questions of methodology which we can only touch on briefly here (Homburg, Rudolph, & Werner, 1997). The important thing is that an attempt is made to measure customer's satisfaction or dissatisfaction. Customers may be questioned directly in the form of a satisfaction study, or indirect methods can be used. One way is through the systematic analysis of customer complaints and analyses of lost orders. One thing is certain: if a firm does not regularly monitor the satisfaction or dissatisfaction of its customers, the closed-loop control system is no longer a closed loop and the marketing concept has not been followed.

In sum we can state: Marketing management is responsible for directing the customer's purchase and use process. The most important criterion for success is lasting customer satisfaction, and marketing management is the management of customer satisfaction.

2.3.4 Management of Market and Customer Orientation: The Internal Loop

2.3.4.1 The Interface Problem

At first glance, everything seems quite simple. We know what matters—the customer is to be satisfied—so let's do it! Of course, there is a cost involved. But benefits will be gained in return. So far, so good. But that is when the difficulties start.

Marketing is a team game. For a team to achieve its objectives, it needs a will to win more than the player needs it. In soccer, it is not enough to put the eleven best players in a country together and have them run around after the ball. This alone will not create a “champion” team. To produce excellent results in competitive markets, a large number of heterogeneous internal people and resources have to be controlled and coordinated. In this section, we can only give an overview of how

this occurs, especially as research in this area is not as well developed as it is in the investigation of the customer's process (Utzig, 1997).

Our starting point is the division of labor in the supplier firm. *Adam Smith* was the first to recognize, in 1776, the productivity-enhancing effect of the division of labor and specialization, and this contributed to the wealth of nations (Smith, 1776). The reasons for this are well enough known. But the division of labor has its price. Dividing up work leads to the problem of coordinating work. It results in the formation of sections and departments devoted to specific tasks and therefore requires systems of coordination and integration. The division of labor is based on separating the overall task, that of providing the solution to the problem demanded by the customer, into subtasks which, once solved, have to be fitted together. The division of labor gives rise to the problem of organizational interfaces. These are "the transfer points provided between those responsible for subtasks" (Brockhoff, 1994) and may be horizontal or vertical. Horizontal interfaces are transfer points between two units on the same hierarchical level, whereas vertical interfaces are transfer points between two units on different levels of the organization. Transfers can relate to information, physical goods, financial resources, or rights. Transfers need coordination, i.e., the "arrangement of interactions and information for the goal-oriented completion of the task as a whole when work is divided" (ibidem). Interfaces are therefore an unavoidable aspect of task completion when work is divided.

At interfaces, obstacles to transfers arise. Just as the required capacity is assured at interfaces in engineering by means of engineering design, the same applies to organizational interfaces. In the case of market orientation, an additional factor is that organizational interfaces consist of human beings. And people bring with them their own (often quite divergent) interests, predispositions, perceptions, and their limited information-processing capacity, all of which affects the efficiency and effectiveness of interfaces. The management of human interactions and relationships across organizational interfaces is one of the main issues in the management of market orientation.

The issue of transfers has two kinds of effects. Firstly, costs arise. In addition to the planned costs of transfers and coordination, unplanned costs occur in the form of planning errors, loss of time, the cost of capital tied up, the distortion of information, inconvenience, and loss of motivation. The more horizontal interfaces there are among functional specialists, the higher these costs become, the more ponderous the whole firm becomes, and the more difficult it becomes to adapt the whole firm to the market. This applies equally to vertical interfaces. They cause (usually invisible) costs in the form of the extension of supervisory structures (e.g., "*Parkinson's Law*"), the distortion of information as a result of it being passed up and down within the firm, inflexibility, and longer decision-making times.

Secondly, the problem of interfaces affects the customer. The lead times experienced by the customer, costs resulting from shutdowns due to product defects, bad service experiences, and the trouble and expense of making complaints will all impact on the customer's evaluation, and this ultimately affects the supplier's

returns. Interface problems are therefore a drain on the efficiency and effectiveness of the supplier firm.

Such coordination costs can far outweigh the productivity-enhancing effects of the division of labor and specialization. This is especially the case as the pace of change in society and technology is increasing, calling on companies to adapt with increasing speed. The complexity that emerges from a very large number of interfaces can no longer be justified in the light of the turbulence of the markets. Simpler, leaner structures are therefore emerged to assist market and customer orientation.

As interfaces are unavoidable, the important thing in managing a firm's market orientation is to achieve the correct arrangement of interfaces and to manage them properly. A functional division of labor, which was the traditional approach to the organization of an industrial firm (Taylor, 1914), arose due to technical and economic circumstances. But in this form of organization, market orientation has to deal with the problems of coordination and transfers among divisions or units with often quite different cultures, such as R&D, Production and Sales (cf. Fig. 2.18).

Within a functional division, integration is easier because there is a common objective. Between functional divisions, objectives can differ considerably, and the *cross-functional* integration required for customer satisfaction becomes difficult to accomplish. Marketing—as the customer's agent, so-to-speak, in the firm—tries to ensure that the subtasks taken on by departments and functional divisions are integrated *to the benefit of the customer* (Shapiro, 1988, Plinke, 1998). This requires a different perspective, one not focused on functions and hierarchies but on the business processes involved in solving customers' problems.

2.3.4.2 Levels of Market and Customer Orientation

The management of market and customer orientation focuses on the control of interfaces. In our discussion so far we considered the interface problem as a “cross-

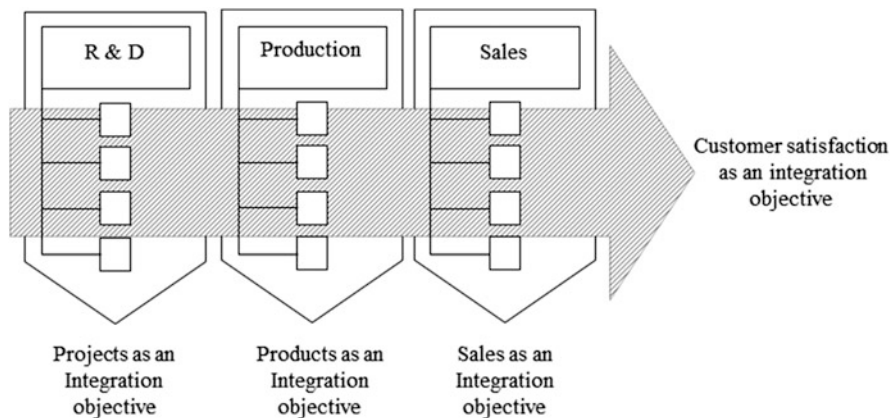


Fig. 2.18 Interface management in the functional division of labor

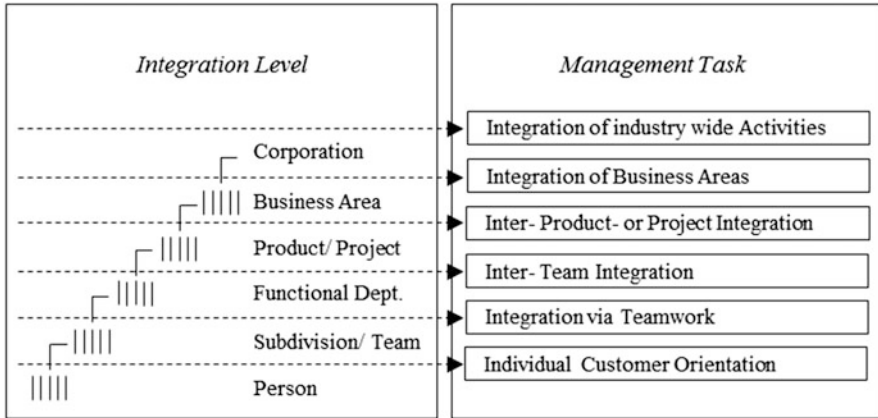


Fig. 2.19 Integration levels of market orientation (Source: Plinke, 1998)

functional” management task. Now we take a more general look at the interfaces that could interfere with ensuring customer satisfaction. It is, of course, not only functional divisions with their varying objectives, cultures, experiences, concepts of value, and egoism, which may present problems, but it is also *type of interface that* must be considered.

Figure 2.19 presents an overview of the various levels of market orientation in a firm. Listed on the left are the levels of integration related to the various types of interfaces. On the right are the corresponding tasks of market orientation at each level.

The diagram should be read from the bottom upwards. *People* are grouped together into teams or departments. If a task as a whole, such as the preparation of a quotation, is assigned to a team or a department, interfaces are created. These generate the need for transfers and therefore create potential sources of breakdown. The main concern is that information will be lost, priorities will be incompatible, or conflicts will arise in the workplace. As a consequence, the customer could receive a quotation which is incomplete, contradictory, or incomprehensible or that may arrive too late. Customer orientation requires the integration of the individual activities with regard to the task as a whole. If several *departments* or *teams* within a functional division are involved in solving the customer’s problem, the need arises to integrate their activities. Trade-offs may be required among competing objectives of integration—the overriding priority being customer orientation (Fig. 2.20).

The problem of integrating different *products* or *projects* into business units arises if customers wish to buy several products or services from one source. When the customer buys from different product ranges, the different divisions involved become painfully aware of the interface problems created. “Whose customer is this?” “Who claims the sale?” The supplier that has adopted a product-oriented organization experiences interface problems in this situation that impede growth

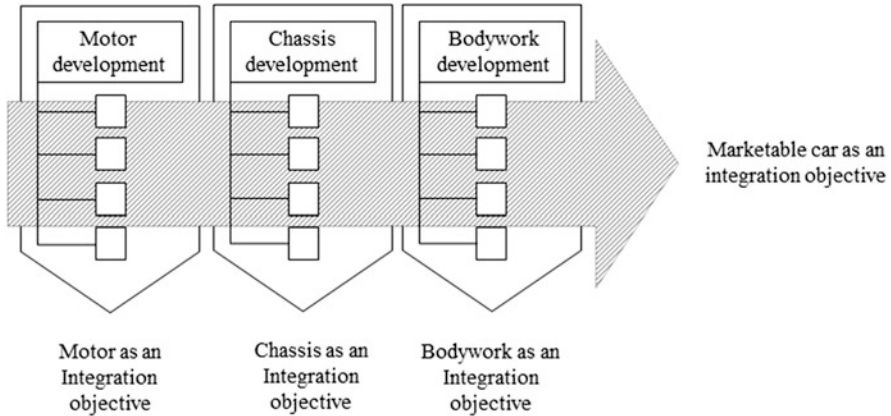


Fig. 2.20 Managing interfaces in development teams

and drive-up costs. The main reason is divisional suboptimization, particularly in companies relying on incentive systems focusing on business unit profit. Suboptimization results in the division at the expense of other divisions and the performance of the firm as a whole.

Interface management issues arise also in the integration of business divisions, as when customers demand complex total solutions involving the collaboration and coordination across several business divisions. Finally, interface management issues arise *between firms* when several firms jointly solve a customer problem, e.g., when a turnkey project in connection with industrial plant is realized jointly by several firms, or when suppliers, subcontractors, distributors, and others are involved in creating and delivering value to customers.

From the foregoing discussion, we see that, at all levels in the firm, from the interpersonal to the firm as a whole, there are coordination and integration tasks which impact on a firm's ability to be market oriented.

2.3.4.3 "Kotler's Law": What Are the Factors Opposing Market and Customer Orientation?

Kotler identifies three basic types of problems limiting a firm's market orientation that arise from intra-firm processes. These are:

- Organized resistance
- Slow learning
- Fast forgetting (*Kotler*, 1997)

"*Kotler's Law*" is a headache for every firm striving for greater market orientation. A firm that demands market orientation from all its employees and managers will have to deal with resistance whether organized or not for various reasons. In a

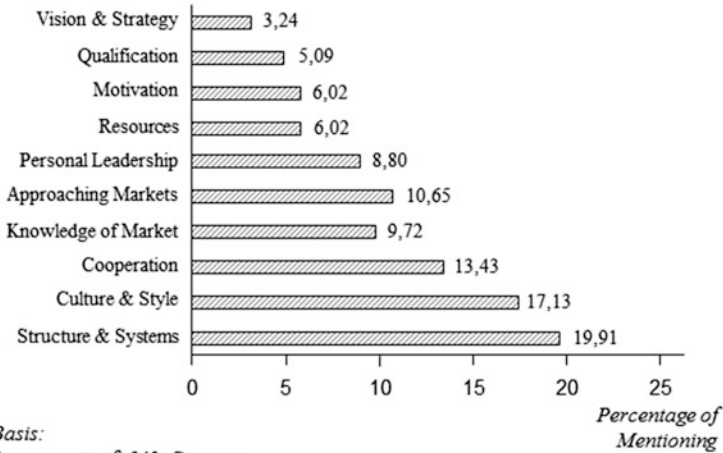


Fig. 2.21 Perceived barriers to market orientation

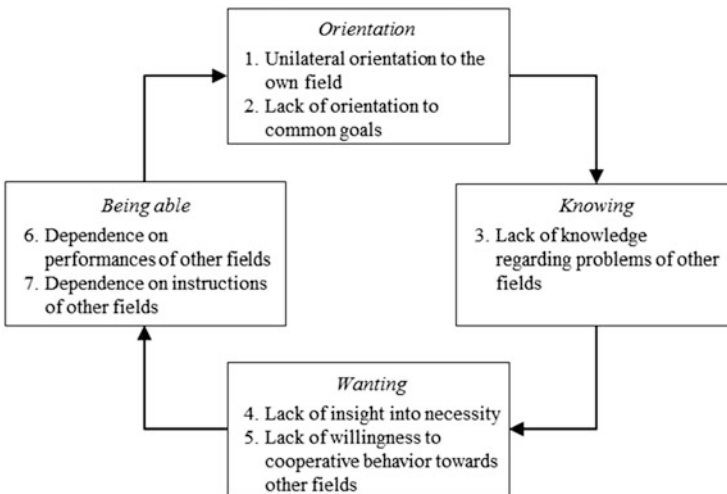


Fig. 2.22 Impediments to interdepartmental collaboration (Source: Wunderer, 1997)

study of different companies and sectors of industry, a variety of barriers to increased market orientation were identified, as shown in Fig. 2.21 (Plinke, 1996).

Figure 2.22 summarizes some of the main reasons for resistance. In addition to “not-knowing,” there are “not wanting to,” “not being able to,” and a general

absence of perspective. All four reasons constitute barriers to cross-functional collaboration.

A lack of knowledge can lead to resistance because market orientation is perceived as something foreign based on the firm's past history. Predispositions, myths, and misunderstandings, which we referred to in the first section, can play an important role in this as well.

A lack of readiness and a lack of insight into the need for market orientation can arise as a result of anticipated disadvantages. One of the benefits of functional specialization is that learning effects occur which simplify tasks from the viewpoint of the people responsible. These benefits arise from the repetition of identical tasks or functions. In contrast, market orientation focuses on the management of interfaces between functions. The consequences are new demands on the readiness and a capacity to collaborate across divisional boundaries. This can result in the loss of influence and status for some areas and the introduction of new technical requirements that generate uncertainty and rejection. The individual's expertise in their own field is brought into question by such changes and can lead to difficulties in understanding and to conflicts. Organized resistance is the readily identifiable expression of an attitude of refusal being held by those in the firm who anticipate disadvantages from the new orientation (Witte, 1973).

A lack of ability is another reason for resistance. This may occur when interdependent departments have not been appropriately coordinated or when skills and resources are inadequate.

We can distinguish three forms of interdependence in decision making (Frese & Hüsch, 1991):

- Interdependence due to intra-firm interrelationships in activities (e.g., production has authority over delivery times, which is also a means of competition for the Sales).
- Resource interdependence (e.g., several ranges of products jointly use sales facility)
- Market interdependence (e.g., several product-based sales divisions are targeting the same market segment and are partly in competition with each other).

Interdependence can lead to conflicts that become entrenched if they are structural in nature, with the result that divisional loyalties and focus predominate, at the expense of market and customer orientation.

The *absence of common goals* becomes a reason for resistance as when management only pays lip service to market orientation. This is the most important source of "organizational resistance." Management talks about customer orientation and market orientation but is not aware that the conduct of people in the firm is not changed as a result.

Management needs an understanding of the conditions and incentive systems affecting employees' behavior if they are to encourage employee's behavior to be market oriented. Otherwise, management may end up putting too much strain on the goodwill of their employees, which could lead to the entire concept being rejected.

One view is that market and customer orientation are mainly a question of employee attitudes. If they have the right attitude, their conduct towards the customer will improve as a result, so the argument goes (Kroeber-Riel & Weinberg, 2003). But such a view is naïve. Moreover, it results in management belaboring employees and managers with slogans that aim to get them to change their behavior and make the customer the center of their attention. Many channels of communication can be used to this end including formal mission statements, appeals, addresses to staff, and in-house magazines. Seminars on customer orientation are another popular method of trying to indoctrinate employees, so to speak. But these measures do not work, because they are based on a false logic. It is based on what may be called the “Preacher Approach” (Plinke, 1996). If the boss, the consultant, or the seminar leader is a good preacher, if they have charisma and convince people with sound arguments, the audience will believe them, follow them, and inwardly vow to improve. However, just as the congregation listens enthralled to the sermon, but afterwards goes on in the same old ways, so too will employees, once the sermon is over, continue to behave in the same manner as before. This is because the approach fails to recognize how the individual is embedded in an organizational context which shapes behavior. Appeals to market orientation, such as “the customer pays your wages after all!” are ineffectual because it does not correspond to the reality of the person addressed. As far as they are concerned, their wages depend on their boss, their partner in their contract of employment, and not on the customer.³ The error lies in having a simplistic model of what drives employee behavior, i.e., the one depicted in Fig. 2.23.

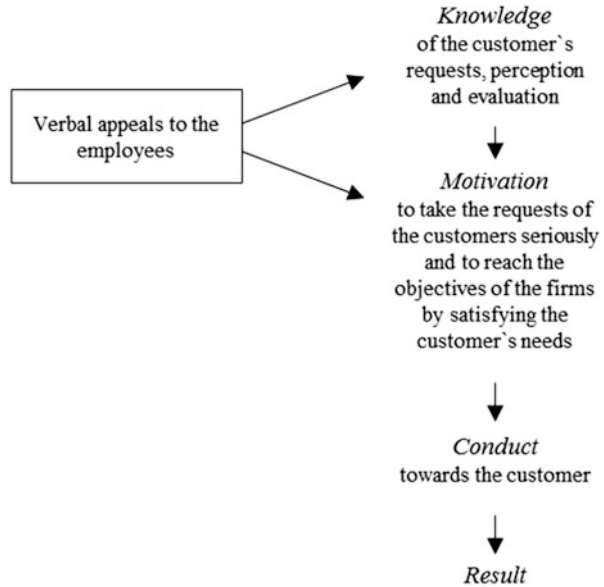
Slow learning is as complex as organized resistance. Once it gets established, resistance cannot be broken down easily. Acceptance develops gradually. People in the organization will need time to reorient themselves and change their behavior. The underlying cognitive and emotional processes involved in forming a positive attitude towards a new situation can be an arduous and sometimes painful one.

People will learn the new message slowly even if they develop no resistance to the concept of market orientation. Learning, as the acquisition of new skills, is stressful and time consuming, especially when groups and teams of people in the firm all have to learn at the same time. The ability of individuals to adapt as well as their willingness to do so is also an important issue (Witte, 1973), especially when it requires having an insight into the complex interrelationships of the business process.

The third element in Kotler’s Law is *fast forgetting*. If a firm has become market oriented after great effort, it needs to act so as to maintain its market orientation, or else people may tend to slip back into their old ways and lose sight of the customer.

³ If, on the other hand, the contract of employment has been made in such a way that wages are dependent on sales, the employee might feel that he himself is dependent on the customer resource and will probably adjust his behavior to suit the customer.

Fig. 2.23 The preacher approach to market orientation—the wrong approach



2.3.4.4 A Cause and Effect Chain of Market and Customer Orientation

How can the management of market and customer orientation be improved? Kotler's Law aptly describes the *motivational* and *cognitive* barriers to a change in behavior but does not deal fully with the limits of the Preacher Approach. For this we need to realize that we cannot understand an individual's behavior in isolation. Human behavior is embedded in the market and customer orientation of the *entire firm*. Figure 2.24 provides an overview of the factors involved and suggests an approach for the management of market orientation, moving from right to left across the figure, i.e., from effects to causes.

Results

Companies move into action when the current situation does not correspond to the desired situation. If the results of corporate activity are reasons for dissatisfaction and criticism, if profit, profitability, or sales leave something to be desired, and if an important order was not won, the call goes out only too quickly for the problem to be solved by "increased marketing effort." Immediate measures are decided on and consultants are appointed. The consequence is a call for "more customer orientation" and "more market orientation." What probably happens is that a form of behavior results resembling the aforementioned "Preacher Approach." A cause and effect relationship is assumed to exist between such conduct and its results which, as we have argued, are wrong.

Conduct

We must understand the behavior of the people involved in terms of the context in which they operate. This includes their motivation, knowledge of the market and

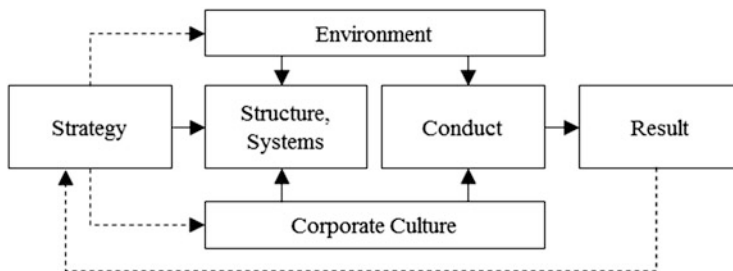


Fig. 2.24 A cause and effect chain of market orientation

customers, their skills in dealing with the customer, and making a contribution to solving the customer's problem. Given their attitude to the customer, the individual experiences *intrapersonal* conflicts. The motivation to assist in solving the customer's problem competes with other motives, related and unrelated to the task at hand. What is required on the part of managers and employees is an ability to empathize with the customer—to be able to put themselves in the customer's shoes, to see things as the customer sees them (Trommsdorff, 1997), and to act positively in the customer's interests. Webster calls this *customer commitment* (Webster, 1988).

Important tools for guiding intrapersonal priorities in a market-oriented way are, in general terms, the tools of human resources management. The main options are training and incentives. However, they can only make a partial contribution as part of a more comprehensive management approach. The term "internal marketing" is used to refer to the process of trying to bring about the desired behavior. According to Grönroos (1981), the idea of an internal marketing function is to get motivated personnel with a great sense of customer orientation.

The behavior of the individual is related to the way in which the firm is managed. Managers, colleagues, and subordinates influence the performance of the individual. Another factor is how well people collaborate within the same division and across divisions.

Apart from inter- and intrapersonal factors affecting behavior, there are also structural influences. These we will consider next.

Structure and Systems

The structure of an organization as well as its systems and procedures have a major effect on the way people behave. The formal structure of a firm includes the allocation of tasks among people and units, the delegation of responsibility and authority, reporting obligations, and status. A person's position in the structure creates *expectations of behavior*. This applies to both managers and employees. For this reason, structural design as a tool for managing market orientation is of special importance. This applies not only to formal structures but also to informal structures in the organization.

Organization's systems play a role in coordination, in the provision of information, and in providing incentives for behavior. Systems do not create expectations of behavior, but they do affect behavior. This includes the design of incentive systems, the performance characteristics of the information and communication system, and the way in which management's control systems are designed.

Strategy, Culture, and Environment

The appropriate design of an organization's structures and systems derives from the strategy of the firm. The strategy establishes the objectives which are to be achieved in the competitive environment; the structures and systems are the means by which the objectives are to be realized.

The firm's business environment and its corporate culture also impact on the design of structures and systems, as well as on the way managers and employees behave. The business environment, especially the strength of competition, has a strong influence on the nature and degree of market-oriented behavior. The corporate culture refers to the values and models of behavior which characterize a firm and is the outcome of its history. A corporate culture develops over a long period of time and cannot be changed in the short term.

From the foregoing, we can identify a chain of cause and effect relations: strategy determines the decisions about structure and systems; structure and systems create the framework and the incentives for market-oriented behavior (or not), with the additional influence of the business environment and corporate culture that has developed over time. If all is designed and implemented as planned, market-oriented behavior hopefully results. If the results are not satisfactory we return to the beginning—the *feedback arrow* points directly at strategy: if the results are not satisfactory, the cause should be sought first in the strategy and not in behavior. Sweep the stairs from the top downwards!

2.3.5 Market-Oriented Management as an Integrative Process

Industrial marketing management, as we have argued, is aimed at establishing lasting customer satisfaction. We have depicted customer satisfaction and market and customer orientation as the cornerstones of the marketing concept. Marketing management matches the customer's process and the supplier's process. It is the driving force in the firm which brings the interests of the customer and firm together.

We have broken down this marketing management process into: (a) a closed-loop control system directed outside the firm that is concerned with the customer's process and (b) an in-house closed-loop control system which covers the intra-firm processes and their direction. Success in industrial marketing management depends crucially on the in-house and external closed-loop control systems being combined into a coherent overall management concept that ensures market orientation and customer orientation.

Fig. 2.25 In-house process and customer's process



The in-house process and the customer's process are directly interrelated. The supplier's in-house process is the means by which value is created. It consists of all its activities in research, development, procurement, production, logistics, sales, etc. The customer also creates value by means of their activities in research, development, procurement, production, logistics, sales, etc. The part of the customer's process that is of primary interest to the supplier concerns the procedures for procurement, implementation, utilization, and disposal. The supplier has an effect on the customer's processes and conversely, the customer has an effect on the supplier's process, as shown in Fig. 2.25.

The in-house and the customer's process are linked together in a specific way: the in-house processes serve as input for the customer's processes. In other words, each individual service provided by the supplier is connected with the customer's services in a specific way. This is illustrated by Fig. 2.26.

The in-house process and the customer's process have to be coordinated. Figure 2.27 illustrates the interplay of the two control processes. The external controller directs the external control system, and the in-house controller directs the in-house control system. This reveals the Achilles' heel of marketing management: if the external and the in-house controller are not well coordinated, it means that the controller guiding the external control loop is not operating in a way that is compatible with the in-house process. This is another example of an *interface* problem, which can be the cause of delays, misunderstandings, divergent objectives, etc. In a market environment in which speed, flexibility, innovation, quality, customer orientation, and customer responsiveness are regarded as the prerequisites for survival, an interface problem of this sort can become a hazard.

This interface problem can be eliminated by replacing the two controllers by a single one. The relationships between the in-house and external control loops are illustrated by an appropriate link between two controllers, which merge into a higher-level controller. This step fulfills the principle of *integrated marketing*: instead of two heads, there is one that bears the integrated responsibility—for a knowledge and interpretation of the customer's requirements and for meeting these requirements through the functional divisions of the supplier firm. This overall responsibility is by its nature *entrepreneurial*: the person or persons responsible cannot hold anyone else in the firm responsible for an undesirable outcome on account of their overall strategic direction and coordination of the control processes.

The overall controlling entity has two faces, or a *Head of Janus*: one face turned towards the customer's process and competition, the other towards the in-house process. But there is *only one brain* guiding both processes. We will call this integrated approach *market-oriented management*, i.e., when responsibility for

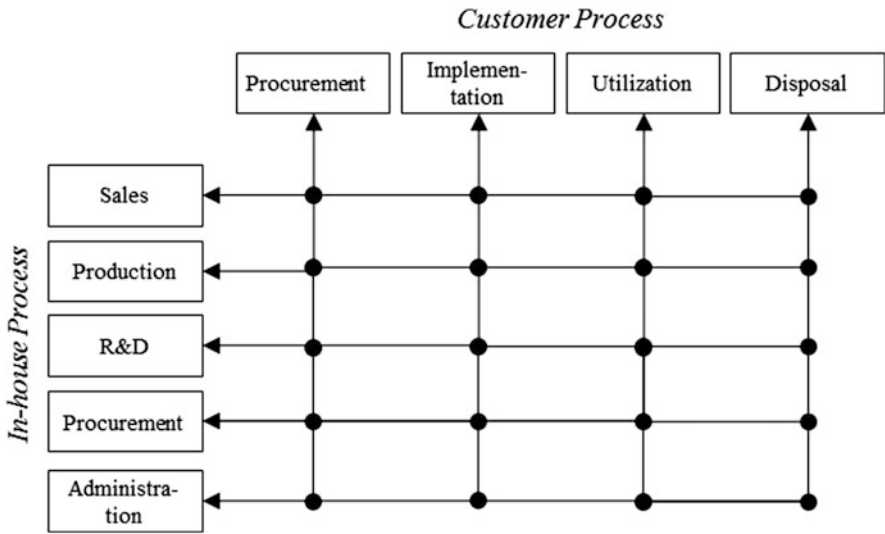


Fig. 2.26 The link between the in-house and the external process

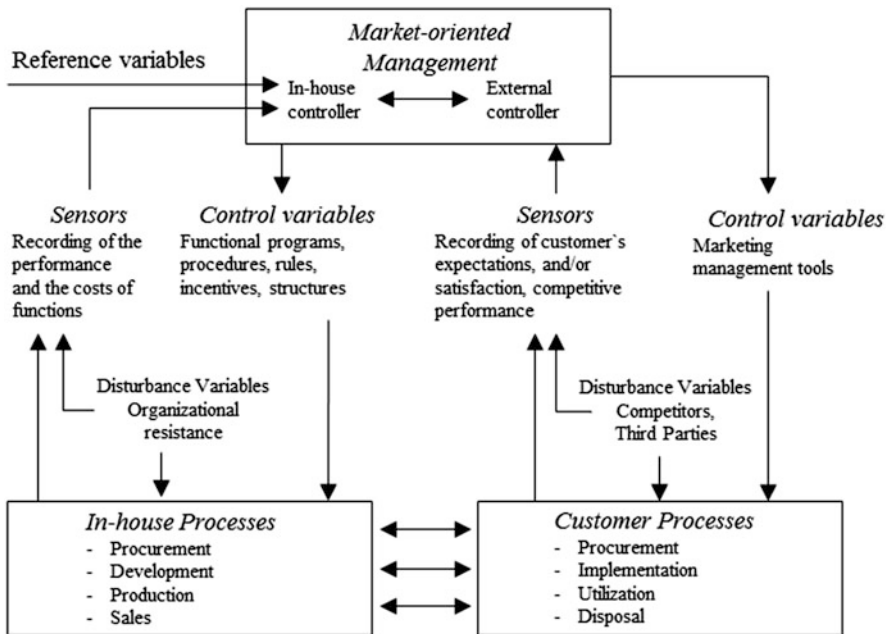


Fig. 2.27 The Janus-faced nature of market-oriented management

the market and for the firm is in one pair of hands. We find approaches of this sort in:

- Profit Center concepts for product groups and/or markets,
- Key Account Management concepts with a responsibility for profit in business relationships with important customers, or in
- The management of important orders and major projects.

The important thing for the implementation of market-oriented management is an entrepreneurial way of looking at things: the fact that a *single* responsibility exists for the entire process. The closer this responsibility is to the customer process, the more effectively is market-oriented management able to exercise its power. However, market-oriented management does not exist if responsibility for the market is decoupled from other company responsibilities.

2.3.6 Arenas of Industrial Marketing Management

If all customers were to be rated as *equal* from the firm's viewpoint in terms of their contribution and the degree of competitiveness involved, market orientation would be the same for all customers. But customers are not usually of equal value to a firm, and the degree of market orientation towards them will vary accordingly. A firm designs its *marketing programs* to serve customers depending on their importance in terms of such things as revenue, life-time value, information, reputation, and referrals, and in regard to the costs of serving them and the potential for replacing them. These programs are designed according to the type of transactions involved, which may be characterized in terms of two dimensions: the supplier's market focus and the customer's purchasing pattern (cf. Table 2.3):

First, consider the supplier's market focus. Let us imagine a zoom lens with an extremely narrow angle in order to achieve the maximum telescopic effect. In that case the focus of market orientation is on a single customer. The opposite is the case of an extremely wide angle, when all the customers in a market are in the viewfinder. What does this mean? If all customers are within the viewfinder, the same marketing program is developed for all customers. There is only one marketing mix. This is efficient but not necessarily effective, because customers are heterogeneous—to a greater or lesser extent. If a customer is the only one in the viewfinder, then a special marketing mix is designed for them, tailored as far as possible to the individual wishes and expectations of the customer. This is probably very effective but not necessarily efficient. In general, we may say that the *focus of a firm's market coverage* is concerned with the degree of standardization or customization of the tools of market management. The greater the importance and the less readily replaceable the customer is, the more readily will the firm—subject to the costs of customization—pursue its focus on the individual customer.

Second, consider the *dominant purchasing pattern*. At one extreme is the restriction of market orientation to *one* transaction, without taking into

Table 2.3 Transaction types and types of marketing

		Focus of the supplier's market coverage	
		Individual customer	Segments or total market
Dominant pattern of purchasing	One-off purchasing decision	Project marketing	Transaction marketing
	Repeat purchase	Key account marketing	Relationship marketing

consideration any associated effects. The other extreme is planning for a long-term business relationship in which market orientation relates less to the individual transaction than to a repeated exchange of values between the firm and its customer over time. The distinction is between a one-off purchase and repeat purchase and the corresponding adaptation of marketing tools.

Usually the situation is somewhere in between the two extremes described. But the two extremes can be used to indicate the different types of marketing programs firms may engage in.

Associated with each type of transaction is a *competitive arena*. What are the threats faced by the supplier? What opportunities does it see, and what objectives does it want to achieve in relation to competition? The answers differ by transaction type. It makes a difference whether the desired outcome is, for example, to secure an order in a one-off market transaction or the aim is to maximize market share in the overall market with a high degree of customer loyalty. The competitive arena is defined in terms of the supplier's perception of the competitive situation and the firm's competitive objectives, which in turn is the basis for formulating an appropriate program of action.

On the basis of the foregoing we can distinguish four types of marketing programs:

1. *Transaction Marketing*: developed for single transactions with a number of customers. Example: A carrier whose customers purchase strictly according to the criteria of price and delivery time and constantly change supplier.
2. *Relationship Marketing*: developed for repeat purchasing from a number of customers. Example: The spare parts business of a machine manufacturer.
3. *Key Account Marketing*: developed for individual customers with the emphasis on developing a long-term business relationship. Example: Subcontracting business to an OEM manufacturer.
4. *Project Marketing*: developed for individual customers with the main emphasis on meeting a particular instance of demand. Example: tendering for a greenfield factory development.

We will illustrate the different types of competitive arenas in terms of the following case study.

Case Study: André Latour Père et Fils 1771

“Something incredible has happened!” Mr. *Savigny* looked pale and worn out from lack of sleep. He looked penetratingly from one to the other of his two colleagues sitting in front of his desk. Mr. *Mons*, Sales Director of the firm of *USINES BEAUMONT*, and Mr. *Bertrand*, Technical Director of the firm, suspected that something bad was coming. “I have just learned that the order from *LATOUR* has been lost. That is the most incredible thing ever to have happened to me in my career as Managing Director of *USINES BEAUMONT*.” Then he exploded with the words: “*MMM* has got the order. Those people who have never to this day proved that they know anything about modern engineering, who have not long been in the market, yes, those very people have snatched a dead-cert order away from us, a leading engineering supplier. 15 million *Francs* is a lot of money, gentlemen, but what is even worse—I don’t have the slightest idea how this could happen!”

Director *Bertrand*, who was just as astonished as his colleague *Mons*, was the first to find his tongue. “Yes,” he said with embarrassment, “it really is too bad that we did not get this order. I gave it my closest personal attention. I did everything possible to capture the order.”

“I want to know what happened.” Mr. *Savigny* had still not calmed down. “We have supplied seven machines to *LATOUR* so far. I have been friends with the Managing Director of *ANDRE LATOUR* for years. Mr. *Vallois* is a fellow Board member of the Golf Club, he sits alongside me on the Advisory Committee of the *CAISSE NATIONALE*, the bank both our companies use—and then he does this to me! It is just not right. He just telephoned me to say he was sorry, but his Technical Director *Lapierre* together with his people was so resolved, he could not do anything about it.”

“You can’t even get in contact with *LATOUR* anymore. I tried to reach Mr. *Lapierre* yesterday and also last week, but he was not available to speak to me,” said Mr. *Bertrand*. “I did everything I could,” said Mr. *Savigny*, “I myself spoke to Mr. *Poulet*, the Commercial Director, the day before yesterday, but he only told me that it was not his responsibility. I nevertheless pointed out to him that in a business such as this it is not only the engineering which is decisive, but that the background situation must be taken into consideration as well. And I contacted Mr. *Vallois* several times about the new order, as I was just able to rescue the order for the last machine by my personal intervention with Mr. *Vallois*. What more could I have done? Do I always have to iron out the mistakes my team makes?”

Mr. *Mons* joined in: “It is, of course, a painful situation for us. We urgently needed the turnover from this order in this market segment for the coming business year so that our market share does not worsen. But it is after all in the nature of our business that one does not obtain an order for every quotation issued. We also had bad luck. We must recover the situation with the next

(continued)

orders we secure to maintain our market position. We must redouble our efforts.” “No, my dear Mr. *Mons*,” interrupted Mr. *Savigny*, “we cannot accept this serious case so lightly. I want to be clear about such a terrible event, in all its aspects. I expect you, Mr. *Mons*, to let me have a detailed report the day after tomorrow about everything that took place in connection with acquiring this order. Now please excuse me.”

One can read this report from quite different viewpoints with regard to the marketing problems it illustrates. Although we can find no information about the product, that is not important. The crucial question is where does Mr. *Savigny*, the Managing Director, see the challenge from competition. This can be considered in several ways.

1. Is Mr. *Savigny* so worked up because a fat order has been lost? Is he furious with his dozy team who did not notice that a competitor was appearing over the horizon and snatching away their order? If so, then the competitive problem is one of improving order acquisition and we are dealing with a case of *marketing for an individual project*.
2. Is Mr. *Savigny* so worked up because a long-standing business relationship with the key customer LATOUR threatens to disintegrate? Over the years, seven machines have been supplied to LATOUR after all, and there are close personal relationships between the two bosses. Thus, it is not just one order which has been lost; the loss of the entire future business with this important customer is possible. If this is the case, then the competitive problem is one of repairing and defending the business relationship. The intervention of the competitor into the business relationship is a “slip-up” that must be overcome in order to secure future business. In that event, we are dealing with a case of *Marketing in a business relationship (Key Account Marketing)*.
3. Is Mr. *Savigny* so worked up because his position in the market is at risk? Is there a threat of loss of image, followed by a loss of market share? If that is so, then the damage must be limited. It will be necessary to establish whether the competitor has a chance of getting a serious foothold in the market segment in question because it is in a position to give the customer in this market new customer advantages. The competitive problem here is to develop ways of defending the firm’s position as a market leader in this segment. Here we are dealing with *Marketing positioning with respect to the market as a whole*. As repeat purchasing dominates in machine manufacture of this type, it is a case of *Relationship Marketing* focusing on the overall market.
4. Is Mr. *Savigny* so worked up because he senses a technological challenge? Has a competitor arrived who is putting the entire business onto a new technological level? Is the very existence of the firm threatened on account of an unnoticed technological change in an important area of business? If that were the case, then a fundamental reconsideration of the firm’s situation is required to establish

whether the boundaries and the rules of the game are changing in this sector of industry. In that event, we are dealing with a case which goes beyond marketing in the strict sense. It is a problem involving the reformulation of the firm's overall strategy.

5. Is Mr. *Savigny* so worked up because the problem involves many different levels of operation? Is the whole way his firm approaches the market correct? If that is so, then we are dealing with a problem of reviewing and reformulating the competitive strategy including an *integrated marketing strategy*.

In sum, we can say that market orientation differs according to the type of competitive arena in which the competition is defined. We have defined four basic types of competitive arenas that shade into one another, but which enable us to identify typical situations shaping market orientation. These four basic types enable us to classify different types of the marketing planning processes.

2.3.7 Conclusion

We can now summarize what we mean by marketing as a management task. In line with the analysis of the market process, we can state that marketing management comprises all the planning, coordinating, and monitoring processes intended to ensure that the firm's objectives, in the relevant competitive arena, are achieved. As the competitive situation can threaten the existence of the supplier, marketing is, ultimately, a strategy for survival.

We have seen that the precondition for survival in a competitive market is to attain positions in which the supplier possesses a sustainable competitive advantage. The firm secures such a position through cost, time, and benefit advantages. The mission for market-oriented management in this context is unambiguous. The strategic decision determines the competitive position sought. The marketing management concept concerns occupying and holding this position, i.e., it must establish the external control loop and then integrate the in-house and external control loops in such a way that the desired position is attained and maintained. It therefore becomes clear that market-oriented management has a direct connection to the strategic decision, but that it itself adopts a midway position between the strategic and the operational level and between the focus of the business and the functional focus.

Exercises

1. Can we apply marketing management concepts to other types of human interaction than market exchanges? For example, do they apply in the case of religion, family relations, or politics? Are there any problems with such an application of marketing tools in these areas?

2. How do we determine the relevant markets for a firm? What is the difference between a market and a sector of industry?
3. What are the problems associated with a product-based definition of the relevant markets?
4. Characterize the stages of development of market orientation.
5. What are the characteristic features of a customer-oriented firm?
6. Why can customers be described as a “vital resource” of a firm?
7. Explain the distinction between the terms “market orientation” and “customer orientation.”
8. Outline the different forms of market orientation.
9. Describe the phases of the marketing process.
10. Describe the closed-loop control system of marketing management.
11. Describe the dual closed-loop control system of market-oriented management.

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Michael Kleinaltenkamp

This chapter describes the main characteristics of business-to-business markets, including value chain systems and derived demand and how these affects marketing management in firms. Four types of business-to-business markets are distinguished: production goods; capital goods; system technologies; and business services. The final section describes the main dimensions of business-to-business marketing that are addressed in the subsequent chapters.

3.1 The Nature of Business-to-Business Markets

3.1.1 Business-to-Business Markets as Interlinked Value Chains

All goods and services are produced for the purpose of consumption at the end, but the days when people actually consumed self-produced goods are long gone. Instead, modern economies are characterized by a division of labor, with several market stages between original production and consumption in which different manufacturers/producers, processors, retailers, and service providers are engaged. All of these areas in which products or services are sold not directly to consumers built the area of business-to-business markets. Business-to-business marketing is thus dealing with markets in which goods and services are purchased because they are used as capital, material, or service inputs into the production of other products and services. This also includes forms of business-to-business retailing where products are bought and resold in more or less the same form. Business-to-business marketing thus refers to all marketing and sales processes aiming at firms or other types of organizations, including government. According to that, the distinction between business-to-business and consumer marketing is not based on the types of

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goods sold but on the customers addressed. In some cases even the same products and services may be sold to individuals and households as well as to firms and other organizations, e.g., cars, office supplies, laundry services, accounting, and financial services.

The business-to-business sector plays a major role in the global economy. In Table 3.1, the total transactional volume of the distinct national economies in the year 2000 is displayed. With a volume of 19,356.02 billion Euros, the USA clearly ranks on top followed by Japan with a total transactional volume of 9,821.61 billion Euros. Yet, those two countries with the highest amount of total transactions reveal the least share of business-to-business production compared to the total production figures: The USA exhibits a business-to-business share of only 50.16 % while Japan's business-to-business share of the total production achieves 59.5 %. On the contrary, the average share of business-to-business production of all other countries shows far higher values ranging from around 70 to 80 %.

As all buyers in business-to-business markets are sellers in their own markets, the consequence is that demand here always is *derived*, i.e., it depends on downstream buying decisions and/or trade stages possibly going back to the initial demand of the end consumers (see Fig. 3.1).

Marketing processes in business-to-business markets are therefore characterized by an interconnection of value chains: the value chain of the vendor on the one hand and the value chain of the customer on the other hand.¹ The resultant effects can be shown with the help of Porter's value chain model (2004). The basic thought of the concept is that each company can be considered as an accumulation of processes. All functions such as research and development, production, logistics, sales, etc. make a contribution to the achievement of company purposes with the help of the conducted activities (see Fig. 3.2). These activities are classified into primary and supporting activities: Primary activities include the production of a product or the preparation of a service, sales, delivery, and customer service. Supporting activities assist by obtaining and providing the required inputs, technologies, and human resources as well as by creating the necessary infrastructure. From the viewpoint of this concept, a company achieves a profit if the attained value of the company activities exceeds the costs of the individual functions regarding the deliverables processes at the market (see Fig. 3.2).

As there is a connection of value chains between vendors and suppliers in business-to-business markets; consequently, on both sides the value and the costs of activities can change. This applies, at first, for deliveries and services of a vendor regarding the value-creation processes of the customer:

- The installation of an investment good such as a machine tool redesigns the production process of a customer firm. This can result in a quality increase, which means an increase in value of the products and/or an efficiency increase which in turn may lead to a cost reduction.

¹ Cf. Sect. 1.4.

Table 3.1 Share of B2B and B2C production in several countries (Source: Frauendorf, Kähm, & Kleinaltenkamp, 2007, p. 15)

	Belgium	Germany	Finland	France	Italy	Japan	Netherlands	Austria	USA
Production in total	540.43	3786.4	319.55	3163.07	2184	9821.61	759.48	369.63	19356.02
B2C production	129.08	1082.33	52.63	743.5	695.33	3977.64	194.64	103.6	9647.08
B2B production	411.35	2704.07	266.92	2419.56	1488.88	5843.97	564.84	266.02	9708.94
% share of B2C production	23.88	28.58	16.47	23.51	31.83	40.5	25.63	28.03	49.84
% share of B2B production	76.12	71.42	83.53	76.49	68.17	59.5	74.37	71.97	50.16

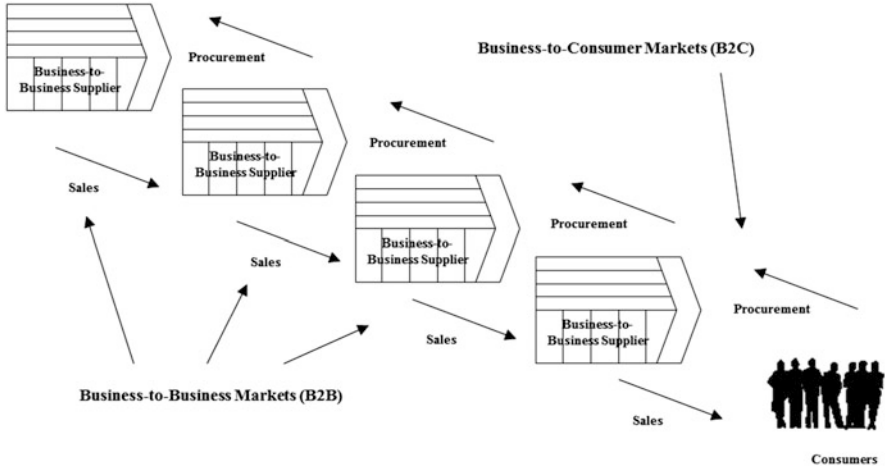


Fig. 3.1 Derived demand in business-to-business markets

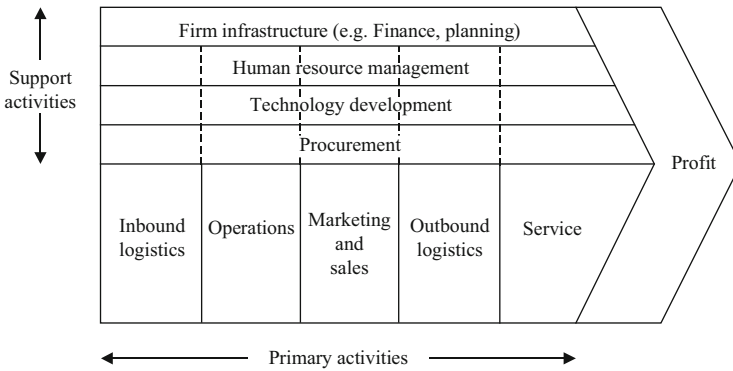


Fig. 3.2 Value chain (Source: Porter, 2004)

- The delivery of production goods such as raw materials, ingredients, etc. can significantly influence the effectiveness and efficiency of a value-creation process, for instance if a better processing of ingredients accelerates the production processes or the use of another raw material obtains a higher quality of the resulting products.
- An externally procured service such as a commercial cleaning service, a consulting service, payroll accounting, etc. normally replaces a firm’s internal services processes. This leads to cost reductions and/or effects increasing effectiveness for the company to whom the service is delivered.
- The same is true for the implementation of a system technology for a customer, for instance, an office communication system. Thus, the process flow of a

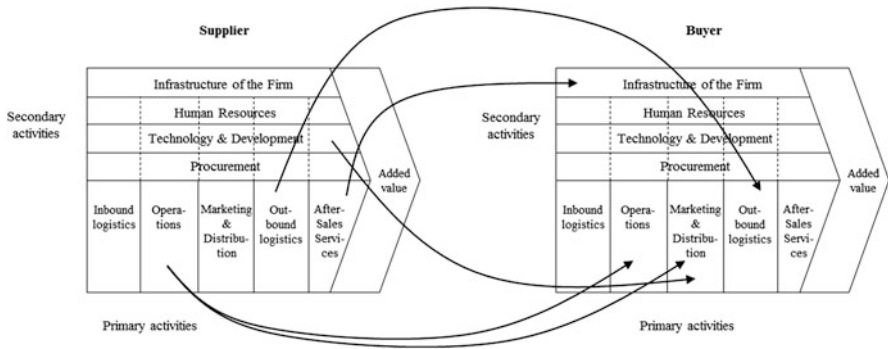


Fig. 3.3 Interconnection of the value chains of a customer and a supplier

customer's company is restructured regarding primary and supporting activities. Consequently, there is an influence on effectiveness and efficiency, too.

Therefore, by the delivery of its products and/or services a vendor firm intervenes in the value chain of the customer company and influences its possibilities to obtain competitive advantages (see Fig. 3.3).

As business-to-business customers act in turn as suppliers on their own markets, they are subject to the prevailing competition there. In order to be successful, it is necessary for vendors active in business-to-business markets to be aware of how their own products and services contribute to a competitive advantage for the customers on their markets. The more a supplier firm supports a customer in achieving a competitive advantage on its own market,

- the bigger are the advantages it provides to the customer
- the higher is the effectiveness and
- the more the total value of activities of its own value chain increases.

However, due to the evolving nature of the market process such competitive advantages gained are exposed to a permanent danger of erosion and thus of losing their value. Therefore, it is important for vendors in business-to-business markets to understand which forces drive changes happening within the value chain systems they are active in.

3.1.2 Changes Within Business-to-Business Value chain Systems

One major characteristic of developed economies is an increasing demand for tailored consumer goods, a trend that most probably is going to continue (Piller, 2003) and that has led to constant differentiation of products. To what degree this has been caused by highly individualized consumer demands or has been encouraged by marketing and sales strategies is a matter of debate. In either case,

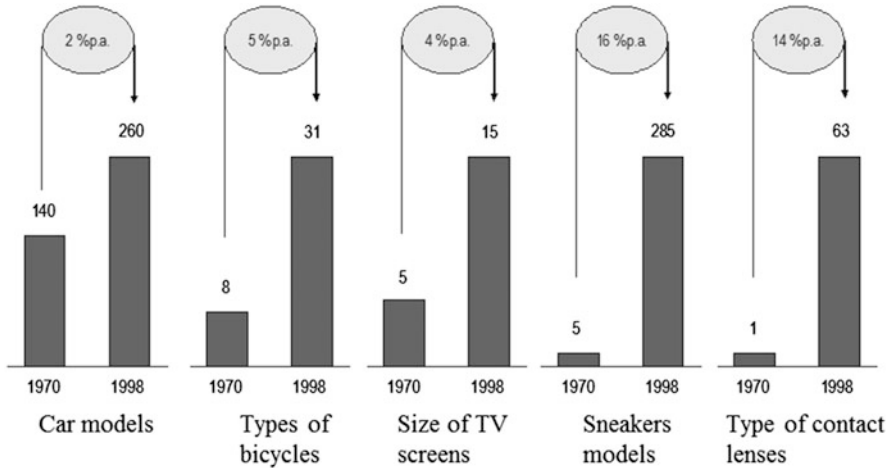


Fig. 3.4 Growing product variation in the consumer goods business (Source: Cox & Alm, 1999)

it has divided markets into smaller and smaller segments and resulted in a corresponding diversification of goods offered. Initially, this process meant offering larger numbers of models and variations—a development for which the automotive industry may serve as a prime example. For the last 40 years, the number of auto types per model has increased by five to eight times. Similar developments may be observed in other industries (see Fig. 3.4).

A second development goes even a step further. This trend is frequently referred to as *mass customization*. This means that a *large number* of consumers are offered products tailored to their demands. Products then range from the *match-to-order* or *locate-to-order* variety—i.e., they assist the customer in selecting standard products—to the *make-to-order* variety, in which an offer for goods/services is tailored to individual requirements (see Fig. 3.5). Such forms of mass production may currently be observed in cars, clothing, shoes, cosmetics, kitchens, media products, and vitamin pills, among other products (Tseng & Piller, 2003).

In the most cases, the offering of customized consumer goods was and is primarily aiming at an increase of revenues. In tailoring products to customer requirements, sellers intend to exploit their customers' willingness-to-pay, to increase customer satisfaction and thus improve customer lock-in, and finally to improve their position in the overall price competition. Still, this development results in non-negligible costs, although often overseen in practice, primarily those of complexity. To customize products and/or services, it is necessary that customers' needs or wishes are specified and transferred into the seller's value chain as new elements (Kleinaltenkamp, Ehret, & Fließ, 1997). This has a significant effect on the division of labor and thereby on the value chains in question.

Already Adam Smith (1876) pointed out that a higher degree of division of labor lowers production costs while increasing output. At the same time, this increase also requires a higher amount of coordination and cooperation activities among the

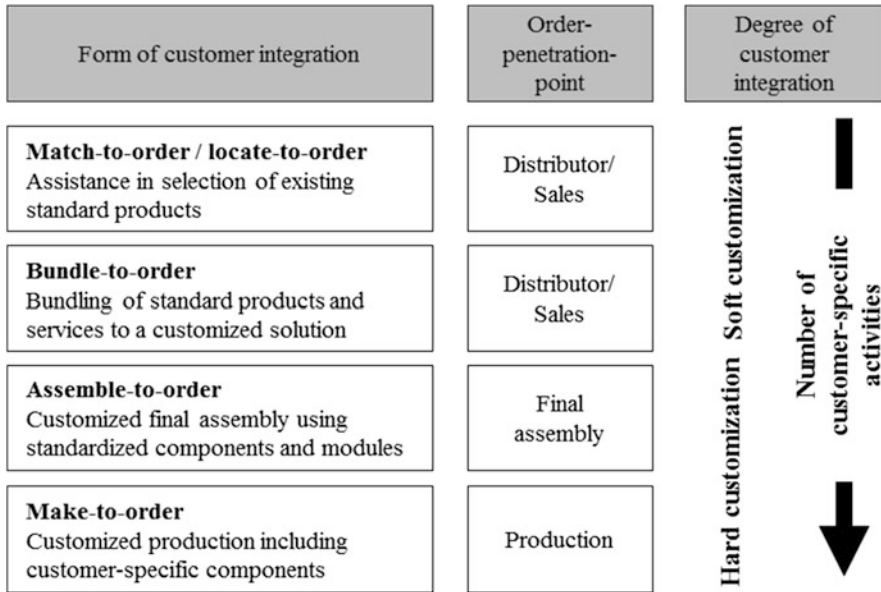


Fig. 3.5 Types of customization (based on: Tseng & Piller, 2003)

different performers be they individual workers, corporate divisions, or entire organizations, which typically results in an increase of overall costs (Tseng & Jiao, 2001, Urbani et al. 2003). The more specialized the actual processes and process operators, the higher the resulting costs of coordination. This is shown in Fig. 3.6: While production costs fall with the increased division of labor, costs of coordination grow. The highest point of cost efficiency in the labor division (D^{opt}) is therefore located at the point where the mathematical curve (total costs of production and coordination) reaches its minimum (C^{min}).

But if costs of coordination actually do increase with higher customization, the cost-of-coordination curve shifts to the left (provided costs of production are unchanged), which eventually shifts the overall cost curve to the upper left quarter. As presented in Fig. 3.7, this equals an increase in overall costs and a shift of the optimal degree of the division of labor from D^{opt} to D^{opt} .

Due to price competition, the increased costs resulting from customization are rarely acceptable for the average manufacturer, since they will hardly be compensated for by increased revenues—even if we assume higher prices can be achieved due to the customized offer. Two ways of solving the problem are possible:

The first solution involves a lowering of the costs of coordination, a process normally undertaken with the help of modern information and communication technologies. This shifts the cost-of-coordination curve back to the right, suggesting that despite a high degree of customization the curve indicating overall

Fig. 3.6 Cost development depending on degree of division of labor

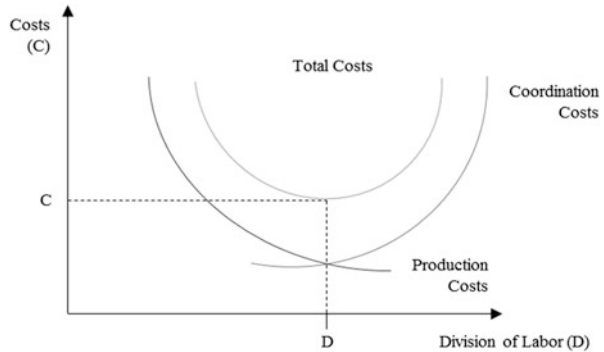
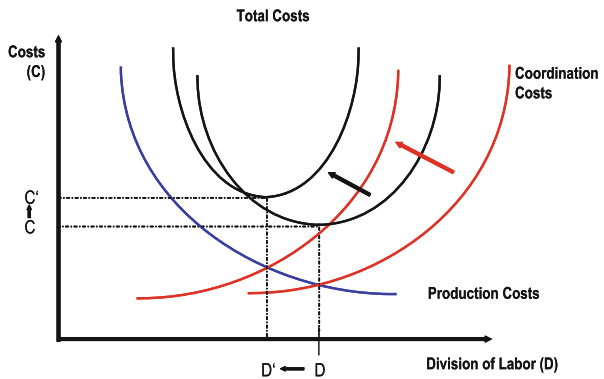


Fig. 3.7 Effects of diversification on costs and division of labor

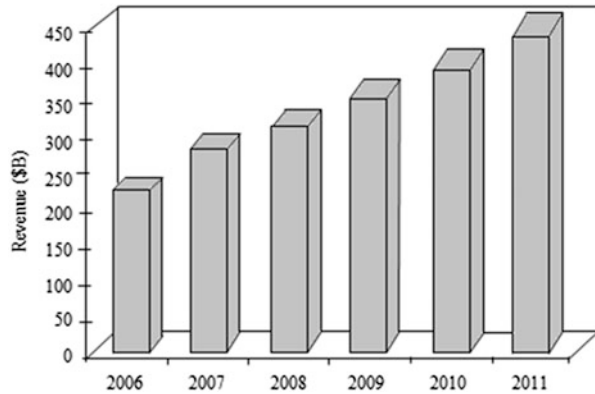


costs may be returned to its previous level or even a lower one (see Fig. 3.7). A few examples may demonstrate this development:

- Due to a considerable increase in its variety of models, Volkswagen's required stock for spare parts increased from 280,000 articles in 2003 to 380,000 in 2008. For this reason, a new Original Parts Center (OPC) was installed, in which up to 70,000 deliveries may be executed daily and from where auto shops may be serviced 24 hours a day. This has been made possible with the help of mobile data communication, i.e., all order entries are recorded by stationary or mobile bar-code readers, all employees are equipped with handheld mobile terminals, and all vehicles with wireless communication systems (Donnerberg, 2003).
- In many e-business applications (media ordering, travel booking etc.), configurators are used to help customers select and plan their desired products or services. At the same time, the costs of information transfer and coordination of delivery are reduced.

A second solution for reducing costs despite an increased degree of customization is to redesign division of labor in a way that lowers coordination and production costs. This is only possible if significant areas of value creation can be shifted

Fig. 3.8 The worldwide market for electronic manufacturing services (Source: Electronic Trend Publications, 2007)



to less expensive suppliers without increasing—and perhaps even by decreasing—the costs of coordination. Again there are several business examples:

- The nominal level of vertical integration in the German automobile industry has fallen permanently over the last decades, and it is assumed that this development will continue (Oliver Wyman & Verband der Automobilindustrie (VDA) (VDA), 2012).
- Suppliers of electronic products such as mobiles, computers, handhelds, and game panels have also begun to outsource large sections of their production to companies in the so-called electronic manufacturing services. Thus, the total worldwide turnover of these companies increased from \$240 billion in 2006 \$450 billion in 2011 is (see Fig. 3.8).
- Large enterprises in the food industry have outsourced a significant part of their production.
- Hardly any supplier firm in the consumer goods industry runs its own transportation fleet. Transportation and accompanying logistics have been taken over by specialized service providers, often in the form of full-service solutions.
- Companies in the tobacco industry are currently considering outsourcing their production to suppliers of the machine equipment.
- Fashion and cloths designers like *Adidas*, *Escada*, or *Nike* have reduced their vertical level of integration down to zero.

These and many other examples demonstrate that enterprises in the consumer goods industry are increasingly focusing on their core competencies, primarily in the areas of product development and marketing. Nearly all other operational areas are being outsourced to other organizations.

3.1.3 Effects on Value Chain Systems in Business-to-Business Markets

Due to these trends in the consumer goods industry, we note two main spillover effects affecting business-to-business markets:

- Production moves from the consumer goods to business-to-business markets.
- The question of the optimal division of labor in relation to the changed market conditions gains significantly in importance.

Since suppliers take over bigger shares of valuecreation, they are forced to discover new and more optimal forms of division of labor (upstream). Usually, these forms result in the further outsourcing of value-creating activities (Varadarjan, 2012). Suppliers have started referring to themselves as 1st tier-, 2nd tier-, 3rd tier suppliers; in logistics; there are Lead Logistics Providers (LLP) relying on the services of Third Party Logistics (TPL) or even Fourth Party Logistics (FPL).

A first observation to be made regarding the new value chain systems is that value-creation processes, originally of an industrial nature, have turned into services. Often this means that sellers in business-to-business markets start supplementing their products with services (Boyt & Harvey, 1997). In the meantime these industrial services, which are offered prior to, during, and after sales (presales, at-sales, after-sales) became numerous (see Fig. 3.9).

Thus, it is probably not surprising that different types of industrial-service providers have emerged. Their spectrum ranges from simple packagers, who supply their customers with own and related products, to operators who, except in the area of marketing, assemble vital value-adding tasks for their customer (see Fig. 3.10).

The term operator may already suggest that the service offerings of industrial manufacturers are becoming detached from their original product offerings. So the operation of a power plant has, for example, little to do with the production of its components and systems. In business-to-business markets, such product-related services have been and will be offered not only by the product manufacturer but to a large extent as a separated service by pure service providers. Prominent examples are services for the telecommunication industries, i.e., electronic data aggregation and processing, logistics, the leasing business, and the various consulting services, such as legal, tax-related, and business consulting, which are all chiefly performed for private and public institutions rather than consumers.

As a result, sellers in business-to-business markets have started to take over more and more value-creating processes of their buyers, thus becoming providers of service, which may be sold individually or together with the product. This has a major impact on the structure of many countries' economies. In 2010, the gross value added of the service sector in Germany represented 71.2 % of the total gross domestic product (GDP) whereas the share of the two other sectors only was 27.8 % (manufacturing industry) or 1.0 % (agriculture and forestry). In other OECD countries, the development of the service sector took the same direction, while in

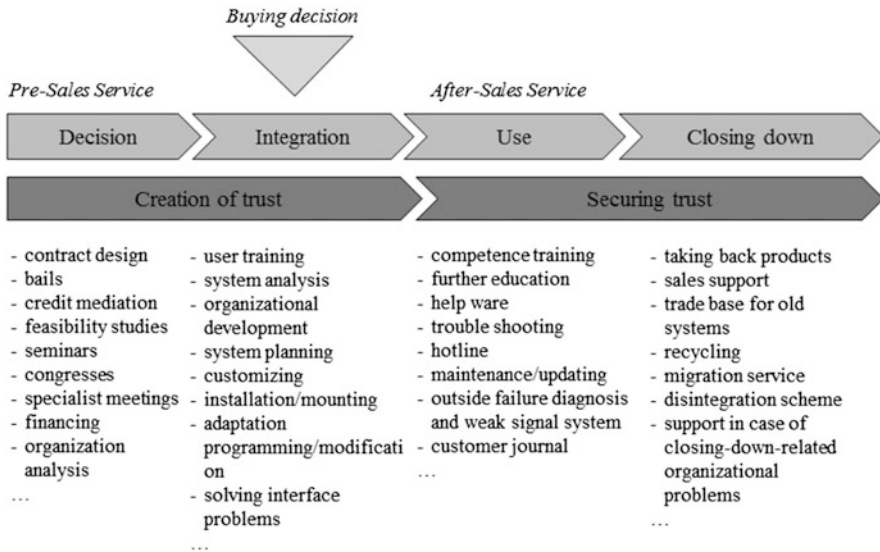


Fig. 3.9 Elements of a complementary service system (Translation of Wimmer & Zerr, 1995)

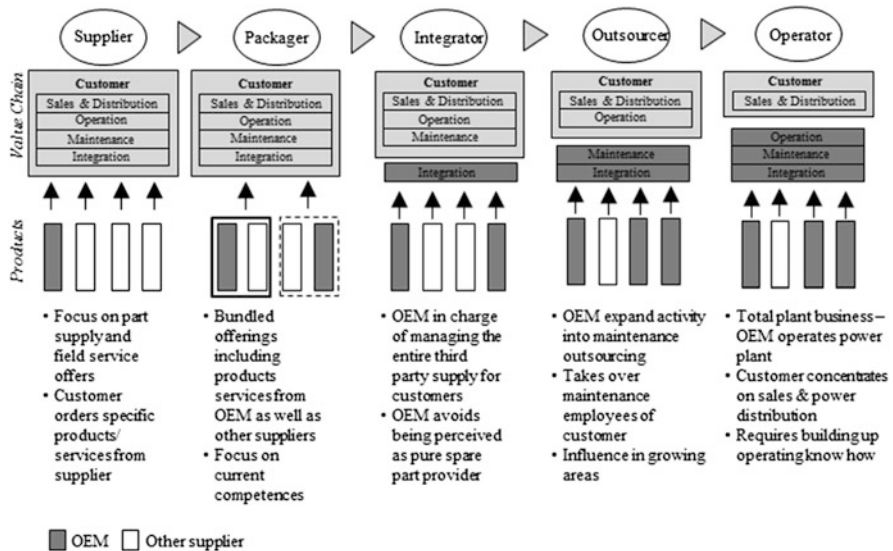


Fig. 3.10 Types of industrial-service providers (Source: Monitor Group, 2003)

some of those (e.g., U.S.A., UK, the Netherlands, France) the importance of the service sector is even higher. Table 3.2 gives an overview on the different shares the service sectors hold in different developed countries.

Table 3.2 Share of sectors in several countries in 1970 and 2010 (Source: Statistisches Bundesamt 2009, p. 11, 2011, p. 685)

Country	1970					2010				
	Agriculture and forestry	Manufacturing industry	Services	Agriculture and forestry	Manufacturing industry	Services	Agriculture and forestry	Manufacturing industry	Service	
Australia	8.0	36.4	55.6	3.3 ^a	21.6 ^a	75.1 ^a				
Austria	18.9	40.3	40.5	5.2	24.9	69.9				
Germany	8.4	46.5	45.1	1.6	28.4	70.0				
Japan	17.4	35.7	46.7	3.8 ^a	27.7 ^a	67.3 ^a				
Spain	29.5	37.2	33.4	4.3	23.1	72.6				
UK	3.2	44.8	52.0	1.2	19.1	78.9				

In %

^aNumbers from 2008

Contrary to popular belief, the majority of these services are actually not performed for consumers. A closer analysis of customer profiles in the different service industries shows that most services today are sold and delivered to other companies and that they are therefore part of the business-to-business market.

Statistically, the shift towards services has not even been fully assessed. If, for example, we were to examine which tasks are performed by workers in the processing industries, we would observe that their work has equally shifted towards services. Today, about 70 % of workers in the processing industries are involved in either internal or external services, and a continuation of this trend is to be expected. By the year 2010, the percentage of workers involved in producing goods in Germany was expected to have dropped to 12.7 %. The remaining workers carry out internal or external service-related tasks (Institut für Arbeits- und Berufsforschung, 2007).

The question that now arises is how such modern value chain systems emphasizing on services differ from the traditional, product-oriented ones. The major difference is as follows: whereas the previously predominant mass production needed no direct customer involvement, the services cannot be provided without such direct involvement (Kleinaltenkamp, 2007).

In order to produce services, the service buyer has to deliver informational inputs—i.e. special information offered to the service provider/seller that need to be integrated into the value-creation process for a limited time and without which the service in question cannot be performed. Such information may refer to:

- The nature of the customer or of the customer firm's personnel (for example in the case of an educational or training service)
- Objects, such as machines that need to be repaired or buildings that need to be cleaned
- Plants and animals to be cared for by an external service provider
- Legal rights that may be claimed by the service provider, e.g. a lawyer
- Nominal goods handed to a bank or company with the aim of gaining interest earnings;
- The information to be processed in the case of an advertising agency or consulting firm.

Production involving the integration of the customer (see Fig. 3.11) thus has the following characteristics (Kleinaltenkamp, 2007):

- The basis of the production is the performance potential of the selling firm, which consists of its resources (people, installations, materials, know-how, etc.). With their help,—i.e. prior to any order, simply based on speculation—the seller is ready to perform (e.g., produce semi-finished and/or finished goods).
- External resources of individual customers are then integrated into the value-creation process and the actual goods are produced.

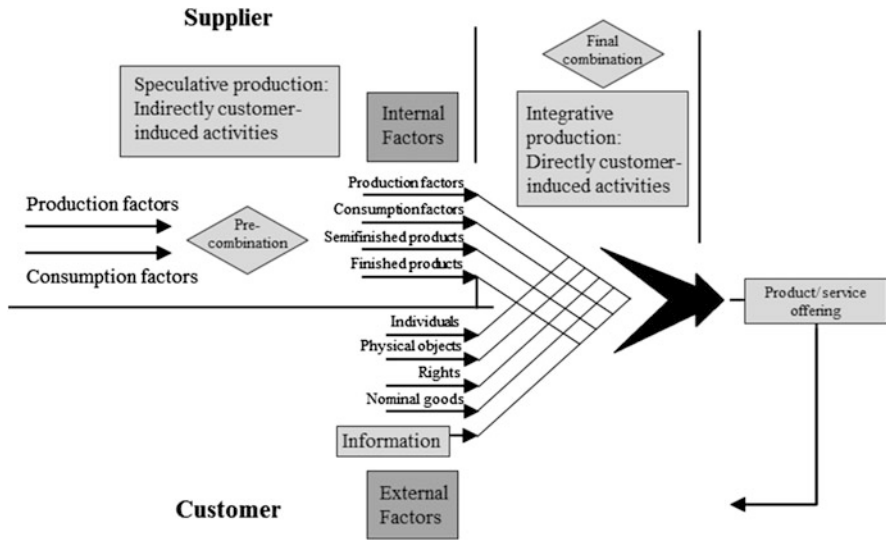


Fig. 3.11 Elements of the preliminary and final combination of factors (Source: Kleinaltenkamp, 2007)

- Finally, the customer firm receives a product and/or service that is a combination of various sub-elements established to varying degrees through the integration of its own resources.

The more customer specific a seller's value-creation processes is the higher is the need to adjust the supplier's own value chain. This degree of customer integration and adjustment is the major factor affecting the division of labor in business-to-business markets and the physical distribution of value-creating activities (Kleinaltenkamp, Ehret, et al., 1997).

This has far-reaching consequences for the choices offered by suppliers active in business-to-business markets. Here, the customers' decisions regarding their own proportion of value added shape the possibilities that emerge for the suppliers to take over value-creating processes that the customers themselves do not wish to handle themselves. In this way the possible needs of a customer depends on its make-or-buy decisions. In order to understand this better and thus make it a basis for one's own market actions, we need to grasp the driving forces underlying the customer's various outsourcing decisions.

3.1.4 The Effects of Customer Integration on the Division of Labor in Business-to-Business Markets

The question of whether a value-creating activity may be outsourced depends mainly on two things (Kleinaltenkamp, Jacob, & Leib, 1997):

- First, on whether the activity is directly customer induced (and thus part of the final production) or rather serves to maintain the supplier's readiness to perform (and is therefore to be assigned to the speculative, preliminary combination of resources)
- Second, on whether the value-creating contribution can be procured in a more or less standardized form from an upstream market or rather must first be tailored to meet the specific requirements of the customer/buyer in question.

Since all activities that are directly customer induced have an immediate influence on the advantages sellers have to offer to their customers, the quality of their implementation strongly determines customer satisfaction and, consequently, the sales figures. The process-related know-how necessary for implementation thus normally represents a valuable asset that a seller either does not gladly pass on at all or only to a very limited extent. There is only little economic advantage to be gained by a shift in process design; mostly, it requires large investments (particularly so where information and communication technology are concerned). The result is that directly customer-induced activities are rarely outsourced. Their contribution to higher customer advantage seems to be greater than the potential savings gained through outsourcing.

In contrast, activities that help to create and maintain the corporate performance capabilities basically have a higher outsourcing potential. They do not directly influence the offered service quality, but rather affect a company's overall efficiency. Here, economic advantages through outsourcing are dominant.

But whether a certain value-creating activity is actually being carried out by another firm not also depends on whether, and to what extent, a suitable problem-solution exists. Although there are now outsourcing offers for virtually every business process, it still makes a difference whether the activities in question must be or simply may be carried out in a customized or standardized way. If an external partner is to render a customized service, this firm will have limited possibilities to take advantage of economies of scale and synergy. If, however, it offers standardized services (in other words, more or less the same kind of services for a number of different customers), such advantages may be enjoyed and passed on as price advantages to the customer. Whenever value-creating activities can be outsourced in a form that is standardized, it can be expected that the positive influence of the outsourcing option on the efficiency of the outsourcing enterprise will be enhanced. This often applies to activities involving the firm's potential to perform, since these are not directly influenced by the customer and may be better planned and thereby more easily standardized.

The result, if both considerations are combined, is shown in Fig. 3.12: Companies usually outsource value-creating activities that serve the preliminary combination of resources—i.e., creating and maintaining performance potential—and will most likely continue to do so. This is increasingly the case as these activities are becoming more standardized or as they can become standardized (quadrant 1). A company is generally less likely to outsource activities undertaken in the final value-creation process, especially if there are no standardized solutions

Fig. 3.12 Outsourcing of value-creating activities depending on type and character (Source: Kleinaltenkamp, Jacob, et al., 1997)

		Character of Value Activity	
		Standardized	Customized
Type of Value Activity	Pre-combination (speculative)	(1) Strong tendency towards outsourcing	(3) Outsourcing only if profitability is not decreased
	Final combination (customer specific)	(2) Outsourcing only if performance and quality are not decreased	(4) Low tendency towards outsourcing

available (quadrant 4). Furthermore, if an offer for external implementation promises a considerable reduction in costs, a seller can be motivated to outsource certain value-creating activities from the final value-creation process (call center services would be an example.) In this case, however, assurance is needed that outsourcing will not impair the quality of the service offered or that economic advantages are going to compensate or overcompensate these effects (quadrant 3). Finally, highly specified activities in the preliminary combination of factors are outsourced when the resulting cost increases (due to customization) will not outweigh the cost advantages (quadrant 2). This is often the case with specific logistical solutions.

3.1.5 The Effects of Customer Integration on the Regional Distribution of Value-Creating Tasks

A general conclusion that can be derived from this discussion is that standardized goods are primarily outsourced to upstream market stages. The buying and selling of such goods tend to require low coordination efforts, so that seller and buyer need not necessarily be in each other's proximity. Finally, the physical distribution of these value-creating activities is determined by the cost of logistics. There is a tendency to physically outsource mainly traditional forms of industrial mass production to locations where their production costs are lowest—provided these targeted costs are not consumed by the resulting costs of logistics. As this trend allows logistics providers to achieve cost advantages, the radius within which the outsourcing of such tasks is economically sensible is constantly growing. It is thus

not surprising that freight traffic in Germany is expected to increase in transport kilometers (per ton kilometer) from 169.9 m in the year 1990 to 485.0 m in the year 2015 (Verband der Automobilindustrie e.V., 2002). Due to the standardized character of the goods, there is basically no threat of increased costs of coordination.

In sum, those changes within the business-to-business value chain systems allow the assumption that the shift from sectoral to functional/regional specialization (Duranton & Puga, 2001), i.e., the physical distribution of management and administrative tasks carried out in city regions and the standardized production activities in rural areas, will continue. The increasing use of information and communication technology will accelerate rather than slow this process. In the majority of cases, this technology will be employed to reduce the costs of coordination incurred through customization. Actually, the technology itself will have to be configured in a customized manner—with the result that providers of information and communication technology will concentrate their management and administrative activities close to the location of their customers. If information and communication technology solutions contain standardized components (i.e., for software programming), their production can be physically outsourced, just as in the case of traditional production processes. This tendency is reinforced by the fact that the results of such activities often take a digital form and can therefore be transported at low costs over wide distances.

3.1.6 Consequences for Business-to-Business Marketing

The increasingly individualized offers for goods/services on consumer goods markets have led to heightened complexities for the seller and resulted in higher costs of coordination. To avoid or reduce these costs, organizations in consumer and business-to-business markets are outsourcing value-creating tasks to upstream providers/sellers. This means that companies need to know or decide what their core competencies are, i.e., those competencies that should not be outsourced.

At the same time companies handling those outsourced activities have discovered and developed new business opportunities. Various options are feasible and can be observed—for example, previous upstream product suppliers who extend the range of their offerings or new service suppliers who emerge, concentrating on the processes that have just been outsourced. Eventually, these companies as well will have to decide which of their new activities are going to become part of their core competencies and which not. They may in fact also come to reorganize their value chain and outsource certain activities or processes to another set of partners.

As a result of the mentioned coherences, different basic strategic alternatives are available for a vendor in the business-to-business field:

- First it should be determined if a company wants to be active on only one or on several stages of value chain.

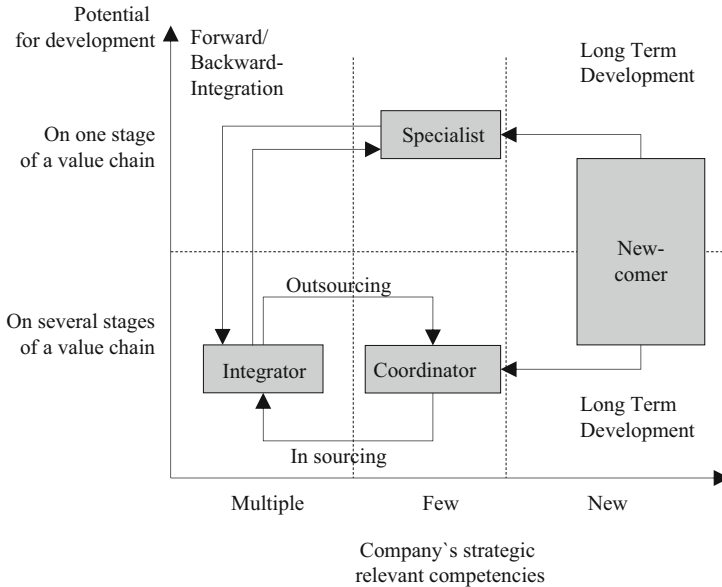


Fig. 3.13 Strategic options for suppliers in business-to-business markets (based on: Daecke, Schächer, Mei-Pochtler, & Heuskel, 1998)

- Second, it should be determined if this company must be proficient in just a few or in multiple areas of competencies in order to make a successful offer of the products and services in question.

These options may be different depending on whether or not the company is already active in the market or is a newcomer who wants to enter the market. Figure 3.13 shows a combination of the mentioned alternatives.

One possibility is to act as a *specialist* concentrating on a specific stage of a downstream value chain. In this case the vendor only needs a limited number of competencies.

A second possibility is that a company can broaden its field of activity by integrating or connecting different stages of a downstream value chain:

- First, this can happen if the company acts as an *integrator* of a high concentration of the added value. This requires that the company in question must possess a corresponding number of competencies.
- Second, rather than implementing the tasks in question itself, the company co-ordinates the earned processes of other companies as a *coordinator* so that in total a corresponding offer is created. For this kind of business activity only a few competencies are necessary, one example of which is project management.

The strategic determinations do not necessarily have to be considered as statistic because the above-mentioned changes regarding the value chain structures on consumer goods and business-to-business markets can make an adjustment necessary in the one or the other of the directions mentioned. Thus, an original specialist can become an integrator by adding further value-added activities by means of a forward or backward integration. An integrator can become a specialist by concentrating on certain value-added activities which means the abdication of rendering certain processes. Furthermore, integrators and coordinators can become representatives of the individual other category by outsourcing and in-sourcing of processes. Finally, there are always new vendors as competitors on the markets in question caused by the drafted changing processes.

In summary, the interconnection of value-added processes of different vendors presents the dominant characteristics of business-to-business markets. In order to be competitive, all vendors in this area must support their customers in the management of their value-added activities so that they can act successfully on their own markets. At the same time, the requirement results that the following value-added structures are to be analyzed in order to draw consequences from the changes for (new) direction of its own added value.

Moreover, if the decisions of the direct customers depend on their own orientation towards the value-creation structures of the customers' customers, one significant factor involved in the success of marketing activities emerges: the decisions of this group need to be influenced in such a way that there is a demand for the direct customers' own products and services.

Such multistage marketing involves all sales-related measures aiming at the market stages (customers of the customer) that follow one or several direct customers (Kleinaltenkamp, Rudolph, & Claßen, 2012). A multistage sales strategy thus always targets at least one subsequent market stage. It can, however, also comprise several stages. The target groups of multistage marketing can be made up of all processing and trade stages which follow the direct customers, down to the stage of the final user. It should be additionally taken into consideration that decisions to purchase are not only made by the organizations or individuals within the direct processing chain themselves. In the different stages, the influence of other individuals or organizations within the environment of the market stage can take effect.

In a multistage marketing plan, an individual marketing mix is made for each stage or target group that a seller is considering which takes the interests of its customers into account. In this way, all relevant sales stages are tied into one compact and comprehensive marketing strategy. Finally, the method of approach is aimed at transforming adversary market relations between the stages into a more cooperative form. All market stages should be in the same boat, so to speak, and each stage should make its own contribution to a vertically coordinated strategy.

In order to achieve the desired effects of a multistage marketing strategy, it must, however, be clear to customers in downstream market stages that the upstream goods and services are of significance for their own competitiveness and that they can influence their own profit. If there is no awareness of this connection among the

customers, or if it is not made clear to them, then multi-stage marketing loses its purpose and is doomed to fail.

3.2 Areas of Business-to-Business Marketing

Against the aforementioned background, different practical areas of business-to-business marketing can be distinguished. Typically, four groups of products and services that are sold in business-to-business markets are mentioned in practice:

- Production goods, including materials and components
- Capital goods
- System technologies
- Services

3.2.1 Marketing of Production Goods

The term *production goods* refers to all consumable goods and related services that are purchased and processed by firms and other organizations. Production goods may be grouped into five types:

- *Raw materials* as the output of the primary sector: This includes all unprocessed agricultural commodities and forestry products such as grain, cotton, raw sugar, natural rubber, and wood; basic mineral products such as iron ore, rock, and soil, as well as natural energy resources such as water, coal, oil, and gas. The marketing of raw materials is closely linked to the places where they are produced, which may be highly concentrated on the one hand but also dispersed on the other. From their place of production, raw materials are delivered to diverse industries, often on a global basis. Furthermore, because of their importance to an economy, raw material industries tend to be politicized and, as a result, governmental authorities often play an important role.
- *Semi-processed and processed materials* that are the basis for further production processes: Examples here include petrol, refined sugar, cement, rubber, steel, etc. This sector is heterogeneous, because products can be processed to different extents. The variety is greater also because of the amount of forward integration of producers. Many producers process materials for their own further use and supply materials processed to varying degrees. Less integrated processed materials also form parts of final products, such as lacquers, glue, and catalytic converters. The suppliers of these types of processed materials are often the same as those involved in other material processing especially when they are the joint outcome of the same production process.
- *Operating materials* that form no part of the final product, but are important in maintaining the production process: Examples here include oils, lubricants, cooling materials, and repair materials. This sector comprises different types

of customer industries, and the economic importance of operating materials can vary from insignificant to cases in which it has an important impact on the effectiveness of the production processes.

- *Components* that are installed as part of other products during the customer's production process, with little if any further processing: Components maintain their identity in the final product. The range of types of components is very broad, varying from simple products such as screws and nails to complex technically demanding products such as clutches, integrated circuits, pumps, or complete modules, such as car components. Buyers of components are original equipment manufacturers (OEMs) that use them to create a total system or product. Components are sold to end users, to trade outlets and to technical repair and maintenance centers, where they are used as replacement parts or as additional components.
- *Energy sources*, which are used in all production processes.

It is important to remember that such product offerings are typically accompanied by various technical and other services that may be mandatory or optional depending on the product and customer.

The production goods sector corresponds to various basic industry sectors in the standard industrial classification system (SIC). It includes agriculture forestry, fishing, and hunting (SIC 01–09); mining (metal, coal, and gas extraction, and non-metallic minerals (SIC 10–14); various sectors of manufacturing, such as textile mill products (SIC 22), lumber and wood products (SIC 24), paper and allied products (SIC 26), chemicals and allied products (SIC 28), petroleum and coal products (SIC 29), rubber products (SIC 302, 305), primary metal industries (SIC 33), and electrical industrial apparatus (SIC 362).

As any demand in the field of business-to-business marketing, the demand for production goods is derived. Further processing as well as the final distribution stages have an impact. In addition, further processing, treatment, or use of production goods takes place after they have been sold, in conjunction with other factors of production. Hence, individual production goods compete with or complement other production or investment goods, and their importance varies according to where they are used and how far they have been processed already. In addition:

- Production goods compete with other substitutive production goods. If a problem can be solved in technically different ways, the existence of such a substitution has a direct impact on market competition. If a production good is a central part of a subsequent product, or if it is necessary for the product to function, then its technical and economic performance compared with alternatives is crucial for market success.
- Besides, important complementary relations with other production goods exist. They occur in nearly every kind of further processing stage or subsequent use, as a result of interaction with other raw, processed, or operating materials as well as with components. A central problem in marketing production goods is therefore to establish and maintain the product's integrability, i.e., its ability to fulfill its

required functions when used in conjunction with other production products. Achieving this depends on the buyers' requirements regarding product and performance standards, industry norms, its life cycle, its reliability, maintenance, availability, and disposal as well as requirements arising from the product's use environment.

- Furthermore, economically significant interrelations exist between production goods and the machines or plants that use them. Hence, the market success of a raw or process material is affected by such issues as the effect particular process technologies have on its utilization rate during production. The existence or development of an efficient technique for further processing is often an important consideration in marketing new production goods.
- The competing and complementary relations among production goods are relevant for all subsequent production stages, not just the next one, down to and including the use of the final product.
- Lastly, the disposal and recycling of waste resulting from the use of production goods can be a significant factor. Designing products for recycling can have an important effect on a firm's competitive position if it helps to reduce disposal costs of one or more firms in the production chain.

3.2.2 Marketing of Capital Goods

The term *capital good* refers to all machines and plants which are used in an organization to create products and services. They can be divided into major plants and single units.

In major plant engineering, systems of machines and services are combined to create a functioning operation. Such a large plant project usually involves several suppliers working together in a consortium or with a prime contractor. Examples are nuclear plants, cement plants, steel or rolling mills, desalination plants, and refineries. The major plant business has particular product, customer, supplier, and transaction features.

- Large plants can be seen as complex systems of software and hardware that are usually designed for particular customers. In addition, large plants are very costly and take a long time to design and build, particularly if new technologies have to be developed, which results in a high risk for sellers and buyers.
- The buyers of large plants are spread all over the world and hence the large plant business is a global business. During the buying process, a complex decision-making unit (DMU) or buying center emerges, comprising all those involved in the decision-making process. The DMU may include people from different organizations such as engineering consultants or members of government departments. The DMU is larger when customers lack know-how regarding particular processes, when they rely on external financing and licensees and financial institutions become involved (see Fig. 3.14).

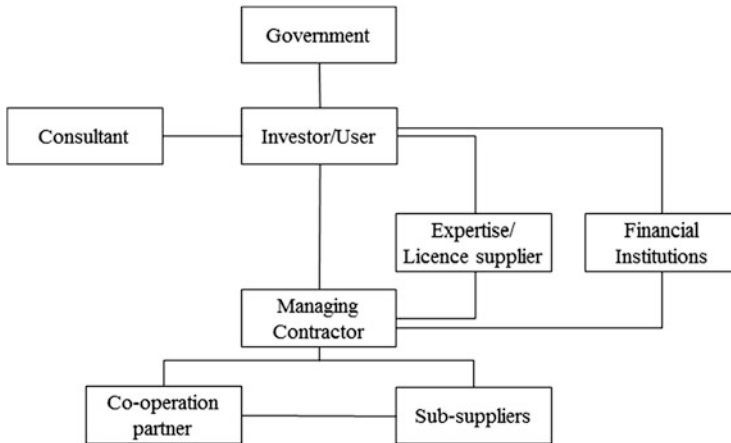


Fig. 3.14 Types of organizations involved in large plant transactions (Source: Stallworthy & Kharbanda, 1985)

- When selling to many emerging countries, or to countries in which the government plays a large role in business, other problems of funding and political influence become more significant.
- During a large plant project a lot of engineering work has to be done because a number of different technologies and performance requirements are typically involved. Therefore, supplier coalitions arise in which different firms form a consortium or a prime contractor coordinates sub-suppliers to carry out the project.

The interaction between suppliers and buyers involve extended negotiations regarding product specifications and how they are to be met (Leenders, Johnson, Flynn, & Fearon, 2006).

The different phases in the marketing of a major plant project are summarized in Fig. 3.15.

The relations between the buyer and seller and the negotiations can be formalized to different extents. For projects that are openly tendered, such as in the case of government tenders, the relationship is more formal than when formal tendering is not used.

In the large plant business, the basic tasks that have to be undertaken are: project planning; purchasing of the necessary machines systems and services; securing project finance (financial engineering); project implementation; initial use of the plant, and, increasingly, the upgrading of plants (see Fig. 3.16).

Project planning is mainly about understanding the technical problems of the customer and identifying a suitable technology to solve it. This involves the sharing of responsibilities between the supplier and customer for creating the overall product/service system, in accordance with the customer's requirements. In addition, it involves planning the supply system to carry out the project.

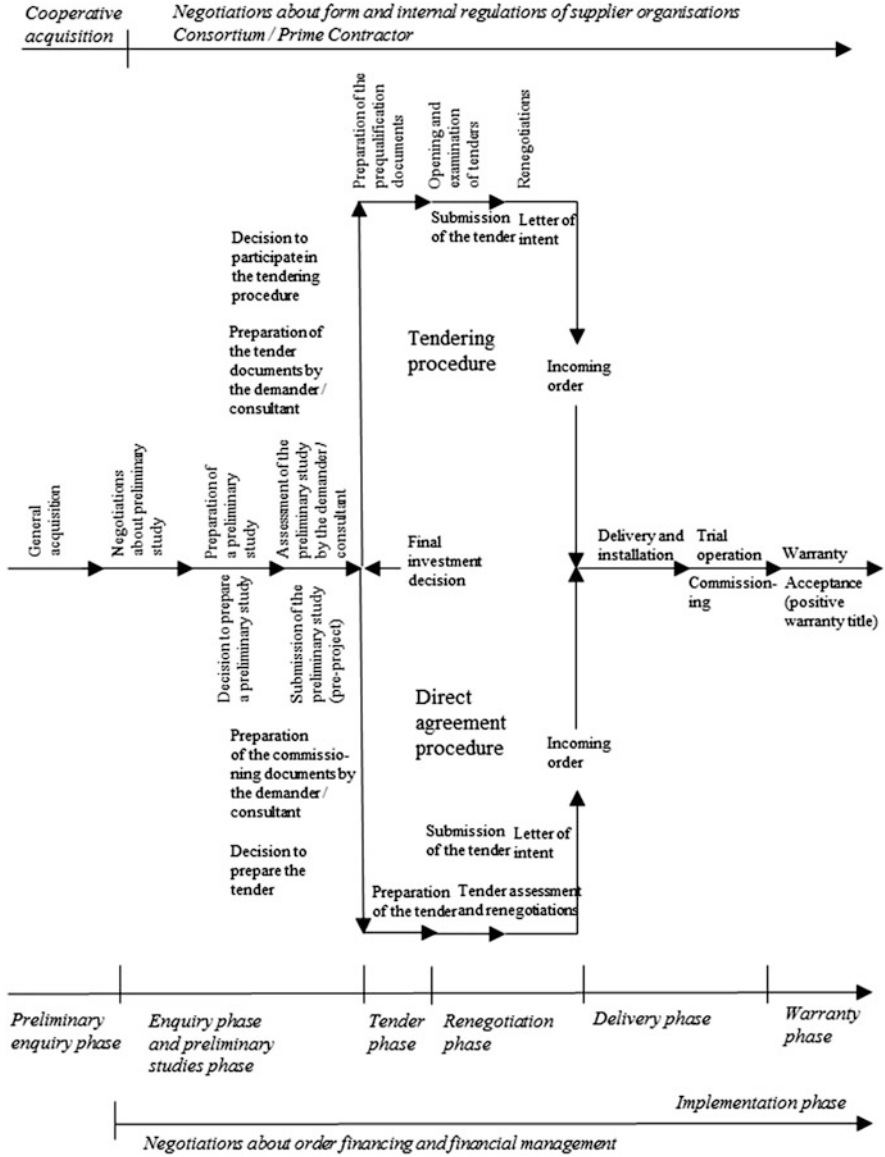


Fig. 3.15 Phases in the marketing of large plants (Translation of Engelhardt & Günter, 2000)

During project implementation, all the technical and economic problems of the large plant project have to be solved. This involves developing an appropriate organization structure and project management. Once it is completed, operating the plant can be part of the project, which makes it a “build, own, and operate” project or BOO. This occurs whenever the customers’ knowledge and resources are

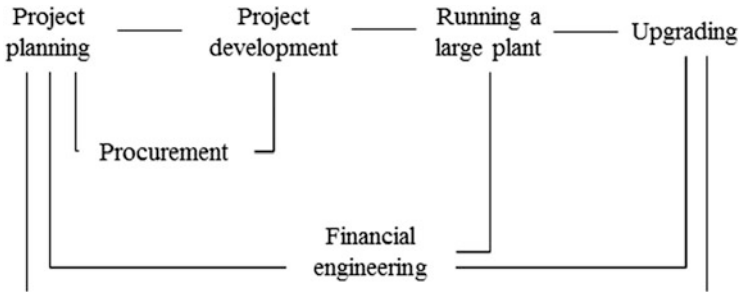


Fig. 3.16 Tasks during a large plant project (Translation of Engelhardt, 1988)

not sufficient to run the plant by themselves, as when a plant is delivered to a technologically and industrially underdeveloped country.

The complexity of a large plant project means that a number of different products and services usually have to be outsourced. Therefore, arrangements for purchase and delivery of these products or services are required. This calls for knowledge of supply sources and conditions and negotiating skills.

The provision of a financing system for a large plant project is an important source of competitive advantage if customers do not have the ability or willingness to develop it for themselves. The forms of finance used in such projects are complex, which is in part why the term financial engineering has arisen to refer to this task.

Finally, the retrofitting or revamping of large plants has become part of major plant business. This involves adapting an existing plant to utilize superior technology, such as introducing new production technologies, dealing with environmental law requirements or using cost-saving maintenance strategies.

The variety of the tasks described makes it obvious that services form an important part of the work involved in marketing. Two types of services can be distinguished:

- Systems services for running a plant, and
- User-related services to solve customer problems that are not directly related to plant operations of the plant itself, e.g., services to assist customers to buy.

Integrated physical units such as machines, vehicles, or systems, as opposed to major plants, are sold individually and used in particular ways by the buyer. These include such things as tractors, cranes, mowing machines, and trucks, which are used in conjunction with other things by the customer, e.g., when machine tools, textile machines, synthetics-processing machines, and packaging machines are used as part of an overall production system. Firms acquire and use assortments of machinery and equipment together with resource inputs to carry out their tasks and, because of the many ways in which units can be combined, it is often difficult to distinguish between single integrated units and system technologies. This

fuzziness is even more increasing as computer and electronic systems and technologies develop. Consider, for example, developments in the machine tools sector, where products are integrated to different extents in complex production systems in three main ways:

- Processing centers that usually consist of computer controlled machine tools with several automatic tool changers, such that many production processes can be integrated and follow on immediately from one another.
- Flexible production systems made up of several electronically controlled machine tools, automatic voltage conversion units, loading stations and a product buffer system that allow firms to switch easily and rapidly between different outputs.
- Flexible manufacturing systems, where several processing stations—computer controlled machine tools or processing centers—are connected in a material flow system. One microcomputer controls tools and product flow and supports the coordination of machines involved in different processes in one complete system.

These examples indicate that individual machines can be seen less and less as isolated investments in a firm's purchasing decisions. The more this is so, the more important it becomes for designers to take into account the kinds of machines, tools, and plants their products are likely to be used in conjunction with, in order to achieve a high level of integrability. This is why, increasingly, business is becoming a systems business rather than one focusing on the supply of individual products, tools, or machines.

3.2.3 Marketing of System Technologies

Problem solutions involve a mix of interacting hardware and software components as well as services. This mixing or integration is not only confined to industrial plants. In many business sectors, the development and utilization of *system technologies* have become common. Their main characteristic is the combination of inputs of products, processes, and machinery into an overall system that is coordinated automatically via computers. Typical examples are information systems, communication systems, and integrated production systems, but they also include supply, disposal, and transportation systems.

The ability to combine and coordinate such systems is made possible through the creation of computer based networks linking different parts of the overall process. These networks are the core elements of system technologies.

We can distinguish between *wide area networks* (WANs) and *local area networks* (LANs). WANs are usually public networks, such as the public fixed as well as mobile telephone net, satellites, and more generally the Internet. These networks are able to connect people over large distances and are run mainly by telecommunication firms and other network providers. Within larger firms, WANs

are used for data communication among units of a firm. LANs are used mainly for private communication and decentralized data processing within a single organization unit. With the growth in acceptance and use of the internet, organizations are now able to use it to configure local and wide area networks called intranets or extranets. Internal or intranet communications are protected from unwanted interaction with the extranet through establishing computer communication “firewalls” between them.

For system technologies, four types of markets can be distinguished:

- Public networks
- Interfaces
- In-house networks
- Network services.

Those who run networks are the buyers, and the manufacturers of network technologies and components are suppliers. The marketing of networks or network components is similar to the marketing of large plants and production systems discussed above. Peculiarities arise regarding the underlying system logic, which in turn affects the nature of component interfaces. For public networks, network specifications and standards are a critical issue, as this affects whether and how different systems and components can interact with the network and each other.

On the market stage of the network’s interfaces, the targeted customers are the services’ users. For example, business use of an ISDN or DSL network includes the following:

- Communication intensive interactions among changing people who are involved in creative problem solving and have unclear information requirements
- Production processing, involving coordination among an established group of units in a predefined manner
- Data-oriented mass communication.

Suppliers of network connections are those who run the network, usually a telecommunication firm. However, transnational and commercial network providers have increased in number because of the deregulation of the telecommunication sectors in many countries, the emergence of wireless and satellite technologies, and the growth of the internet. An example of this is the development of many competing mobile phone networks in many countries.

In-house networks include office communication systems and computer-integrated production systems. The latter are often referred to as *computer-integrated manufacturing* (CIM) systems spanning the design and construction of products, process preparation, production planning, manufacturing, and the distribution and service functions. Thus, the main elements of a CIM system are mechanical, electro-technical and electronic hardware and software components, such as PPS (production planning and steering), CAD (computer-aided design),

CAP (computer-aided planning), CAM (computer-aided manufacturing), and CAQ (computer-aided quality assurance).

In addition to these, there are a variety of network services that form part of system technologies. All participants in a network are potential users of such services, including commercial users. Suppliers here include not only those who run the network or the suppliers of software and hardware components but also third party service providers. In many countries, since the deregulation of the telecommunications sector, new private companies have been allowed to offer services by buying access to the network. As a result, there has been a proliferation of new types of players offering all manner of services, including digital phone networks, long distance, and even local call networks. Indeed, the internet offers the opportunity to provide many more services as its speed and technology improves.

Independent service providers have to find customers on the network, but also have to establish a relationship with the institutions that run the network, either as a customer or a partner.

A distinction can be made between network-related and use-related services:

- Network-related services include the establishment of private networks and service to increase data transmission speeds. Such value-added services have to buy transmission capacity from organizations running the network. An extreme case is the pure on-selling of transmission capacities or so-called agency services. More complex value-added services include network security services, information services, as well as facility management services in which an organization offers to carry out all the electronic data processing activities for a network owner.
- Use-related services include electronic mail, information services, the administration of databases, credit card verification services, and the like. Usually, these are offered on the basis of so-called “carrier-VANs” that are provided by local telecom networks and are designed to give private institutions the opportunity to offer special telecommunication services. Examples of this include video conferencing services or the TEMEX service (telemetry exchange) that allows the synchronization over long distances of broadband, cellular radio, and digital broadcasting networks and is used to protect certain goods or to supervise certain processes from abroad.

3.2.4 Marketing of Services

A number of different types of specialized service providers exist in the business-to-business sector. These include consultants, advertising and research agencies, transport and logistics firms, specialist agencies for renting or leasing land, buildings, machinery and equipment and industrial plants, and specialist insurance agencies.

In certain industries, such as stone, glass, foundries, office equipment, and electromechanical systems, services account for 30 % or more of total inputs.

This is because specialized providers can carry out the services at a lower cost than the manufacturers they serve. In order to become more competitive, firms are increasingly outsourcing various noncore activities to independent service providers rather than doing the work in-house (Domberger, 1999).

The most important business-to-business services are distribution related. Here, retailers and wholesalers purchase goods for resale to other organizations without any further physical processing except for transportation, handling, and packaging services. A clear distinction between the retailing of business and consumer goods is not always possible as it depends on who is the customer rather than the nature of the goods themselves. Customers of cash-and-carry shops as an example include small- and medium-sized firms such as restaurants and retail stores, as well as households. Buyers of cars, office equipment, and furniture also include firms as well as households.

Distributors in the business-to-business area deal with all kinds of goods and occupy an important position within marketing:

- The majority of raw materials, e.g., oil, minerals, agricultural products, wood, etc. are sold through international raw material dealers.
- The distribution of certain processed materials, such as iron and steel, basic chemicals, and some specialist chemicals, is done to a large extent through specialized dealers.
- Production and manufacturing components are distributed to smaller firms via independent distributors.
- Specialized machinery and equipment such as machine tools or office communication instruments are sold through specialized distributors, especially to small or medium-sized firms.
- In the marketing of industrial plants and production systems, specialized service providers exist. Their main function is to put together components and subsystems for particular projects but not to produce the components themselves.
- Finally, in the energy sector specialized distributors exist that are distinct from those generating the energy.

A distributor active in the business-to-business field can be involved in carrying out all functions involved in distribution and sale, i.e., contractual work, presales services, physical distribution, after-sales services, and financing. But usually some degree of specialization occurs. An exception is perhaps the Japanese general trading houses or “Sogo Shosha” who are undertaking a wide range of activities (Eli, 1979). Various types of industrial goods traders may be distinguished with varying degrees and types of specialization:

- Product-oriented traders specializing in the marketing of particular industrial goods.

- Producer-oriented traders who act as legally independent sales agents for producers, distributing mainly the producer's products. These are sometimes in-house trading firms.
- Country-oriented traders focusing on a country or region as a source of products to sell or as target customers.
- User-oriented traders who focus on the needs of certain industries or types of firms, such as agriculture, building materials, and machines. They may focus also on solving certain types of user problems, irrespective of the customer's industry.

There are also traders who specialize in certain types of transactions or deals, such as large industrial plant projects or countertrade deals. Finally, mail-order firms exist in the business-to-business sector, who focus on solving the procurement problems of firms, using catalogues or, more and more increasingly, the internet and e-commerce.

3.3 Characteristics of Product/Service Offerings in the Business-to-Business Sector

3.3.1 Solutions as Assortments or Bundles of Products and/or Services

As the foregoing paragraphs have shown, products and/or services offered in business-to-business markets typically are not "simple." In contrary, in most cases the supplier's offering builds a more or less complex solution using assortments of products and/or services that are created and offered to satisfy customer requirements. Such a solution thus represents a customized and integrated combination of products, services, and knowledge solving customer-specific problems (Sawhney, 2006; Storbacka, 2011). Its development, offering, and delivery are typically accompanied by longitudinal relational processes between the supplier and the customer (Tuli, Kohli, & Bharadwaj, 2007; Storbacka, 2011). Sometimes a charge is made for the design of this assortment, as when a firm commissions preliminary design, but they are often developed prior to any commitment by the buyer and at the supplier's expense. The elements of such product service bundles can be distinguished in two ways:

- First, the degree to which a solution comprises tangible and intangible elements. This refers to the output of the production and/or delivery processes of a problem solving.
- Second, the degree to which the component tasks can be carried out with or without the participation of the customer. This refers to the solution creation process itself.

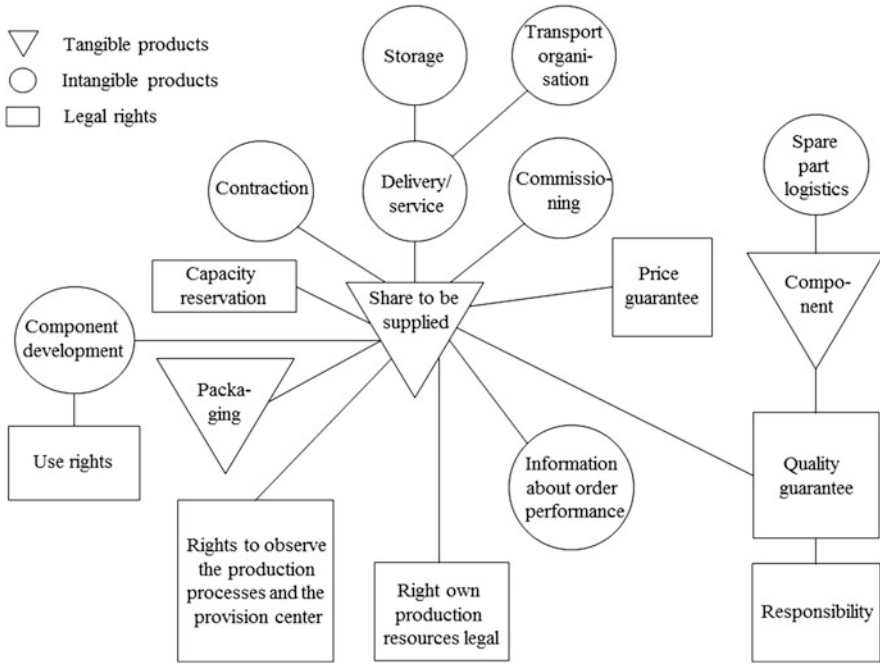


Fig. 3.17 Supply as a product/service bundle (Translation of Freiling, 1994)

Figure 3.17 gives an example of a supplier in the car industry and shows the distinction between tangible and intangible elements as well as the legal rights that are part of the offered solution.

In short, problem solutions involve tangible and intangible elements to different extents, and these elements are produced with different degrees of customer involvement. A typology of product/service bundles can be developed on the basis of this as shown in Fig. 3.18.

The extreme types in this classification can be characterized as follows:

- Problem solutions that contain only, or primarily, tangible (material) elements that are produced to a large degree autonomously (e.g., pre-produced components)
- Problem solutions that contain only, or primarily, intangible (service) elements that are produced mainly autonomously (e.g., database services)
- Problem solutions that contain only, or primarily, tangible (material) elements that are produced in close cooperation with the customer (e.g., special purpose machines)
- Problem solutions that contain only, or primarily, intangible (service) elements that are produced in close cooperation with the customer (e.g., business consulting services).

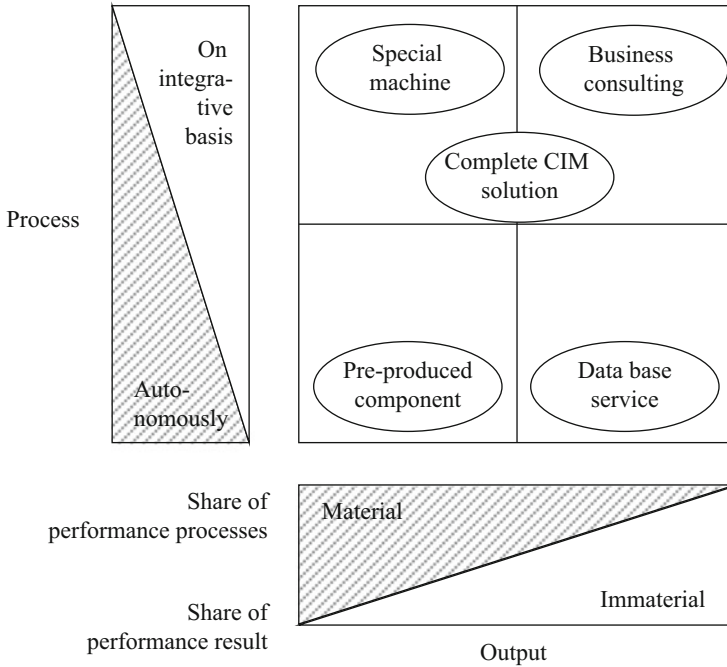


Fig. 3.18 Product/service typology (Source: Engelhardt, Kleinaltenkamp, & Reckenfelderbäumer, 1992)

The majority of problem solutions in business-to-business markets are a combination of these different forms. For example, consider a computer-integrated manufacturing (CIM) solution that comprises:

- Pre-produced material products, e.g., standard screws and nuts, standard machines or PCs that are used in a coordination station or in controlling machine tools, transport, and handling devices.
- Independently created intangible services, e.g., standard software programs that can be used on any kind of computer.
- Tangible material elements produced in cooperation with the customer, e.g., special machines to drill or to mill that are constructed and manufactured according to the requirements of the customer for use as part of the system.
- Intangible services created in cooperation with the customer, e.g., consulting or planning services that are carried out by external consultants in the areas of general business consultancy, organizational analysis and planning, CIM introduction, and factory layout.

The integration of these components into a complete CIM system is a mix of these four types of elements. The tangible material is the hardware, planning, and design of the CIM system itself, and the necessary analyses are mainly intangible

service components. The process of creating and implementing a CIM system can only happen in close cooperation with the customer. Information is needed about the customers' current and future business policy, the number and qualification of employees, the amount and quality of existing equipment. Employees and managers receive training, and office and factory equipment has to be redesigned. Lastly, independently pre-produced components and machines need to be incorporated into the complete CIM system.

3.3.2 Qualities of a Product/Service Offering

3.3.2.1 Types of Qualities

The recognition that offers are bundles of products and services bears significant consequences for marketing activities. First, a supplier must have the ability and willingness to carry out the tasks involved; to accept an order and create a product, i.e., offer a problem solution. Particular resources are needed that make the activities possible, and these are a mix of internal as well as external resources. Capital or durable resources provide the potential to carry out certain kinds of activities and include the firm's employees, as well as machines, production plants, and buildings. Consumable resources, on the other hand, are used up in performing activities and include raw and processed materials as well as process and service elements.

A firm's resources are diverse, depending on the kind of business the firm is in. For example, an aircraft producer's resources include many types of people with differing skills and abilities, a number of factories and buildings, many different kinds of machines and production plants, inventories of raw and processed material, and so on. But a landlord may get by with only the ownership of the buildings he rents, his own man power, an office with the appropriate equipment, and a telephone line as resources.

An important part of a firm's resource base stems from its relations with suppliers, customers, firms supplying complementary products and services, government and other nonbusiness organizations, and even its competitors (Håkåansson & Snehota, 1995; Brandenburger & Nalebuff, 1997). These relations are the means by which external resources are created and accessed, both directly and indirectly, but they are not under the direct control of the firm (D'Cruz & Rugman, 1993; Håkåansson & Snehota, 1995; Wilkinson & Young, 2000).

A transaction can only be completed if the right resources are available. The activities involved are not limited to production processes but include all those necessary, directly or indirectly, to create and deliver a solution to the customer. The activities can be subdivided into several processes that together create the desired result—the problem solution for the customer.

Some of these processes may be carried out by the focal supplier or by sub-suppliers and other firms. But others require the participation of the customer. The final result is the completion of a transaction and only the final result—the output of all these processes—creates customer benefits. The possible outputs in the business-to-business sector cover a vast range from ready-made large plants

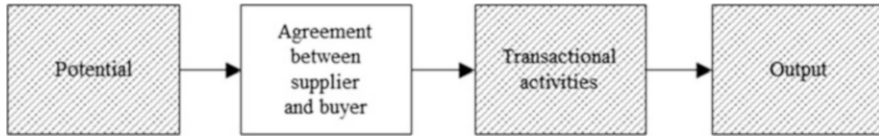


Fig. 3.19 The transaction process for products

including all connected services, to a component delivered precisely on time for inclusion in the customer's production process, to a completed consulting project or training course. Figure 3.19 summarizes the kinds of transaction activities and processes involved.

The fact that the customers participate in transactional activities has impacts to some extent on marketing. The agreement between the seller and buyer is not based on a ready-made product but in terms of a performance promise made by the supplier.

When contact between potential suppliers and buyers starts, the performance to be achieved only exists as an idea. This idea will be modified and made more concrete once the buyer's requirements are integrated into the transaction activities. This process is more intensive, the more customized the final product is intended to be. The more standardized the transaction activities, the more the solution can be created independently in advance. For example, by offering a modular system, most of the modules can be produced in advance and later combined according to the customer's requirements.

Until the customer's detailed requirements are known, a supplier only provides a potential solution in terms of production capacities, human resources, and know-how. The transaction activities start once an agreement about the solution to be created has been reached, as depicted in Fig. 3.19.

3.3.2.2 Qualities and the Buyer

We now change our perspective and consider the consequences of products as bundles of tangible and intangible elements from the buyer's side.

The most significant effect is on the buyer's level of perceived risk, which is likely to be greater when an integrated product or service has to be created. The risk is whether the final problem solution will have the required features. In order to reduce this risk, customers try to gather information to help them evaluate the supplier and the risks involved. Three ways are open to the customer:

- First they could examine all the product/service features that already exist at the time of the purchase decision. This is called search behavior and the product features are *search qualities* (Nelson, 1970). In the business-to-business sector, the final solution often has only few search qualities. For example, when purchasing a computer network, a customer is not so much interested in the physical condition of the cables and plugs. What the customer wants to know is whether the communication opportunities of the network can be used as desired, and this will only be discovered when working with the network.

- Second, in addition to search qualities, other qualities exist that the customer can evaluate only through direct experience and are called *experience qualities* (Nelson, 1970). Here, the relevant experience is not necessarily that of members of the customer firm themselves. Experience qualities can refer to others' experience. Thus, this type of information can be collected in two ways: from other buyers who have used the supplier or from organizations that specialize in quality evaluations and publish the results.
- To the third type of attributes contains those that the customer cannot evaluate even after purchase and use. Here, the customer has to trust that the supplier firm will keep its promises. These qualities are called *credence qualities* (Darby & Karni, 1973). The quality of a long-term corporate image campaign developed by an advertising agency, for example, is difficult to evaluate by the customer firm, even after the campaign has finished. This is because during the time the campaign ran, many different other influencing factors might also have created possible attitude changes.

From the foregoing we can see that qualities are more or less observable. Search qualities can be evaluated before as well as after the purchase. They are observable. Experience qualities can only be evaluated after purchase. They are unobservable before purchase. Credence qualities cannot be evaluated before or after purchase and remain hidden even after the purchase.

Figure 3.20 depicts the different categories of search, experience, and credibility qualities in terms of the opportunities for the customer to evaluate them during the purchase process.

As already noted, problem solutions in business-to-business markets are increasingly taking on service characteristics. This is why evaluating a solution before purchase is less and less possible. The less this is possible, the more a customer has to try to evaluate the experience and credibility qualities to reduce his uncertainty, as depicted in Fig. 3.21.

3.3.3 The Marketing Implications of Different Types of Product Qualities

The increasing importance of experience and credibility qualities can be linked with product dimensions as shown in Fig. 3.22.

		Evaluation after purchase...	
		possible	not possible
Evaluation before purchase...	possible	search qualities	(not analyzed)
	not possible	experience qualities	credibility qualities

Fig. 3.20 Customer's knowledge of product qualities (translation of Plötner, 1995)

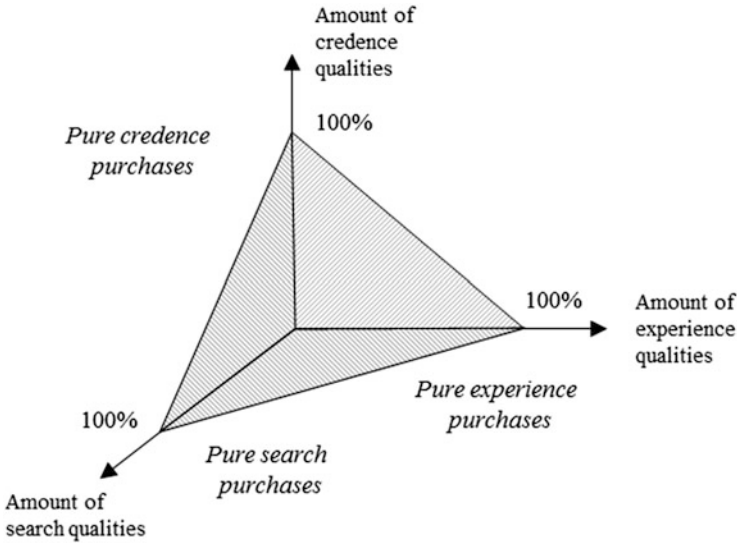


Fig. 3.21 Search, experience, and credence purchases (translation of Weiber, 1996)

		product qualities		
		search qualities	experience qualities	credence qualities
product dimensions	resources	observable resource qualities	hidden resource qualities	vague resource qualities
	transactional processes	observable process qualities	hidden process qualities	vague process qualities
	Output	observable result qualities	hidden result qualities	vague result qualities

Fig. 3.22 Types of qualities in business–business purchases (based on: Henkens, 1992; Adler, 1996)

Figure 3.23 shows nine examples of product situations which have different implications for a supplier’s marketing activities before and after contract settlement, as well as before and after product/service creation.

If only a performance promise can be given when the contract is settled, business-to-business marketing is concerned mainly with creating customer trust in the supplier’s resources. Under such conditions, suppliers can hardly prove they are able to solve the problem. Then, trust in the quality of the supplier’s resources becomes the main focus.

		product qualities		
		search qualities	experience qualities	credence qualities
product dimensions	resources	employee qualification, certification	Employees' abilities and skills	creditworthiness
	transaction activities	net plan	time to deliver a special machine	Transaction processes
	result	physical size of a machine	use time, reliability of a machine	efficiency of a breakdown security device

Fig. 3.23 Examples of types of qualities

After contract settlement, the transaction activities have to be carried out and this includes cooperating with the customer, i.e., customer integration, as efficiently and effectively as possible. This includes analysis of ongoing activities to ensure that problems do not occur that were not apparent to the customer in advance. After the transaction is completed and the results can be evaluated by the customer, customer satisfaction can be reinforced through communication activities and follow-up. What is important is ensuring the business relation with the customer is maintained so that any difficulties that arise can be quickly identified and remedied.

3.4 The Basic Tasks of Business-to-Business Marketing

In Chap. 1 was shown how market transactions arise and market processes operate. In Chap. 2 was explained that the purpose of marketing management is to create and maintain competitive advantage and that everyone in a firm is involved to some extent in marketing and contributes to the creation and maintenance of a competitive advantage. And in the present chapter, we presented the characteristics of business-to-business markets and the major developments that are taking place. Taking all that into account, we can identify the basic requirements for a firm to create a competitive advantage in a business-to-business setting. It has to:

- Create an offer with benefits to customers that are greater than the costs to the customer
- Create an offer with a benefit–cost ratio that is perceived as superior by the customer to all others considered, i.e., the evoked set of alternatives
- Make the offer known to customers and to convince them that the offer is preferable to alternatives
- Make the product and/or service available to the customer.

A variety of customer-related tasks are involved:

- A product/service component: to create a product that will fulfill the required functions
- A communication component: to inform the customer about the offer
- A distribution system: to make the offer available to the customer.

Each of these tasks can be carried out in a variety of ways, and each must be designed to contribute to the creation of the firm's overall competitive advantage. Hence, we distinguish three elements of marketing strategy to be designed:

- The product/service offer
- The distribution system
- The communication system.

Of course a supplier usually wants to be compensated for carrying out these tasks and providing benefits to customers and therefore charges a price for its services. Once again there are many ways in which this can be done which will affect the benefit–cost ratio offered to customers. This represents a fourth element of marketing:

- Price.
Finally, there is the design of the contractual arrangements governing the exchange, which specify the rights and obligations of each party regarding the product and service performances and price. A number of alternative types of contractual arrangements are possible and these make up the fifth element of marketing to be designed:

- The contract

Together these five elements constitute a firm's marketing mix.

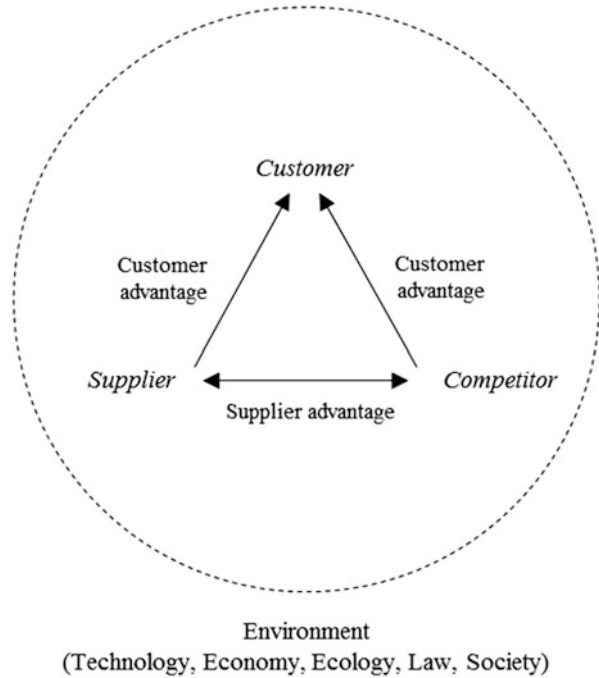
Marketing research is required in order to design each of these elements in ways that will contribute to the creation and maintenance of a firm's competitive advantage and to the achievement of its objectives. Marketing research involves the collection, analysis, and use of various types of information about the market, the customers, the competitors, and the environment.

In order to analyze a firm's information needs in business-to-business marketing, we use the market triangle of customer, supplier, and competitor, as depicted in Fig. 3.24.²

A supplier tries to create customer advantages for potential customers that are perceived by the customer to be superior to that of competitors. The superiority over competitors is a firm's comparative or supplier advantage, and this may be created in any aspect of the firm's outputs, structure, and processes. A firm's competitive

²Cf. Chap. 2.

Fig. 3.24 The marketing triangle



advantage depends on the customer and/or supplier advantages it is able to create and sustain. This takes place in the context of an environment that shapes the actions and perceptions of customers, suppliers, and competitors in various ways.

In developing its marketing plans, a firm requires the following types of information:

- How customers evaluate the costs and benefits of different market offers and ways of solving their problems. The types of information sources customers use and how they evaluate this information. How they compare alternatives they are considering (their evoked set). All these factors impact on purchase behavior, which in business-to-business markets is generally referred to as “organizational buying behavior” or “industrial buying behavior”.³
- The nature of the customer advantages created by competitors’ offerings. The motivations and competitive advantages of existing and potential competitors. These factors are the focus of competitive analysis.
- The impact of the environment in which firms operate and transactions take place including: technological, economic, natural, ecological, legal, and social dimensions. These factors constitute the environment analysis.

³ Cf. Chap. 4.

- The strengths and weaknesses of the firm's current resources, including its relationship and network resources, which affect its ability to act. The opportunities and threats confronting the firm affect how it can attempt to achieve an advantageous market position. These factors contribute to an analysis of the sources of competitive advantage of the firm.

Exercises

1. What are the similarities and differences between different types of business-to-business markets?
2. What is the central problem in the marketing of production goods?
3. What is the central problem in the marketing of investment goods?
4. What is the central problem in the marketing of system technologies?
5. What is the central problem in the marketing of services?
6. How do customization and standardization differ and how are they related?
7. Explain the term "customer integration."
8. What effects do market and industry standards have on the buying behavior of buyers and on the marketing activities of suppliers?
9. What does the "order-penetration point" mean and, if it changes, what consequences does it have for a product or service supplier?
10. What are the components of problem solutions in the business-to-business sector?
11. How does the mix of components comprising a problem solution have for a supplier's marketing activity?
12. Explain the three types of product qualities.
13. What effects do each type of product attribute have on the buyers' purchasing behavior?
14. How do the different types of product qualities affect supplier's marketing activities?

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Sabine Fließ, Wesley Johnston, and Christina Sichtmann

The objective of this chapter is to explain the decision-making process underlying organizational-buying behavior. Three main questions are addressed: Who is the buyer? What is the meaning of organizational-buying behavior? What are the main factors affecting organizational-buying behavior? In addition, different theories of buying behavior are described that help the analysis of organizational-buying behavior.

4.1 Introduction

4.1.1 The Nature of Business Buying Behavior

Purchase decisions, from a profit perspective, have a considerable impact on a firm's performance. In fact, the purchase of goods and services very often adds up to more than half of the sales revenues generated by an organization. The supplier influences the value-added process of a business buyer as the quality of the input has an impact on the quality of the output and finally, a firm's success on the market. Because every purchase is also a sale, the buying decision is of utmost importance for the purchasing firm.

To successfully develop effective and efficient marketing strategies, marketers must recognize the importance of understanding this decision-making process.

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Understanding business buying behavior is a challenge, however. It often is a multiphase, multi-person, multi-departmental, and multi-objective process.

One of the first problems business-to-business marketers encounter is: who is the buyer? In fact, in business-to-business markets, buyers cannot be considered as single persons who make decisions on their own. In large organizations, purchasing usually is a specialized function represented by purchasing managers or a purchasing department. Their actions need to be coordinated closely with other functions and activities within the organization.

This interdependence of the purchasing department with other departments and functions in the buying process and the resulting complexity of business buying decisions become obvious when the buying organization is viewed as a system. In general, a system is defined as a set of interdependent parts or subsystems connected by inter-relational communication. An organization, in fact, is composed of several definite subsystems or functions which—as a system—is characterized by some degree of structure and a boundary that differentiates it from the environment. However, an organization does not act in isolation but interacts with its environment by exchanging information and other inputs and outputs.

From this perspective, three important and basic functions of organizations become apparent: input, throughput, and output. In other words, first of all, an organization takes resources and information (its inputs) from the larger system (its environment), which includes other organizations. Then, it processes these inputs (throughput) and finally returns them in some different or changed way (its output) to the environment, i.e., other organizations.

As can be seen from Fig. 4.1, industrial organizations must purchase goods and services as inputs into their ongoing organizational processes for continuing output. A company only survives as long as it can perform the functions of input (buying), throughput (operations), and output (selling), provided that the offered product or service succeeds on the market. However, buying, operating, and selling are intertwined in an organization. The input processes cannot be separated from the throughput or output processes. Nor can the buying function in one firm be separated from the selling function in other firms. In summary, marketing is confronted with a complex set of issues and situational factors that directly and indirectly influence organizational-buying behavior that have to be considered when developing effective and efficient marketing strategies.

Against this background, we use the following definition of business buying behavior (Bonoma, Zaltman, & Johnston, 1977): An explicit or implicit transactional decision-making interaction through which formal or informal profit centers represented by authorized delegates

- Establish the need for products or services
- Search among and identify potential suppliers
- Evaluate the marketing mix (product, price, promotion, distribution) of potential suppliers
- Negotiate for and agree about purchase terms
- Complete a purchase

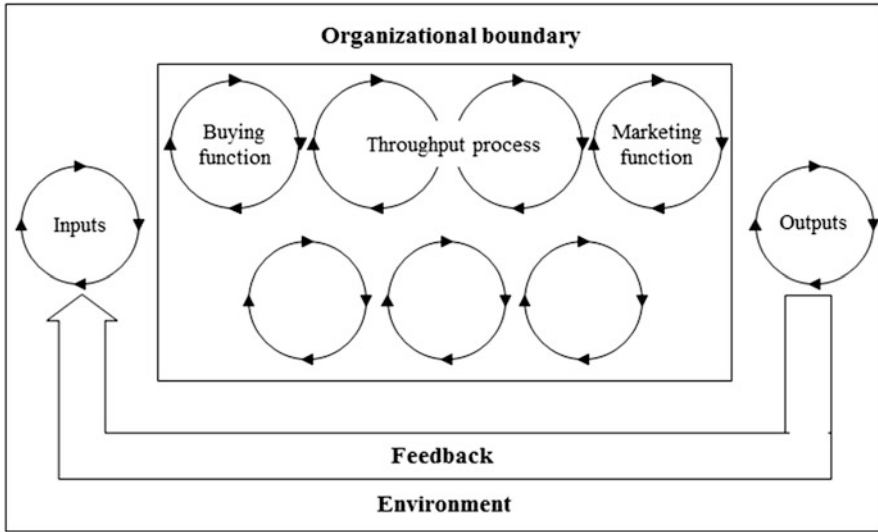


Fig. 4.1 The organization as a system (Source: Johnston, 1981)

- Evaluate the purchase's utility in facilitating organizational goals

First, buying behavior can be viewed as the process through which an organization goes when purchasing goods and services. In general, this definition characterizes the buying decision process as consisting of various stages. However, as expressed above, this process is not necessarily explicit and formally organized. For example, the evaluation of a supplier may vary by use of a scoring model utilizing specified criteria, a non-structured discussion between different members of a firm or even by a single purchasing manager who acts intuitively. The various stages may occur in a chronological order or some stages may be skipped or repeated several times, depending on situational factors (Gummesson, 1978; Webster & Wind, 1972b).

This definition also emphasizes the transactional and interactive nature of organizational buying. In other words, industrial buying is not an act of an individual person but rather, the outcome of an interaction between at least two parties, buyers and sellers, often comprising a number of persons who are official representatives of the parties involved in the decision process. Consequently, industrial-buying behavior is a transaction between a number of individuals who share the interdependency of outcomes, the possibility of divergent goals and conflict, and often attempt to influence one another.¹ In summary, this view acknowledges intra-firm and interfirm relationships in the buying process that go beyond the formally authorized representatives assigned to the purchasing function.

¹ Cf. Sect. 1.1.3.

Marketing researchers and practitioners are confronted with a complex set of issues and situations that directly and indirectly influence organizational-buying behavior. Hence, they need to know the buying process as well as its influencing factors to be able to decide what marketing activities should be applied in order to become the preferred supplier of a buying firm. The objective of this chapter is to give an overview of concepts, studies, and research findings relevant to industrial-buying behavior.

4.1.2 Aspects of Business Buying Behavior

Several marketing scholars assert that research and knowledge about business buying behavior is insubstantial. However, the literature on organizational-buying behavior is quite vast, but is fragmented due to the complexity of the subject. Examination of research on organizational-buying behavior reveals that the most basic questions are not answered primarily due to conceptual ambiguities and methodological weaknesses.

In order to get an overview, this chapter focuses on three questions that are relevant for developing effective and efficient marketing strategies:

- Who is the buyer?
- What is business buying behavior?
- Which factors influence the business buying behavior?

The first question, who is the buyer, is probably the most important. In fact, there is no consensus about the unit of analysis in business buying behavior. There are at least two perspectives on the unit of analyses. One perspective is based upon the assumption that business buying behavior is an act accomplished by a firm, a single person, or a group of persons (individual level of analysis). Against this background, business buying behavior is viewed as phases of consequential actions that are influenced by a number of situational variables and is analyzed through a stimulus–response approach. Another perspective focuses on interactions between individuals and examines interactions that occur both within the buying firm and between the buying and the selling firm as well as the variables that influence the interaction processes and outcomes. Thus, business buying behavior is analyzed from a dyadic or systems approach business.

This chapter is structured accordingly. First, it focuses on different views relating to the unit of analysis in business buying behavior. Second, it examines research pursuing the individual level of analyzing the buying behavior. Third, it analyzes models and important variables of business buying behavior from a dyadic perspective. Finally, the chapter tries to combine both perspectives and to analyze if they are compatible.

4.2 Who Is the Buyer?

Who is involved in the buying of inputs needed by organizations? From the organizational level, buying organizations vary tremendously, from small firms with no full-time purchasing specialists to huge corporations with large, centralized purchasing departments. Who makes certain decisions or exerts influence also varies by firm. In some cases, the entire decision is made by the purchasing department; sometimes the decision-making process is a joint effort. In other cases the purchasing department is not involved in the decision, but simply places the order and files the paperwork. Purchasing management's authority varies among industries, organizations, and for different product categories and purchase situations. The purchasing department may make the decisions regarding less important, more routine purchases with little informational input from other functions, whereas the purchase of major capital items may require management approval.

From these examples, we see that it is not easy to identify the target of marketing activities. In order to fully capture the assessment of the buying organization and its influences, there is a need to identify those individuals within the organization who have authority in organizational-buying decisions. The problem is to define the locus and dimensions of buying responsibility within the customer organization, define the membership of the situational buying center, and understand the structure of authority and communication within the buying center.

It is essential to observe people (alone and in groups), their activities, and the communication that takes place among them in order to understand the wide variety of organizational-buying processes that exist and the underlying dimensions of participation in the buying decision process.

Yet, the challenge of a model of business buying behavior that considers all these aspects simultaneously is too complex. Therefore, the analysis of the buying behavior is simplified by differentiating between several units of analysis.

4.2.1 The Firm

The early stages of the analysis of business buying were strongly influenced by a microeconomic perspective. A number of early studies in the field simply use the firm as the unit of analysis disregarding the individuals involved in the process. This view focuses on the choices made, while it tends to neglect the decision processes that might be involved. The question is whether there are characteristics that may influence a firm's buying decisions.

For example, Baker (1975) analyzed the impact of organizational structure on the willingness of companies to adopt innovations. He found that size is the most important factor in early adoption. The bigger a company, the more willing it is to adopt an innovation. Furthermore, the size of organizations influences the resources devoted to the acquisition and evaluation of information, as well as the search for new and better ways of exploiting a firm's resources. A larger firm tends to be more

dependent on formalized procedures and standard practices to govern its day-to-day activity, to measure its performance, and to enable it to select between alternative courses of action (Baker, 1975).

As another example, Gronhaug (1976) developed a taxonomy of product-dependent (for profit) and profit-independent (nonprofit) companies and used it for classifying organizations and comparing their buying behavior. He found that in product-dependent organizations, the purchasing activities are more structured. Furthermore, the buying motives differ between the two types of companies. Whereas profit organizations purchased due to internal need of input, nonprofit organizations' buying behavior is driven by the money they have available in their organizational budget. However, Gronhaug (1976) does not find any significant differences between the two types of organization in terms of product purchase for innovation purposes.

As these examples show, an analysis of a firm or industry is sometimes helpful to recognize trends or to narrow the market to which an organization should target its products. This perspective may be useful for segmentation purposes. Describing a firm in terms of its size, geographic location, etc. may be used for a macro-segmentation of a market, helping to screen potential buyers that present good market opportunities. However, it does not guide a marketer as to how to market his or her products. For example, according to Baker's results, innovative companies know that their main customers may be bigger firms. However, they do not know how to convince these big companies to buy their innovation. Focusing on the firm as unit of analysis neglects the fact that individuals determine the size, plans, and environment of organizations. Therefore, the persons involved in the buying process are the ones who should be targeted for marketing activities.

4.2.2 The Purchasing Manager

The most visible individuals to the outside marketing organizations are the purchasing manager and persons in the purchasing department. Consequently, very often the purchasing manager is viewed as the target of marketing activities. This perspective assumes that the purchase decision is mainly made by a single individual within the firm holding an important position in the purchasing department. Hence, many studies focusing on industrial-buying behavior analyze psychological variables such as motives, perceptions, and learning processes of the purchasing manager that a marketer has to consider when targeting marketing activities.

1. Motives of the purchasing manager

The motives of purchasing managers can be categorized as "rational" and "nonrational." Early researchers, who adopted an economic model of man, viewed the actions of managers as entirely rational. Their motives included the price, quality, and service from the supplier. However, this view was already questioned in the 1940s. In an empirical study, Duncan (1940) found that rational motives

predominate, while non-rational motives of purchasing managers also have an impact on the purchase decision. He identifies habit, emotional stress, caution, and confidence of price levels as important non-rational motives (Duncan, 1940).

In general, three different views about motives of purchasing managers can be distinguished:

- Classical
- Neoclassical
- Consumeristic

perspective (Feldman & Cardozo, 1969).

From the “classical” perspective, purchasing managers act as clerks who receive requisitions from management and product information from salesmen and supplier catalogues. They match the management specifications to the lowest-priced alternative available and complete the paperwork. Adopting this perspective, the buyer is viewed as rational and informed. Accordingly, marketers are recommended to accomplish market segmentation of industrial buyers along lines of geography, size, and product-class dimensions.

A modified and extended version of this basic view can be classified as the “neoclassical” perspective. It perceives the purchasing function as having more complex requisitions and greater discretion in the buying decision and in general, being more active. The purchasing manager initiates the supplier contact, performs cost and value analysis, and attempts to minimize the firm’s total costs. This view assumes that the purchasing manager aims to obtain the best combination of price, quality, delivery, and service. Although it presumes a rational actor, the neoclassical perspective includes an emotional element that occurs whenever a purchasing manager settles for less than the best option. This view favors advertising as an outstanding marketing tool.

A third point of view follows a consumeristic perspective. The purchasing manager is described as a procurement executive. The buying decision of purchasing managers is influenced by discussions with executives in other departments and suppliers in other firms. Their actions are proactive rather than reactive, and they initiate both intra-firm and interfirm contacts. Moreover, the procurement executives’ behavior incorporates the concepts of risk preference and resource allocation.

Apart from these theoretical perspectives, an institutional economics perspective on business buying behavior may be added. From this point of view, a purchasing manager’s strongest motivating factor is to reduce risk (Fließ, 2000). Purchasing managers are uncertain about their decision making and its consequences. The perceived risk inherent in a purchase is positively related to participation in a buying situation (Garrido-Samaniego & Gutierrez-Cillan, 2004). The perceived risk associated with a purchase decision is based on two components²:

² Cf. Sect. 1.1.

- The perceived uncertainty about the incidence of negative consequences
- The perceived importance of the consequences which might result from an incidence

Uncertainty in purchase decisions is categorized as exogenous and endogenous. Exogenous uncertainty relates to environmental factors which cannot be influenced by the purchasing manager. Endogenous uncertainty refers to the behavior of the transaction partners involved in a purchase.

To come to a buying decision, purchasing managers need to reduce their risk to an acceptable degree. They cannot, however, fully eliminate it. In general, purchasing managers have two options to reduce uncertainty that refer to both components of perceived risk:

They can either try to reduce:

- The perceived uncertainty regarding the occurrence of an incident or
- The perceived importance of the consequences

Actions that prevent the incidence of negative consequences attempt to reduce the uncertainty about or prevent the occurrence of an unexpected event. Within business buying behavior, these attempts focus on the reduction of endogenous uncertainty because exogenous variables as a general rule are given.

For reducing endogenous uncertainty, purchasing managers try to obtain more information about the behavior of the supplier. Thus, they reduce their uncertainty and gain certainty for prevention. The information helps them to control the behavior of the supplier. Moreover, purchasing managers can try to influence the supplier's behavior.

Actions to reduce the importance of negative consequences occur less frequently. In general, they refer to minimizing the loss. One first option is to shift the risk to another market player. This could be the supplier who has to make sure that the purchased good works properly or a third party such as an insurance company. Furthermore, it is possible to split the risk. For example, if purchasing managers fear to be dependent on one supplier they simply place orders with several sources (multiple sourcing).

2. Perceptions of the purchasing manager

Industrial buyers are not only driven by their motivations but also by their perceptions. For example, purchasing managers perceive price to be more important than quality. In international purchasing situations, the location of the supplier proves to be important. Also, product perceptions have a significant impact on the organizational-buying decision. For example, for products that are similar, the price, specifications, and delivery are important attributes. Furthermore, company-specific attributes like a broad product line, close geographic location, cooperation on unusual size orders, ease of placing orders, reputation, previous performance, and the salesman involved seem to play a more important role on

generic (undifferentiated) markets than on non-generic (differentiated) markets (Parket, 1972, 1973).

3. Learning processes of the purchasing manager

Information acquisition and processing is also of interest to researchers focusing on the purchasing manager as unit of analysis (e.g., Alejandro et al., 2011). Generally speaking, the information behavior of an individual comprises three questions:

- What information is needed?
- What are the sources of information acquisition?
- What information is adopted, kept, and evaluated, and as a consequence, gains importance for the buying decision process?
- What information is needed?

First of all, the subject of the information search is associated with its intended purpose. Different stages in the buying decision process involve different information needs. If, for instance, at the beginning of the buying decision process, purchasing managers try to get an overview of potential suppliers, they need market information. To compare several suppliers in a later stage, however, they need information about the applicability of the goods offered.

The type of information needed depends on the buying classes. According to Robinson, Faris, and Wind's (1967) classification scheme, we differentiate between the new task, the modified rebuy, and the straight rebuy, depending on the newness of the problem, the amount and kind of information required, and the extent to which new alternatives are considered. It seems obvious that the newer the task is for a purchasing manager the more information is needed.

Furthermore, the question of which information is needed is influenced by the purchasing managers themselves. According to their responsibility, authority, objectives, motives, interest, education, and experiences, they determine the information needed.

- What are the sources of information acquisition?

When searching for information, individuals use different sources: experiences of the past, advertisements, discussions with different suppliers, visit to trade fairs, articles in newspapers and magazines, catalogues, brochures, manuals, handbooks, etc. Multiple sources of information are usually used in the industrial-buying process in order to inspect quality which results in lower uncertainty (Alejandro et al., 2011).

The usage of an information source depends on the information needed (see Table 4.1). Individual preferences strongly influence the information source used. Empirical studies have shown that in general, personal information sources are preferred to anonymous information sources. This is particularly true for buying

Table 4.1 Type of information sources

Type of information	Sources
Market conditions (market and economic trends, laws, production costs, market capability)	Authoritative sources: top management, internal reports and documentations, business publications
Capability of the supplier (prices, alternative sources, reliability, and supplier's competence)	Sales personnel of the chosen and other suppliers
Purchase needs/motifs (required quality level, technical capacity of different products, need, supplier's capacity)	Product users
Market boundaries (laws, possible substitutes)	Catalogues, registers, purchase contract material

situations associated with a high perceived risk. Personal information sources are perceived to be more credible (Bienstock & Royne, 2007). Therefore, the information provided is more accepted and leads to more commitment in the buying process. A recent advancement in the purchasing process is the emergence of online business-to-business marketplaces. These relatively new information sources emphasize the importance of trust building from the selling firm's perspective (Pavlou, 2002).

- What information is adopted, kept, and evaluated, and as a consequence, gains importance for the buying decision process?

Information processing is composed of receiving the information, its interpretation, and its retention. Which information is received, how it is interpreted, and what information is retained depends on personal factors like interests, objectives, and desires of the individual person. Generally speaking, persons do not absorb all the information with which they are confronted everyday. And they retain only a fraction of the information absorbed. This phenomenon is called selective perception. From the great amount of information available, individuals select only a little, depending on their own desires and objectives.

Despite selective perception, persons involved in business buying process are confronted with a multitude of stimuli and information which they have to process and condense to ultimately come to a decision. The adequate evaluation of numerous information bits is costly and leads to complex intellectual processes. Consequently, persons use simplified schemes of thinking. The buyer may conclude from:

- One single impression to the entire product quality
- One single impression to another single impression
- The entire product quality to one or several single impressions

However, with decisions which are important for buyers, more complex evaluation models apply. In general, they follow a systematic and more rational scheme. Complex evaluation models are characterized by a condensation of several features to an overall judgment. Because they integrate multiple attributes, they are also called multi-attribute models. A typical example is a scoring model. As can be seen from Table 4.2, a scoring model includes choice criteria (rows) and alternatives (columns). The persons involved in the buying process evaluate the alternatives according to their performance with regard to the choice criterion (in the example a scale of one [=fully satisfying] to five [=hardly satisfying] is applied). It is common to also include weight factors representing the importance of a choice criterion relative to all criteria (summing up to one). Interpreting the data in Table 4.2 we see that machine A satisfies the criteria better than machine B.

Table 4.2 Scoring model

Criteria	G	Machine A		Machine B	
		Satisfaction	Evaluation	Satisfaction	Evaluation
Failure times	0.20	1	0.20	2	0.40
Low use costs	0.15	4	0.60	1	0.15
Tolerances	0.20	2	0.40	2	0.40
Installation times	0.15	2	0.30	4	0.60
General and spare part service	0.20	2	0.40	4	0.80
Delivery time	0.10	4	0.40	1	0.10
<i>Aggregated points</i>	<i>1.00</i>		<i>2.30</i>		<i>2.45</i>

4.2.3 The Buying Center

While it is evident that purchasing managers affect the purchasing process that takes place, it is equally evident that they do not act alone. Rather, they are involved in a system of inter- and intra-firm transactions and have a functional role that they must perform. In general, the buying process involves many people at all levels in the firm, often with vastly differing views. The group of people involved in the decision process is referred to as the buying center (Webster & Wind, 1972a). The buying center is a complex, multi-person group within the buying organization. However, it is not always easy to determine the boundaries of the buying center. Due to the personal relationships of individuals, there may even be persons outside the firm who consciously or unconsciously, intentionally or unintentionally, influence the purchase decision.

By involving several people in the purchase decision process, the risk of coming to a wrong decision is reduced for the firm as well as for the persons involved in the decision:

First, a firm aims to reduce the risk of a wrong decision by labor division. It is assumed that each member of the buying center has other information, experiences, knowledge, and capabilities which, when brought together, should lead to the best alternative.

Second, the risk of a single person is reduced by acting within a group. On the one hand an individual does not have to rely on his or her own capabilities to make the right decision. On the other hand it is not just one person's responsibility if a wrong decision is made.

Based on these considerations, we may assume that individuals are members of a buying center because of their responsibility for specific tasks in the purchase decision process. The organizational structure of a firm then asserts that persons with different information are involved in the purchase decision process in order to reduce the risk associated with a wrong decision.

Furthermore, people may be involved in the buying decision who are not members of the buying center, but who have a personal interest to influence the decision or the selection of a specific supplier (Hillier, 1975). Therefore, the buying

Table 4.3 Tasks and interests of different departments in a purchase decision process

Department	Task/Interest
Marketing	Achievement of competitive advantages through procurement activities, cares for the features and their influence on the buyer's value chain
Development and construction	Idea generation for specifications, evaluation of technical features, make-or-buy considerations, value analysis, "buy American," "play it safe"
Production	Security of the production process, simple handling, low production costs
Research and development	Decides about the technical basis, determines the company's future technological development
Staff departments	Evaluation of effects for company as a whole, independent from interests of individual departments
Company executives	Establishing binding purchase criteria for future purchase situations, confirmation of purchase decisions, prescribing criteria for strategically important procurements
Procurement	Supplier search and evaluation, routinization of procurement, responsible for cost structure, securing of long-term supplier relations, erection and maintenance good supplier relations

center is not necessarily formally fixed in the organizational structure of a firm but is an informal, problem-oriented group that participates in the purchase decision process. In fact in the buying center, two structures overlap: First, the formal structure of an organization, which is reflected by the labor division and the specific functions within a firm and second, the informal structure of a firm that reflects the informal interrelationships between the individuals as well as their individual interests and motives.

The different motivations of the persons involved can be differentiated into task-related and non-task-related goals (Webster & Wind, 1972b). Task-related goals result from the hierarchical position of the persons involved. Table 4.3 provides an exemplified overview of tasks and interests of different departments in a purchase decision process (e.g., Frankwick, Ward, Hutt, & Reingen, 1994; Sheth, 1973; Strauss, 1962).

The interests and motives of the people involved determine the non-task-related goals. An example would be the expectation to be appreciated by a superior.

Task-related and non-task-related objectives may even contradict. They may, however, also be in complementary relations, i.e., two goals are achieved simultaneously.

First answers to the question of who is involved in the buying decision process as a buying center member may be found by examining the functions of all the persons involved, their hierarchical positions, and their roles in the purchase decision process. Studies (e.g., Sheth, 1973) show that in the first place, in industrial-buying decisions, the departments of construction, procurement, and to a lesser degree, production, participate in a purchase decision. Top management, however, plays only a minor role.

Moreover, which departments are involved depends on the purchased product and the purchase situation. In summary, a literature review (e.g., Glock & Hochrein, 2011; Hillier, 1975; Johnston & Lewin, 1996; Juha & Pentti, 2008; Lewin & Donthu, 2005; Moosmayer, Kunter, & Siems, 2012; Robinson, Faris, & Wind, 1967; Sheth, 1973) proposes the following suggestions about the influence of the product:

- The more important the purchase decision, the bigger the responsibility of those participating;
- The more individuals are affected by the purchase decision, the greater the probability that they get involved and the more committed they are;
- Environmental uncertainty is related to greater discretion to lower levels in purchase decisions and a lesser use of formalized rules and procedures;
- The greater the uncertainty, the more probable a purchase decision is made by a small number of people or persons on a high level;
- A high level of perceived risk in the buying situation is associated with a high degree of centralization and a low degree of formalization and specialization of the buying center structure. Hence, higher levels are more often involved in new task purchase situations than in straight or modified rebuy purchase situations.

Furthermore, the size of the buying center is addressed in quite a number of studies (e.g., Dawes, Dowling, & Patterson, 1992; Garrido-Samaniego & Gutierrez-Cillan, 2004; Hillier, 1975; Johnston & Bonoma, 1981; Johnston & Lewin, 1996; Laios & Xideas, 1994; McQuiston, 1989; Sheth, 1973; Webster & Wind, 1972b) with the following findings:

- The larger the size of an organization, the bigger the buying center
- In nonprofit organizations more people participate in the buying decision process
- The buying center for investments is bigger than for nondurable goods
- The greater the complexity of a purchase, the bigger the buying center
- New task purchase situations are characterized by a larger buying center than rebuy purchases
- In buying situations with a high degree of time pressure, the buying center is smaller than in situations with less time pressure
- Generally, it is shown that the more important a purchase is, the larger the buying center

The role allocation in a buying center is largely analyzed by Webster and Wind (1972a) (see also Nagle & Holden, 1998). Roles are defined as other persons' behavioral expectations associated with a social position. Those expectations are independent of the person; however, they are valid for any person in that position. Webster and Wind (1972a) differentiate five different roles in a buying center (Webster & Wind, 1972a):

- User

The user is the person who actually needs and works with the product. Two types of user can be distinguished:

One type of user works directly with the purchase product. In general, users of this type have little or no formal decision rights in the purchase process. In other words, they are rarely found on higher hierarchy levels. They can positively influence a purchase decision process by giving the impulse for a certain purchase or by determining choice criteria which result from the application of the product. However, they can also have a negative impact on the purchase decision by refusing to work with products of a specific supplier. Thus, they can either prevent a supplier getting into the evoked set, or they can make an investment fail if their reluctance arises only after the purchase. Hence, they often decide about success or failure of a purchase.

As a second type of user, we categorize those who do not apply the product directly but carry responsibility for its proper use and frictionless application in the production process. This may be, for example, a technician or a plant manager, both of whom are responsible for the production process. In general, when being involved in the buying decision process, their influence as users is greater due to their hierarchical position.

- Buyer

Buyers are those members of the buying center who have responsibility for executing the purchase. In many cases, this role is assigned to the purchasing manager or another person in the purchase department. The buyers identify potential suppliers, negotiate contracts, and arrange delivery dates and payment plans. Their influence depends on the financial value of the investment and is in fact determined by the job description.

- Decider

Deciders are the ones who set the course for a problem to be solved or who are responsible for the selection of a specific supplier. They make the final decision. In general, deciders have the legitimacy to make the final purchase decision or at least they act accordingly. However, they are not necessarily the ones who officially settle or sign the contract. Often, they act behind the scenes and pull the strings that lead to their preferred purchase decision. If the purchase is complex, a member of the top management may be the decider. Sometimes the role is assigned to a decision committee, e.g., a board of directors. Then, however, conflicts may arise.

- Gatekeeper

Gatekeepers affect the buying decision by controlling the information flow to other members. Gatekeepers assure that certain information is spread in the buying center, and that other information is prevented from being circulated or transmitted.

Furthermore, they can facilitate or constrict the accession of persons to the buying center. Traditionally, secretaries or assistants to the executives are gatekeepers. In more complex purchase situations, this role may be assigned to the purchasing manager.

- Influencer

Influencers are members of the buying center who influence the buying decision by dispensing advice or sharing expertise. Thus, the influencer can be a person within the company, a customer, consultant engineer or consultant who has only low authority. However, influencers determine choice criteria and consequently control the evoked set of potential suppliers. They gather information that sheds light on the suppliers and their products. The influencer may be formally invited to participate in the buying decision process. It may, however, also be a person who interferes uninvited.

Although not included in the original model proposed by Webster and Wind (1972a), a sixth role is often added to the concept. Initiators get the buying process started by first recognizing the need to make a purchase (Bonoma, 1982). They inspire other persons to be proactive in advancing the purchase.

Table 4.4 summarizes the roles and their characteristics. Generally speaking, each person involved in the buying decision process is an influencer. But not all of the persons involved are simultaneously assigned to other roles. Often the same role is assigned to more than one person. This is particularly true for the influencer and the gatekeeper. Furthermore, one person can incur more than one role, e.g., a member of the purchase department who is the buyer as well as the gatekeeper.

It is not necessarily the case that all roles occur in a buying decision process. The more complex the process and the more people are involved, the more probable all roles are occupied.

By examining the different roles in the buying decision process, one should emphasize the importance of catering to the various needs and preferences concerning information of the buying center roles in the company. Hence, the supplier company should develop different communication strategies for each role belonging to the buying center in order to provide tailored information which satisfies their needs (Töllner et al. 2011).

Table 4.4 The role model of Webster and Wind (1972a)

Role	Feature
User	Uses the good, can refuse to work with it if he is not in favor of it
Buyer	Executes the decision. Chooses suppliers and negotiates with them
Decider	Makes the final purchase decision
Gatekeeper	Controls and filters information streams into and out of the buying center
Influencer	Defines purchase criteria and delivers information for the evaluation of alternatives

4.2.4 The Buyer–Seller Dyad

Until now we have focused on the action of a firm, an individual, or a buying center. However, in our definition we describe business buying behavior as a system which is characterized by interactions of individuals in- and outside the firm. Examining only the role allocation in a buying center alone does not capture the interactions among the persons involved in the buying decision process. In particular, communication, conflicts, and power are neglected. The dyadic paradigm instead focuses on those two-person, two-group, or two-organization interactions (Bonoma et al., 1977; Bonoma & Johnston, 1978; Johnston & Bonoma, 1981; Johnston & Lewin, 1996).

In organizational-buying decisions, the dyadic paradigm places emphasis on the interactions that take place between the buyer and the seller. On one side of the dyad are the activities that take place within the buying firm. On the other side of the dyad are the activities that take place within the selling firm. To concentrate either on the buyer (as we have done in Sects. 4.1–4.3) or the seller (Puri, 1992; Puri & Korgaonkar, 1991; Woodside, Taylor, Pritchett, & Morgenroth, 1977)³ alone actually violates the social nature of the buying process. In fact, the purchase transaction can be described as a social-exchange situation where we have to consider personal and role-typical relationships between the buyer and the seller. Both the buyer's and the seller's behavior are influenced by role expectations about the other's behavior that result from the specific interaction situation. When interacting, the buyer's behavior influences the seller's behavior and vice versa. Consequently, business buying behavior rejects the application of the stimulus–response approach for analyzing buying behavior.

Dyadic interactions between a buyer and a seller result in relationships of mutual dependence involving commitment to one another (Hakansson & Ostberg, 1975). Hence, the dyadic perspective often meets the analysis of buyer–seller relationships with variables like power/dependence, behavior/performance monitoring, cooperation/trust, adaptability, and commitment (e.g., Waluszewski, Hadjikhani, & Baraldi, 2009).

4.2.5 The Organization as a System

A perspective integrating the stimulus–response approach that uses the firm, the purchasing manager and the buying center as unit of analysis and the dyadic perspective of industrial buyer–seller relationships is the systems model approach. This approach is probably the best way to incorporate and understand all the complexities and interactions that take place in industrial-buying behavior. From this perspective, buying decisions are not only a function of the firm, the purchasing manager or the buying center, but of all interactions that occur in the environment,

³The activities of the seller are discussed as the “selling center” in the literature.

between the firms, and within each firm (Johnston & Lewin, 1996; Mattson & Johanson, 2006; Zaltman & Bonoma, 1977).

However, due to the complexity of this perspective, empirical applications that integrate all units of analyses are rare. This complexity is exemplified by a study of Hillier (1975) who studied 17 organizations over a 3-year period. His classification of industrial products distinguishes between production services, advisory services, and ancillary services; production facilities, primary equipment, operational equipment, and ancillary equipment; product constituents; and product transformers. Additionally, Hillier developed a group model of the purchasing process he called “decision atomic viewpoint.” In the nucleus (center) was the project team responsible for the purchase. The first level of electrons orbiting the nucleus was the group of individuals exerting primary constraints, then a level of relevant others, and finally a level of others outside the firm. The complexity of the decision atom was a function of the commercial complexity of the negotiations, the behavioral complexity of the human interactions, and the characteristics of the product.

4.2.6 Summary

In this chapter we got to know different perspectives to the answer of who the industrial buyer is.

We can view the unit of analysis as being: (a) the firm, (b) an individual acting in a firm, usually described as the purchasing manager, or (c) a number of persons involved in the buying decision, called the buying center. These views have in common that only one side of the transaction is analyzed: that of the buyer. Traditionally, the analysis of consumer behavior industrial-buying behavior, thus, is analyzed from a stimulus–(organism)–response perspective. The focus of the analysis is on the characteristics of firms, individuals, or buying centers that influence behavior. Industrial-buying behavior is understood as a process that is influenced by situational variables.

In contrast, the dyadic perspective concentrates on the interactions between a buyer and a seller. Therefore, both sides of the dyad are analyzed. The focus of the analysis lies on the relationship between a buyer and a seller. Focusing on interactions, aspects of interaction and communication like conflicts, power, and negotiations are at the core of the analysis.

Last but not least, the systems model approach tries to integrate both perspectives. However, due to the complexity of the integration of both perspectives, the systems model approach is not only hard to grasp but also difficult to validate empirically.

As such, in the following chapter we break down business buying behavior in models that find their roots in the stimulus–organism–response tradition and models that favor a dyadic perspective of analyzing industrial-buying behavior. Finally, in the tradition of the systems model approach, we try to integrate both perspectives into one model of industrial-buying behavior.

4.3 Analyzing Industrial-Buying Behavior

4.3.1 Stimulus–Response Approaches to Industrial-Buying Behavior

4.3.1.1 Basic Assumptions

Theoretical and empirical works that analyze industrial-buying behavior through a stimulus–response or stimulus–organism–response perspective of cause and effect have several assumptions in common.

First of all, they view the buying process as a reaction generated by an individual buyer resulting from the buyer’s exposure to various stimuli presented by a supplier such as industrial salesmen, advertising, prices, etc.

Following this perspective, the unit of analysis should be the firm or the individual or a group of individuals, i.e., the buying center. Therefore, the models developed in this branch of research study industrial-buying behavior separately from the selling firm as actions taken by a separate individual or various individuals from the buying firm. As such, they focus on variables that affect the industrial-buying process such as individual choice processes, personality and intrapersonal dynamics, as well as economics models of expected utility and rationality.

Third, approaches following this perspective assume that the major distinguishing characteristic of industrial-buying behavior compared to consumer behavior lies in the industrial buyer’s rational emphasis placed on cost factors and economically justified decisions. As a consequence, the key theoretical processes characteristic for industrial-buying behavior are rational decision making, including decision optimization, strategic choice processes, and information processing.

Finally, the theoretical and empirical research projects with a stimulus–response perspective have in common that they usually assume that the industrial-buying process takes place over time and is a logical, chronological series of well-planned and executed phases of rational decision making.

This view is characteristic for the preliminary thoughts and research about industrial-buying behavior. It can be traced back to the late 1960s when interest in studying and understanding the organizational-buying process began to increase dramatically. In the following, we present three models as representatives of this research stream. They may be called the genesis of research in this area. In fact, these three works together laid the conceptual foundation for the study of organizational-buying behavior. Up to today, hundreds of conceptual and empirical research projects either extend or test part or all of the models proposed by these authors.

4.3.1.2 Specific Models of Industrial-Buying Behavior

The BUYGRID Model

The BUYGRID model developed by Robinson, Faris, and Wind in 1967 is one of the first and most influential models of organizational-buying behavior. In their book “Industrial Buying and Creative Marketing,” they combine Faris’s (1967)

Table 4.5 The three buying classes presented by Faris (1967)

Buying class	Newness of the problem	Information need	Consideration of new alternatives
New task	High	Maximal	Extensive
Modified rebuy	Average	Average	Limited
Straight rebuy	Low	Minimal	None

three types of purchase situations with an eight-stage model of “the industrial-buying process” to create the “BUYGRID framework.”

The buy class framework presented by Faris (1967) defines purchase situations on three different dimensions:

- The newness of the purchasing problem for the persons involved in the buying process
- The amount and kind of information required
- The extent to which new alternatives are considered

By combining these three characteristics, three types of purchase situations can be distinguished: the new task, the modified rebuy, and the straight rebuy (see Table 4.5).

In a new task situation then, a purchasing organization has no previous purchase experience, i.e., the problem occurs for the first time and therefore differs from previous problems. The persons involved in the buying process need a great deal of information to come to a decision. They consider a relatively large number of alternatives to be able to identify the best alternative.

In a modified rebuy situation, the need or desire to replace an existing product or service arises. Therefore, the persons involved in the buying decision process have experiences from previous similar purchases. Hence, the situation is not completely new to the firm, but there may be new information or alternatives to be considered. This situation may occur if a company wants to switch its supplier for better prices, quality, or delivery time. This situation may also occur if new technologies are available on the market or the organization has new needs for products or services it has already purchased in the past. Modified rebuys require less time and effort than new task situations. In general, the persons involved in the buying process know the purchase requirements and a few potential suppliers. The consideration of new alternatives is limited. It often simply means that an approved supplier list is modified by adding or dropping suppliers.

Straight rebuy situations are routine purchases, such as raw materials or spare parts that an organization regularly needs. Products and services are usually simply reordered from the last supplier and, thus, no new alternatives are considered. The problem is therefore not new and the buying organization has a large amount of previous purchase experience. Little, if any, new information is needed.

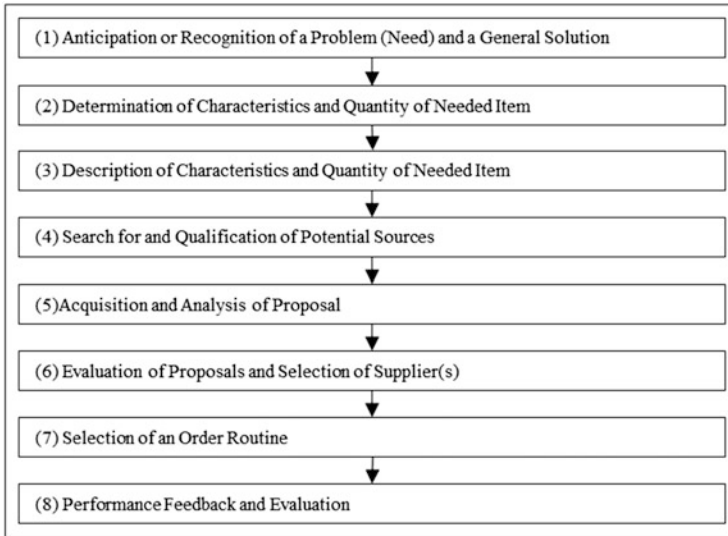


Fig. 4.2 The phases in industrial-buying behavior (*Source: Robinson et al., 1967*)

Robinson, Faris, and Wind (1967) combine this buying class framework with eight stages or phases in industrial-buying behavior whose existence and duration depend upon the purchase situation (Fig. 4.2).

In a new task situation, all the phases exist and are extensive. With a straight rebuy, however, an organization quickly passes through all the phases, perhaps even skipping one.

The BUYGRID model is very simple and, therefore, widely accepted in business. It is often used in marketing-strategy discussions. While the BUYGRID model is empirically based on a descriptive study of three organizations and a large number of purchasing situations actually faced by them, there are several problems associated with it.

First of all, the buying class framework seems to combine at least three separate dimensions of the purchase situation. The importance of the purchase, the novelty of the product or service to the organization, and the complexity or difficulty of evaluating the purchase alternatives all need to be factored together. This has some undesirable properties for explanatory purposes. For instance, if a company is contemplating the purchase of minor supplies not bought before (so to be viewed as a new task), such as pencils, the BUYGRID would predict a relatively more drawn-out process than a purchase by the same company replacing its old fleet of automobiles.

Additional criticism of the model is found in empirical studies that did not confirm the three dimensions in realistic purchase settings. In fact, they show variations for the newness of the product or service, as well as the amount and kind of information required, but not for the extent to which new alternatives are considered. Instead, new alternatives are considered (1) if a large number of persons

are involved, (2) if an organization is uncertain which alternative might be best, and (3) if price and delivery conditions are particularly important. Hence, the search for alternatives is a means to reduce uncertainty.

Third, from a practical point of view it is an almost impossible task for an industrial marketer to identify those of his actual and potential customers that fall into each of the three purchase situations, except through a detailed analysis on an individual basis. Different marketing strategies would be difficult to develop based only upon the use of the BUYGRID.

Finally, Webster and Wind (1972b) criticize the model as lacking of predictive ability and offering “little insight into the nature of the complex interplay between task and non-task variables (Webster & Wind, 1972b).”

The Organizational-Buying-Behavior Model

With their organizational-buying-behavior model, Webster and Wind (1972a) attempt to integrate a large number of individual, interpersonal, interorganizational, and environmental variables into a consistent framework. The basic assertion of the model is that all organizations—profit, nonprofit, public, and private—buy in a similar manner. Organizational-buying behavior is seen as a decision-making process carried out by individuals in interaction with others in the context of a formal organization.

The buying decision process is influenced by several variables:

First, the model contains a number of environmental influences such as economic, political, legal, cultural, and social institutions and forces. These environmental factors are both a source of information and a source of constraint acting on organizational-buying behavior.

Moreover, the buying organization itself is a factor influencing the buying decision process. Organizational goals motivate and direct the members of the buying center (comprising all individuals and groups who participate in the purchase decision process). Their behavior is constrained by financial, technological, and human resources of the organization.

A third influencing factor is the network of interpersonal relationships among organizational members and, more specifically, those within the buying center. These individuals often have different responsibilities and need to fulfill different role expectations. To understand the nature of participation in the buying decision process, Webster and Wind view it essential to identify each individual's role set as it is characterized by expectations, actual behavior, and relationships with others.

Finally, Webster and Wind see organizational-buying behavior reducible to individual behavior where the individual is at the center of the buying process. Therefore, the organizational members involved are the targets of a marketer's marketing strategy in contrast to having the firm as a target. Webster and Wind emphasize the need to understand the psychological characteristics of the buying center members and to study their attitudes and preferences toward particular products and suppliers. Yet, they fail to establish a process of identifying the organizational members who play the various roles in the buying center. Figure 4.3 gives a summary of the organizational-buying behavior model.

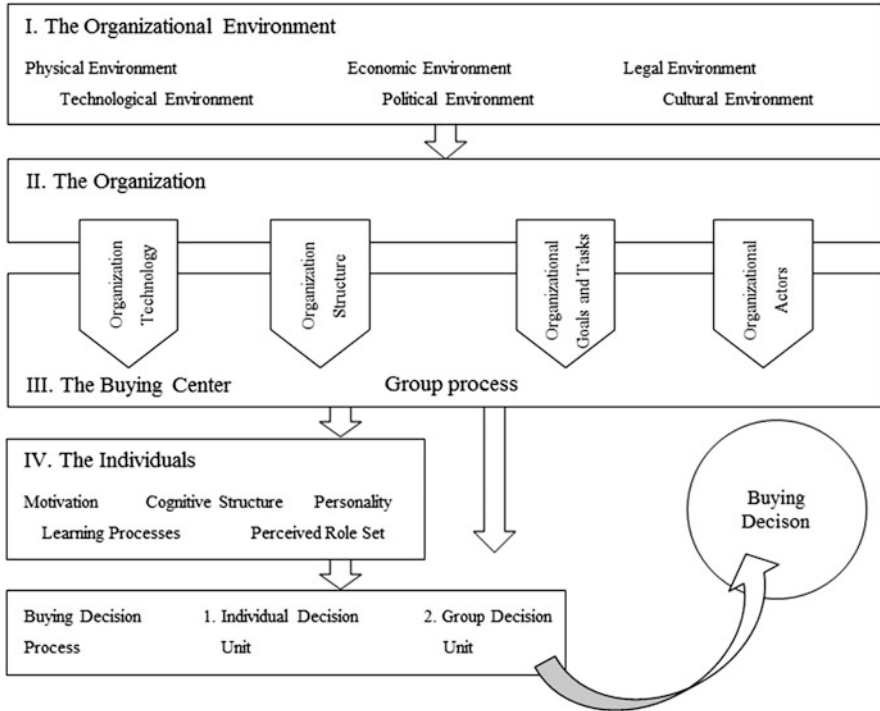


Fig. 4.3 The organizational-buying behavior model (based on: Webster & Wind, 1972a)

The model is loosely constructed and offers no testable properties. Similar to the BUYGRID framework, the model at best provides vague predictions of actual behavior, yet it certainly allows excellent retrospective explanation of purchasing decisions. However, its merit lies in the presentation of major sets of factors that influence the buying decision process. Therefore, it provides marketers with information about the variables they have to analyze in their attempt to understand organizational-buying behavior.

The Industrial Buyer Behavior Model

The industrial buyer behavior model was developed by Sheth (1973). It is an extremely complex stimulus–response model of the buying process with a large number of variables that are interwoven in a flowchart-type diagram. The model is an attempt to describe and explain every type of industrial-buying decision from simple to complex. It recognizes the existence of differences between the various members of the buying center as to their expectations concerning product characteristics and suppliers. To capture the realism and complexities of industrial-buying behavior, the model incorporates empirical research on buying policies and practices of purchasing agents, observations of industrial buyers, as well as theories, models, and reports on industrial-buying activities.

Sheth (1973) reconciled and connected many disparate pieces of empirical and conceptual work to develop his model. The model includes product-specific, company-specific, and individual-difference variables, as well as differences between individual roles. Sheth (1973) assumes considerable interaction takes place between the individuals involved in the buying decision process, while they are often required to decide which alternative to select jointly. He, furthermore, supposes that individuals who have different responsibilities in the organization tend to consider different criteria in their evaluation of available alternatives. For research purposes however, it seems reasonable to first analyze who has what influence under what conditions before studying individual’s preference patterns.

A second focus of the Sheth model are the conditions that precipitate joint decision making among the individuals involved in the decision process. It distinguishes several factors that are either product specific (e.g., the repetitive character of the purchase) or company specific (e.g., size or managerial philosophy).

Finally, the model characterizes the process of joint decision making in industrial-buying behavior. Sheth (1973) proposes various interparty conflict types and methods of resolution. Figure 4.4 gives an overview of the Sheth model.

In summary, the Sheth model is an attempt to apply some of the more important concepts from the area of organizational-buying behavior to the study of industrial-

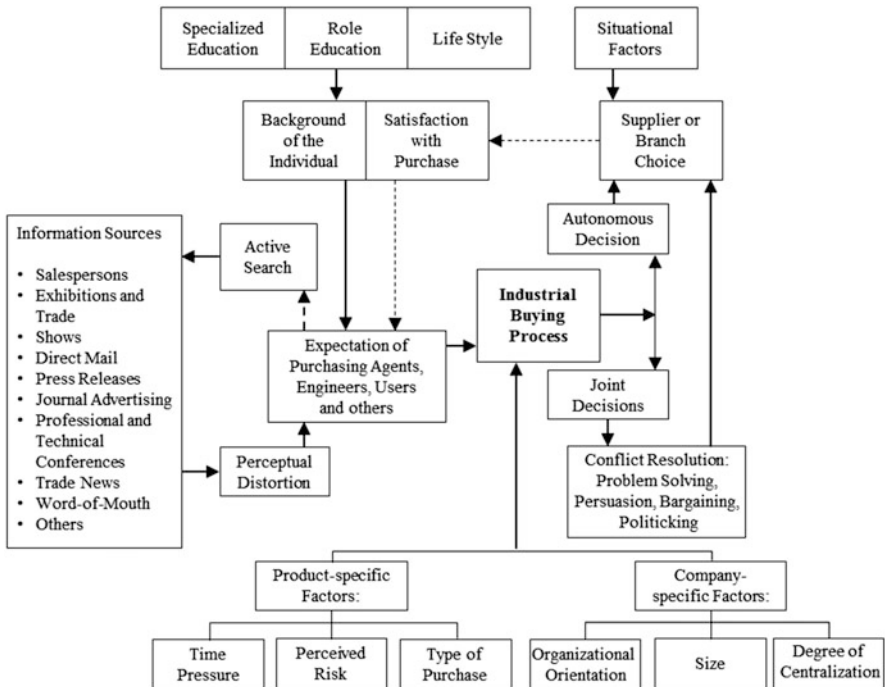


Fig. 4.4 The industrial buyer behavior model (based on: Sheth, 1973)

buying behavior. Its merit lies in the structuring and ordering of the mass of existing literature and complexity of industrial marketing. However, the variables included in the model are loosely connected and only vaguely defined. Therefore, no testable hypotheses can be drawn from the model. Furthermore, research has shown that parts of the Sheth model are simplistic in the treatment of cause-and-effect factors in industrial-buying behavior. Thus, the model has been broken down in the domains of decision-making process, information search, buy class framework, and buyer–seller interactions models.

4.3.1.3 Synopsis and Extensions of the Original Models

As described earlier, the models presented above are three of the best known and most influential models in research on industrial-buying behavior. They provide the general categories of constructs expected to influence business buying behavior.

First, all three models contain environmental and organizational influences as well as the characteristics of the individuals involved in the buying decision process. Environmental factors influencing the organizational-buying behavior include variables such as physical, political, economic, suppliers, competitors, technological, legal, cultural, and global. Organizational variables include size, structure, orientation, technology rewards, tasks, and goals of an organization. Variables describing participating individuals' characteristics include education, motivation, perceptions, personality, risk reduction, and experience of a person involved.

The BUYGRID model and the industrial buyer behavior model have two other variables in common. First, the models consider the purchase (product) characteristics as an influencing factor including variables such as buy task, product type, perceived risk, prior experience, product complexity, and time pressure. Second, they contain seller characteristics, or the criteria by which potential vendors are evaluated, described by variables such as price, ability to meet specifications, product quality, delivery time, and after-sales service.

Webster and Wind introduce a sixth construct in their model which they refer to as group characteristics. These characteristics include size, structure, authority, membership, experiences, expectations, leadership, objectives, and backgrounds. Webster and Wind argue that every buying center is unique, and that it is the special combination of organizational and group characteristics that contributes to this uniqueness.

With informational and conflict negotiation characteristics, the Sheth model introduced two further constructs. The first group of characteristics describes the sources and types of information each decision maker is exposed to and his/her participation in the active search for this information (see also Fig. 4.3). With the second group of characteristics, Sheth posits that decision makers employ a variety of methods to resolve the inevitable conflicts associated with joint decision making. Based on a typology developed by March and Simon (1958), Sheth distinguishes between problem solving and persuasion (which are useful and rational) as opposed to bargaining and politicking (which are inefficient and non-rational).

In fact, several empirical studies, testing part, or all of the models noted that the three models were correct in their prediction that the identified factors influence organizational-buying behavior. However, since the models in the early stages of research often fail to capture all the concepts, variables, and relationships needed to consistently predict complex behavioral outcomes, hundreds of conceptual and empirical research projects extended the models proposed by these authors. In the works following the three models, two additional constructs emerged as being essential for understanding organizational-buying behavior: decision rules and role stress.

The first construct, decision rules, is influenced by environmental, organizational, purchase, and seller characteristics. It is expected to vary across the stages of the organizational-buying process. In some organizations, the decision rules may be formalized rules and procedures, which may include formulas for selecting suppliers. In other organizations these may be informal rules based on buyers' experience and rules of thumb (Vyas & Woodside, 1984).

The second construct, role stress, is usually conceptualized as role ambiguity and/or role conflict. Role conflict is defined as the degree of incongruity or incompatibility among purchase expectations. Role ambiguity refers to the extent to which information is missing about: (1) the expectations associated with a purchase, (2) the methods for fulfilling known purchase expectations, and/or (3) the consequences of role performance. An example for role ambiguity would be a directive from management that mandates both a decrease in the cost of certain key components and a concurrent increase in the quality of the same components. Buying center members have to deal with combining these seemingly conflicting goals. They are however uncertain about the consequences if they fail.

Figure 4.5 incorporates the nine original influencing factors identified by the models of Robinson, Faris, and Wind (1967), Webster and Wind (1972a), and Sheth (1973) as well as the two additional constructs added later. It is constructed on the basis of an extensive literature, including the three original models and subsequent conceptual and empirical articles.

4.3.2 Dyadic Approaches to Industrial-Buying Behavior

4.3.2.1 Basic Assumptions

In contrast to the stimulus–response perspective, the dyadic approaches of analyzing business buying behavior are more oriented toward a transactional viewpoint. The unit of analysis is not a firm, an individual, or the buying center responding to stimuli but rather interactions between those involved in the buying decision process both inside and outside the purchasing firm. The dyadic approach assumes that responses also influence their stimuli. It acknowledges the social character of business buying behavior and views buying decisions as negotiated settlements among all those individuals involved internally in the buying firm as well as those external to it. In essence, the purchase decision is viewed as a social result from all these forces. The purchase decision process is viewed as a mass of

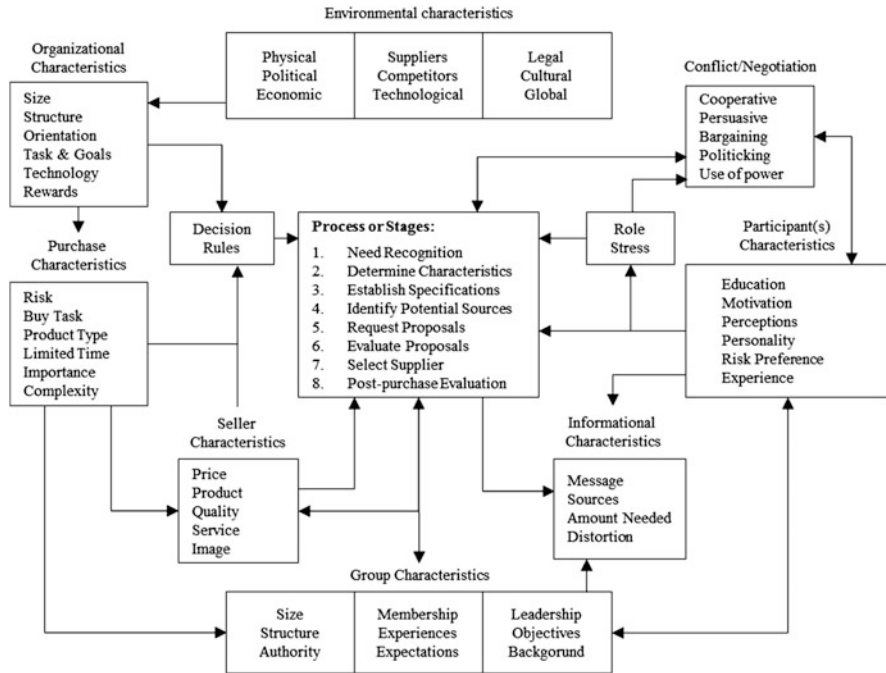


Fig. 4.5 An integrated model of organizational buying behavior (Source: Johnston & Lewin, 1996)

interactions that involve communication between people both inside and outside the firm (Möller & Halinen, 1999; Ulaga & Eggert, 2006).

The dyadic paradigm describes industrial buying as an interactive process that cannot be studied in isolation from selling and assumes that interactions among the persons involved in the buying decision process should be the basic unit of analysis for studying the transactions of the firm. Communication relationships constitute the research emphasis (Claycomb & Frankwick, 2010).

Therefore, approaches following the dyadic perspective assume that the major factors influencing organizational purchase decisions are social factors rather than rational economic ones. Consequently, they focus on constructs like communication, influence, and power that develop among buying center members as a result of the social model of the industrial-buying process (Brass & Krackhardt, 2012).

While relational variables are key constructs to the communication exchange between the members of the buying center, the dyadic approach does not exclude the use of other variables of which there is already a general understanding. Other variables included in a dyadic model analysis are, for example, environmental, organizational, and purchase characteristics, as well as the personal characteristics of the people in the buying center. However, the dyadic approach understands these variables to be merely supporting variables which help to understand the relationship variables. They are not key constructs of the analysis (Leek & Mason, 2009).

The key element of a dyadic-analysis model is the understanding of the communication network that exists between the persons involved in the buying decision process. Analyzing organizational-buying decisions requires information about dyadic communications that is directly obtained from network members. Assembling all the communications between members, we can form a map of flowcharts and directional graphs. These allow us to locate each member at the focal point of a unique set of information vectors or observe the set of previous message transactions with other members in and outside of the organization. Emphasis needs to be given to the fact that the analysis of the communication network includes the communication patterns on an intra-firm and an interfirm level of analysis. The network may include persons working in the buying firm, even if they are not buying center members as well as members of the selling firm independent from being part of the selling center. Also, there may be a communication network between members from different buying firms as well as between members from different selling firms who regularly meet in trade shows, conferences, exhibitions, and professional associations.

Mapping a communication network shows us who is involved in the buying decision process. However, understanding purchase decisions also involves the understanding of the forces working on the process in specific situations. A number of constructs have been the focus of conceptual and empirical works dealing with these forces. We want to concentrate on power, conflicts, and their resolution as well as negotiations on an intra- and interfirm level to describe the communication processes. On the one hand, we have to examine the bargaining modes, conflict resolution, and the use of power among departments to better understand the buying decision process and to find out whom we have to approach with our marketing activities. On the other hand, understanding negotiations, conflict resolution, and the use of power tells us from a marketer point of view how to behave in interactive situations and how to influence a potential customer of interest (Leek & Mason, 2009; Monge & Contractor, 2001).

4.3.2.2 The Communication Network

The buying decision process can best be described by analyzing the communication network, which consists of the persons involved and their relationships toward one another (Bristor & Ryan, 1987; Kilduff & Tsai, 2003; Klöter & Stuckstette, 1994). The communication network does not necessarily derive its structural configuration from the formal organization per se, but rather from the regularized patterning of behavior and communication flows that characterize the industrial-buying decision process. Hence, we can distinguish between two different types of network relationships. First, a network may be instrumental, i.e., characterized by relationships that are determined by the work process and the formal organization of a company. They contain the exchange of work-related resources such as support or influence. Another type of network may be described as expressive or primary, or a network that is of a more informal nature. These networks are characterized by the development of informal interrelations that include advice and friendship. For organizational-buying decisions both kinds of networks are relevant and should

be considered by a marketer when analyzing the communication network of the persons involved in the buying decision (Johnston & Bonoma, 1981).

Communication networks apply for both intra-firm and interfirm relations (Johnston & Lewin, 1996). That is, those involved in the buying decision communicate with other buying center members and nonmembers inside the firm as well as with members of the vendor firm's selling center or even with persons outside both firms not concerned with the purchase. For instance, members from different buying firms may communicate with one another about their purchase decision as well as with members from other selling firms, e.g., through participation in trade fairs, conferences, exhibitions, and professional associations.

When analyzing a communication network, we have to ask three questions:

1. How do we diagram a communication network?
2. How do we interpret the interrelations found in the communication network?
3. How can people use their positions in the communication network to influence others within the network?

Diagramming the Communication Network

Diagramming the communication network and influence patterns in the industrial-buying center is important to understand the purchase process and to design marketing strategies for industrial organizations (Leek & Mason, 2009). An efficient and effective marketing strategy should be aimed at the specific individuals within the firm having authority and responsibility for buying decisions and not targeted at some broad, vague entity (Webster & Wind, 1972b). As empirical studies have shown, the most central person in a communication network usually acts as a leader and has the most influence. Therefore, we have to measure the centrality of the persons involved in the purchase decision process. Since the purchasing manager usually is the first contact person for a supplier, we concentrate on the analysis of the centrality of the purchasing manager as substitute for the overall power and influence of that individual.

Additionally, we use directed graphs to examine the explicit and implicit influence content in the messages. The overall connectivity of the buying center indicates its efficiency because the greater the connectivity of a group the higher its problem-solving efficiency. For marketing purposes, this measure indicates how much external communication is necessary to fully inform a potential organizational customer of the advantages of a product. The connectedness of the people in the buying center is measured by the degree to which members are linked to each other by communication flows.

Furthermore, our diagram includes a vertical-structural dimension of business buying behavior that primarily concerns hierarchical distribution of authority for buying decisions. The vertical-influence dimension can be characterized by how extensively various management levels become involved in the purchasing process.

Analyzing communication patterns in industrial-buying decisions, we should not only consider vertical levels of influence but also a lateral-influence dimension. We

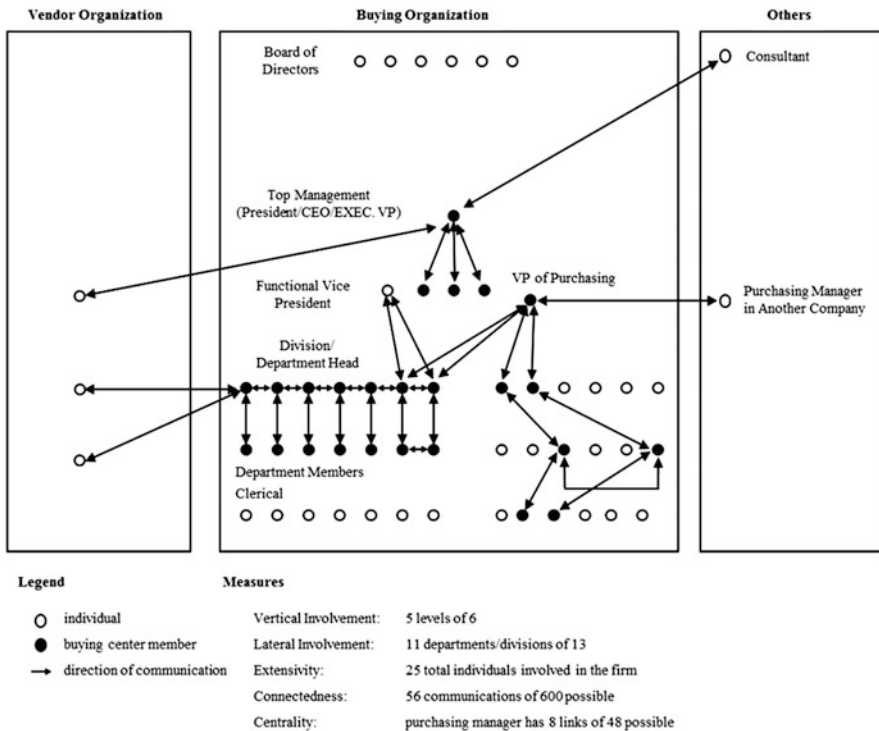


Fig. 4.6 Communication relations in the buying network (Source: Johnston & Bonoma, 1981)

can view it as the number of separate departments, divisions, and/or functions that are involved in the purchase decision/communication network.

Finally, we also measure the extensions of the network which comprise the number of persons involved in the buying decision (Schroder, Driver, & Streufert, 1966). The greater the number of people involved in the industrial-buying decision, the greater the extension of the buying center. For marketers, a greater extension of the system leads to a more diffuse picture of the locus of power and influence on the decision and a more difficult job to target the marketing activities to the right person.

Figure 4.6 depicts a diagram of the organization of a hypothetical buying-decision communication network for a specific purpose. The communication links between those both within and outside the firm are shown.

Positions in the Communication Network

In addition to depicting the communication network in a diagram, we have to interpret the interrelations. A person’s communication behavior determines his or her position within a network. This position enables a person to exercise influence on other persons in the network only to a certain extent. Figure 4.7 summarizes different positions in a communication network.

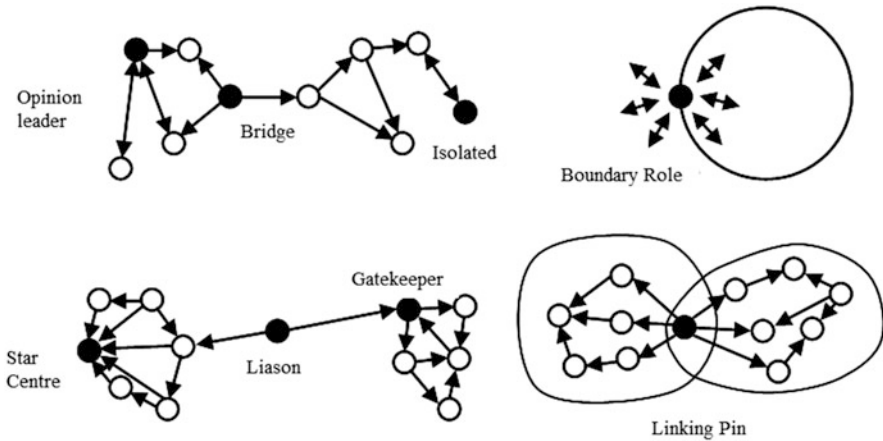


Fig. 4.7 Positions in the network (Source: Rogers & Agarwala-Rogers, 1976)

- Isolated position

Isolated persons are those individuals who are connected with only one other person within the network.

- Liaison position

Persons who link two or more network internal groups without being a member of any of these groups have a liaison position within the communication network. Hence, they represent a bottleneck through which any information needs to be passed when being transferred from one group to another. If a liaison does not fulfill this function, there is no communication between the two groups (Rogers & Agarwala-Rogers, 1976).

- Bridge position

A bridge position is taken by a person who is a member of one group and has a communicative relationship with a member of another group, thereby connecting the two groups. Organizational behavior models refer to the bridge position as a “linking pin” (Likert, 1961, 1967). In these models, linking pins are described as persons who are members of two working groups that are often hierarchically related with one another, hence creating an overlap between the groups. However, a hierarchy between the two groups is not mandatory (Wind & Robertson, 1982). Linking pins can not only be found within a firm but may also refer to persons who connect an organization with its environment or another organization. For instance, we might think of a person who is CEO of two different firms as a salesperson representing different organizations.

- Boundary roles

Persons who have boundary roles (Rogers & Agarwala-Rogers, 1976) connect an organization with its environment. They are characterized by a psychological, organizational, and often also physical distance to other members of the buying network. However, they have a close relationship to the environment of the firm and the members of other organizations. In general, they are the external representatives of the organization influencing the environment in favor of their firm (Adams, 1975). Very often, the purchasing manager is associated with the boundary role (Spekman & Ford, 1977).

- Star roles

Stars—sometimes also referred to as central role—are characterized by their central position in the communication network. They are directly connected to and communicate with a great number of people in the network.

The different positions within the network determine the amount of power and influence persons can exert in order to impact the buying decision for their own good. For instance, boundary roles coincide with a gatekeeper position. The gatekeeper concept was introduced by Lewin, who described gatekeepers as persons who have a strategic position of influence in a communication channel (Lewin, 1958). Gatekeepers are therefore persons in a communication network who, due to their position, can control and filter the information flow. Of course they can use their position to do this in their own interest. Examples for a gatekeeper may be the secretary or the assistant of a manager.

Another distributing center for the information flow within a communication network is the opinion leader (Lazarsfeld, Berelson, & Gaudet, 1948). In general, opinion leaders are often asked for advice by other members within the network (Arndt, 1967; Cox, 1967; Lancaster & White, 1976). Others perceive them as possessing expertise in certain areas of interest. They are very open minded and sociable and have a multitude of contacts (Katz & Lazarsfeld, 1955). Moreover, opinion leaders search more intensely for information and use more sources of information, exhibit higher levels of interest in a subject (Ibidem), and identify more with the content of the information source than other persons within a network (Martilla, 1971). Finally, opinion leaders deviate less from group norms, but nevertheless seem to be more innovative than others (Rogers & Cartona, 1962).

The gatekeeper and the opinion leader concept in fact are very similar. However, they differ in terms of how they exert influence. The links connecting them to other people have different contents. While gatekeepers simply control and direct the information flow, opinion leaders are deliberately asked for advice. Hence, they control and direct opinions, i.e., evaluations of information but not the information itself.

Networking Strategies

In general, three different strategies of influencing other persons within the communication network can be distinguished: (1) gatekeeping, (2) advocacy behavior, and (3) coalition formation. Which strategy a person uses depends on the information distribution within the buying center, the sources of power persons possess, as well as their position within the communication network. In the following analysis we will briefly describe the different types of influencing strategies.

- Gatekeeping

As described above, gatekeepers can control and direct the information flow in a network. They have access to the resource information. In the buying decision process, gatekeepers can exercise power because they have specific information about the product, the company, and the suppliers. Gatekeepers can facilitate or prevent contact between persons within the buying network; they can change or select information to be passed to others (Barzilai-Nahon, 2008).

The more critical the resource information is for the buying decision, the more power a gatekeeper has (Brass, 1984; Ibarra, 1993; Ronchetto, Hut, & Reingen, 1989; Spekman, 1979). This is particularly important if the information is exclusive (Pfeffer, 1981) or if the situation is complex and uncertain (Mechanic, 1964; Pettigrew, 1972).

In general, gatekeeping seems to be a successful strategy for persons with boundary roles (Spekman, 1979). Due to their position at the boundary of the company, persons with boundary roles have access to information not available to others in the buying network. For instance, they can use their particular relationships to suppliers' salesmen to obtain exclusive information. Furthermore, gatekeeping seems to be a successful tactic for liaisons because they are the only link between different groups. Granovetter describes this also as "strength of weak ties" (Granovetter, 1973, 1982).

- Advocacy behavior

Advocacy behavior is based on the relationships a person has developed with other persons of the buying network. This relationship is used to gain support, to find cooperation, and to achieve personal goals. It is characterized by one person declaring him- or herself as advocate for a specific alternative who searches for other advocates and builds a lobby, for example, to support a specific supplier or product. The relationship used for advocacy behavior has various sources of power. It can be based on friendship, personal respect, admiration, or formal hierarchical subordination or superiority.

People use advocacy behavior in conflict situations to win others within the network over to their own opinion. Such activities take time and energy. They assume the goodwill of others. Therefore, they are rarely used for unimportant buying decisions (Strauss, 1962).

In order to gain others as advocates, it is necessary to convince them of the superiority of the preferred alternative while refusing other opinions. This strategy requires information not available to others. Consequently, this networking strategy is often associated with gatekeeper positions and boundary roles (Bristor, 1993).

People who act as advocates for an alternative commit themselves in public. They are less inclined to change their opinion for fear of losing their credibility. Hence, advocacy behavior is a more dangerous strategy than gate keeping. Very often it is associated with leadership conduct and is based on legitimate or expert power (Krapfel, 1982).

- Coalition formation

Coalitions are defined as temporary alliances between persons in the buying network who otherwise pursue different goals (Boissevain, 1974; Morris & Freedman, 1984). When the desired goal is achieved or almost seems to be achieved, the coalitions usually dissolve. People form coalitions to gain access to resources which one person alone could not get. Thus, they try to strengthen their power, to gain influence on a buying decision, or to solve conflicts (Anderson & Chambers, 1985; Boissevain, 1974; Stevenson, Pearce, & Porter, 1985).

Coalitions act as one unit (Bacharach & Lawler, 1981; Emerson, 1962). Their success is determined by the integration into the buying network and by the communication relationships within the coalition. The coalitions internal to the relationships get closer if a dense communication network exists within the coalition. Members of the coalition are less likely to be excluded from the coalition if they have good contacts to members outside the coalition (Morris & Freedman, 1984). They can use these contacts to defend the interests of the coalition and to gain new coalition members. Therefore, coalitions with an elaborate communication network are more successful (Pool, 1976). They facilitate the transfer of information and opinions (Kotter, 1985) and thus helps to gain new supporters.

A coalition's success depends on the possession of resources. The more resources a coalition possesses, the more successfully it can realize its interests, and the more power it can exert. This is particularly important as coalitions are usually formed by weaker members of the buying network against stronger ones (Morris & Freedman, 1984).

Although a coalition is temporarily formed to influence a specific buying decision, it can influence the attitudes and the behavior of its members in the long run. Furthermore, one-time coalitions can support or prevent the formation of other coalitions. They may determine the distribution of resources, establish control systems, or integrate coalition activities in the overall activities of the company (Bristor, 1988).

4.3.2.3 Communication Process

Conflict Resolution

Among the persons and groups of the buying network, conflicts often occur (Sheth, 1973). There are two generic types of conflicts in organizational-buying decisions: task and non-task related (e.g., Webster & Wind, 1972b). Task-related conflicts result from differing preferences and purchase criteria. They can be attributed to the labor division between the members of the buying network and their personal goals (Morris & Freedman, 1984). Non-task-related conflicts result from emotional interrelations between the persons involved in the buying decision. Antipathy and anger play important roles. To illustrate the potential sources of conflicts in an industrial-buying decision, Table 4.6 provides an overview of goals and purchase criteria of various departments involved in the purchase decision process (Barclay, 1991; Smith, 2011; Strauss, 1962).

As can be seen from Table 4.7 members of the buying network have several options to solve conflicts depending on their desire to satisfy own and common interests.

Table 4.6 Potential sources of conflict between the purchasing department and engineering as well as between the purchasing department and work preparation

View of the purchasing department	View of engineering
<ul style="list-style-type: none"> – Price expectations – Costs – Financial/Legal problem perspective – Broad competition, broad specifications – Single orders – Interprets its main competence as suggesting new processes or materials (information advance market knowledge) 	<ul style="list-style-type: none"> – Quality expectations – Benefit – Technological problem perspective – Best function, narrow specifications – Overall order – Interprets its main competence also as introducing new processes or materials (information advance technology)
View of the purchasing department	View of work preparation
<ul style="list-style-type: none"> – Process preparation orders material before they are actually needed – Process preparation makes urgent orders and thus puts the procurement under pressure. Procurement will pay too high prices and has to ask for shorter delivery times. This favor will have to be paid back once. 	<ul style="list-style-type: none"> – Date of order – Date of delivery – Order quantity

Table 4.7 Strategies for conflict resolution (based on: Staehle, 1999)

		Desire to satisfy common interests		
		Low	Middle	High
Desire to satisfy own interests	High	Competition (coercion)		Cooperation (problem solution)
	Middle		Compromise	
	Low	Retreat (renunciation)		Adaptation (compliance)

Competition between conflicting parties develops if the desire to satisfy one's own interests dominates the desire to satisfy common interests. This applies, for example, if the persons involved have much to lose if the outcome does not meet their objectives. Consequently, they try to exert their power and to coerce others to act in their interest.

Members of the buying network cooperate and search for a common solution if they perceive both own and common objectives as important. They resolve conflicts by searching for new alternatives that meet the objectives of all parties. This kind of conflict resolution is ideal. However, it remains questionable if the search for alternatives always meets the objectives of all parties in the same way.

If the persons involved in the industrial-buying decision have an average interest in both of the conflicting goals, compromise is favorable. The conflicting parties abandon their position in disfavor to their own objective in order to reach an agreement. It is also possible that one party may realize its own objectives entirely, while the other party's objective will be fully satisfied in the following buying decision.

If both parties have little interest in getting to a solution that meets their interests, the parties simply adapt or even pass on their own objectives. In such a situation, the conflict is not resolved but postponed.

Empirical studies (e.g., Barclay, 1991; Bradford & Weitz, 2009; Strauss, 1962) show that, in reality, purchasing managers generally try to find compromises or search for an alternative in a cooperative manner. However, the selection of a conflict resolution process depends on the conflicting parties. If purchasing managers are in conflict with the salesperson of a supplier or the users in the company, they often prefer cooperation. However, being in conflict with managers further up in the hierarchy, they will probably try to find a compromise or avoid a conflict by adapting (e.g., De Reuver, 2006).

Power

Different persons in the buying network have different influences. This influence is important for the industrial-buying decision. The strength of a person's influence is defined as his or her power. Power comprises every kind of influence ranging from very weak to very strong.

In the literature, the term 'power' is not unanimously defined (Brass & Burkhardt, 1993). Power can be characterized as a capability to influence somebody (Corfman & Lehmann, 1984; Dahl, 1957; Dolberg, 1934; French & Raven, 1959). Such a view emphasizes the contingent character of power but does not assume that power is actually used. Another perspective defines power as the result of an influence, i.e., the change of attitude or behavior of another person (Kohli & Zaltman, 1988; Mechanic, 1964). Other authors, however, argue that the separation between contingent and results-oriented power does not meet reality (Brass & Burkhardt, 1993). We want to adopt this opinion because merely the perception of power can lead to a change in attitude or behavior of a person. Furthermore, the

analysis of business buying behavior is done for planning marketing activities. Therefore, it seems more reasonable to analyze the possibility of power exertion rather than the actual use of power.

In the following, we understand power as the possibility of a person or a group of persons to influence other people's behavior. Thus, power means to break resistance and to cause a change in behavior. In a buying center a member can prompt another member to change her opinion about a specific product or supplier, to accept new selection criteria, or to change the specifications. Power is not a characteristic of a person but a phenomenon that describes a relationship between people or groups of people (Emerson, 1962).

Understanding the power involved in industrial-buying decisions, the following variables and questions may guide the analysis:

- *Source of power*—What are the sources of power a person uses in the buying decision process?
- *Scope of power*—Which processes in the buying decision process can a person influence? How far does a person have power in the buying decision process?
- *Intensity of power*—Strength of power: How much can a person influence others in the buying decision process? How strong is his or her influence?
- *Instruments of power*—Which action does a person use to exercise power?
- *Expansion of power*—How many people in the buying center are influenced by a person?

Understanding the different ways in which power can influence an industrial-buying decision is best accomplished by looking first at the various sources of power. In general, the sources of power are determined by the controlling of particular resources (Scheer & Stern, 1992) and the kind of relationship between the persons involved (Tellefsen, 2006). The resources to be used as instruments of power can be many things. Therefore, different types of power are summarized in Table 4.8 (Farrell & Schroder, 1999; French & Raven, 1959; Kohli, 1989; Venkatesh, Kohli, & Zaltman, 1995).

Another variable to be analyzed when focusing on the role of power in an organizational-buying decision is the scope of the power a person exercises. It depends on the person and the situation in which power is exercised. In general, the sources of power are associated with different scopes of power. The greatest scope of power has the referent power.

The intensity of power varies from person to person. A person's power increases the longer they work for a company (Mechanic, 1964). In general, the strength of power depends on the sources of power. The fewer alternatives a person without power has and the more important this person evaluates the source of power, the stronger the usefulness of power.

Instruments of power can be many things. Table 4.9 exemplifies how different sources of power can influence the industrial-buying decision, and which

Table 4.8 Sources of power

(1) Reward power	Reward power derives from the possibility to reward other persons involved in the buying decision process. Also the prevention or reduction of negative consequences for someone may be a source of reward power
(2) Coercive power	Coercive power is characterized by the ability to punish a person economically or socially if he or she is not doing what he or she is expected to do. Like reward power coercive power is based on the possibility to sanction a person. Therefore, sometimes the literature summarizes reward and coercive power to a construct named sanction power. However, we have to keep in mind that the consequences of reward and coercive power are different. While reward power increases the attractiveness of a person, coercive power leads to a decrease in attractiveness. Hence, a differentiation between the two sources of power seems reasonable
(3) Legitimate power	Legitimate power derives from the idea of person A that person B has the right to influence A and consequently, A is obliged to follow B. Often the sources of legitimate power are hierarchy and formal positions a person holds in an organization. However, sometimes legitimate power derives from a favor B has done for A that is why A feels obliged to follow B. Then, legitimate power depends on A's values. Such values can be of cultural nature, e.g., the seniority principle, intelligence social class, or sex. However, legitimate power also derives from social structures like hierarchies
(4) Referent power	Referent power has its origin in one person viewing another person as a model she wants to imitate. Therefore, it derives from the respect or admiration a person commands. If A and B already are well connected, A wants to keep this relation. The behavior of A depends on the behavior of B, while the behavior of B is irrelevant. A does not strive for reward or to avoid punishment. A simply wants to be much like B due to her personality, integrity, interpersonal style, or the like
(5) Expert power	A person may exercise expert power if he or she seems to have unique, in-depth knowledge about a specific subject. It is not important if he or she really be an expert but that other persons perceive him or her as being an expert
(6) Informational power	Information power is derived from controlling information to which others do not have access (Kasulis & Spekman, 1980; Kohli, 1989). Persons exercising information power know more information sources than others and may be able to access such sources where others cannot
(7) Departmental power (Blau & Alba, 1982; Kohli, 1989)	Some departments control resources that are not accessible to other departments. The power of a department is transferred to a member of this department. As such, the opinion of this person has a stronger impact on the industrial-buying decision simply because of his or her membership

Table 4.9 Sources of power in the industrial-buying decision

Source of power	Characteristics	Resources	Activities in the buying decision process	Motifs of the inferior
Reward power	Important hierarchical position	Control about rewards, e.g., money, support	Makes suggestions combined with the reward offer	Objectives, rewards
Coercion power	Important hierarchical position	Control of punishments, e.g., redundancy, deprivation of appreciation	Gives orders, combined with a punishment in case they are not followed	Wants to avoid punishments, but also be appreciated
Legitimate power	Has legitimate authority position, a position secured by legitimate measures	Legitimizing symbols, cultural values	Announces decision, asks for support, evaluates other actions as wrong or right	Wants to meet moral obligations
Reference power	Strong, successful, has attractive features	Attractiveness	Shows own opinion, preferences	Wants to become similar to the influencer, wants appreciation
Expert power	Expert knowledge, certain qualification, special talents	Knowledge to achieve certain goals	Scrutinizes, carries out tests, spreads information around	Wants to find the best way to reach his goal
Information power	Access to or control of certain kinds of information or information sources	Access to information or information sources	Spreads information around or keeps it	Wants to highlight own importance, wants to realize own ideas
Departmental power	Is influenced by certain decisions	Own cooperation	Tells preferences to others	Requires high degree of cooperation

instruments members of the buying center may use to exercise their power. The first column contains the different sources of power. They are characterized in column two. Column three refers to the resources of power, while column four contains examples of activities taken in the buying decision process to exercise power. Finally, column five refers to the motivations of the persons exposed to the power.

Empirical studies have shown that expert power and informational sources of power dominate the buying decision process (Kohli, 1989; Leonidou, 2005; Naumann & Reck, 1982; Thomas, 1984) followed by legitimate power (Naumann

& Reck, 1982). Members of the buying center seldom use reward or coercive power (Kohli, 1989)⁴ or referent power. They use different sources of power to different extents. In the first place, purchasing managers use expert (Naumann & Reck, 1982; Patchen, 1974; Tellefsen, 2006) and information power (Spekman, 1979). Sometimes they also make use of legitimate power.⁵ Often, purchasing managers cannot use referent power due to their weak position in an organization. However, Tellefsen (2006) proposes that the use of referent power increases the level of relational support a buying center member gets from the other members, thus improving his/her position in the group. Furthermore, the literature assumes that coercive power decreases the credibility of the purchasing manager (Spekman, 1979).

Also, the sources of power vary with the purchase situation. Expert power is more useful in a new task than in rebuy situations (Leonidou, 2005; McQuiston, 1989; Naumann & Reck, 1982).

The departments exercising power vary with the phase in the buying decision process and the situation of the buying decision. The purchasing department dominates when finding a supplier, while decisions about the product are dominated by the users (Cooley, Jackson, & Ostrom, 1978).⁶

Finally, when looking at power in organizational-buying decisions, the extension of the power of a member of the buying center has to be analyzed, i.e., how many persons in the buying center are influenced by one person? This analysis should consider that members of the buying center can exercise various types of power (Spekman, 1979). The more types of power a person uses, the more other people are influenced by this member. Furthermore, a team member's perceived power, as well as the member's perception of another member's power is influenced by the team's ultimate power, and vice versa (Fiol, O'Connor, & Aguinis, 2001).

Bargaining and Negotiations

A major part of the communication taking place in a buying decision process involves bargaining and negotiations. In the following, we define bargaining as an interaction between two parties one of whom possesses resources and the other desires. At the interfirm level, buyers and sellers tend to have conflicting bargaining goals. For example, when bargaining over price, the seller wants the price to be high; the buyer wants the price to be low (for an overview on buyer-seller negotiations see Herbst, Voeth, & Meister, 2011). On the intra-firm level, members of the buying center may, for example, have conflicting goals referring to the quality or the quantity of the products to be purchased or the preferred supplier to be used, which requires bargaining to come to a purchase decision.

⁴ However, coercive power seems to be important for big buying centers.

⁵ However, the use of legitimate power is only attested by the study of Naumann and Reck (1982) as opposed to the finding of Patchen (1974) and Spekman (1979).

⁶ However, there seems to be no significant relationship between power strength and the purchase situation. There is no more use of power in new task situations than in straight rebuy situations.

Although there are multiple-opponent situations where more than two parties are involved, we want to focus on the bargaining of only two parties. The term negotiation refers to the modeling approach of bargaining which involves determining what contract, i.e., agreed joint strategy, might or should be reached.

In general, we distinguish between two types of bargaining: distributive and integrative bargaining (Chertkoff & Esser, 1976). Distributive bargaining is characterized by a clash of goals between the parties because the more one party gets, the less the other gets. Hence, in distributive bargaining the total gains from the situation is divided between the two parties involved, and each party usually wants to get as much as they can. In contrast, the parties in integrative bargaining have areas of mutual concern and complementary interests. While the situation in distributive bargaining is a zero-sum schedule, integrative bargaining is characterized by a varying-sum schedule such that by working together both parties can increase the total profits available to be divided between them. This is often the case in business-to-business markets because of the existence of a final consumer. If the industrial seller and buyer can persuade the consumer to pay more for a product, there is more to be divided between them. On the other hand, distributive bargaining is more common in consumer markets and interactions.

A model of a bargaining problem calls for a dyadic analysis as the parties involved need to normatively focus on their own behavior as well as predict the opponent's behavior. In other words, bargainers have to determine how they *ought* to behave in light of their analysis of how their opponents *might* behave. And of course, this decision needs to consider that the opponent also considers how the decision maker is thinking, and so on. The minimum necessary variables for an analysis of the overall bargaining process include both parties' initial offers, desired outcomes, maximum levels of concession, and rates of concession.

Distributive and integrative bargaining is analyzed by two different theoretic approaches. While distributive bargaining is fully explored from a psychological, i.e., behavioristic point of view, integrative bargaining is analyzed from an economic perspective.

Psychological Concepts

Psychological research on bargaining is not a general theory of bargaining or comprehensive model. Instead, the results of this research are a myriad of small laboratory studies and, thus, isolated findings. However, the findings can be categorized under six areas, each representing a major factor influencing bargaining behavior (Chertkoff & Esser, 1976):

- General bargaining predispositions

Individual differences in bargaining dispositions may influence bargaining behavior. These include demographic variables like age or sex, as well as traits of a bargainer. For example, bargainers may have a cooperative or competitive general orientation.

- Payoff system

The payoff systems bargainers face in an interaction that has a strong impact on bargaining behavior. The breakeven point (the amount that has to be exceeded if the bargainer is to realize a profit), the cost of time spent in bargaining, the cost of failure to reach an agreement, time pressure, the effects of previous bargaining outcomes, and other factors all may affect bargaining behavior and, thus, need to be incorporated in a model of the bargaining process. For example, research has shown that contingent compensation has a major impact on the process and the outcome of negotiations.

- Social relationship with the opponent

Bargainers are usually individuals representing their firm. However, they are human beings with social relationships. Therefore, factors like friendship or differences in status or power may influence their bargaining behavior.

- Social relationships with significant others

Not only may the social relationship between the directly participating parties influence their bargaining behavior but also the relationship of the bargainers to significant others like the bargaining constituents or a mediator.

- Situational factors

Situational variables may affect the bargaining behavior. Examples are the location of the negotiations, e.g., if bargaining takes place in the home territory of one of the parties or on neutral ground. Other situational variables may include the number of persons participating or the seating arrangement.

- Bargaining strategy

This variable comprises the specific actions of the bargainers during bargaining. Usually using a tougher bargaining strategy—which means that a bargainer uses a more extreme opening position makes fewer and/or smaller concessions—can obtain a more favorable agreement. However, there seem to be some exceptions. For example, if bargainers never make concessions, they may provoke similar behavior by their opponents, which may result in higher transaction costs, lack of future agreements, and where possible, replacement of the bargaining opponent. Also with time restrictions or when bargaining is deadlocked, toughness may be a bad strategy as it could result in no agreement. Toughness may also be inappropriate when future interactions with the opponent are expected.

Esser and Komorita (1975) concluded that the best strategy is to give the other side the impression that one is tough but fair.

Psychological concepts of bargaining may provide a deep understanding of bargaining and negotiation situations and their outcomes. They offer numerous clues for the preparation and the structuring of negotiations. The results are theoretically sound and empirically validated. The implications drawn from the research results are systematic and not random. However, often they are not precise in their recommendations for practitioners, e.g., they do not specify how a reservation price is determined. Furthermore, it seems difficult to identify the variables most appropriate for a specific bargaining situation due to the mass of information generated. This is particularly true as research results are often contradictory. Furthermore, as the results are mainly the output of laboratory experiments, it may be argued that they do not resemble reality (Voeth & Rabe, 2004).

Economical Concepts

The economic literature on bargaining views distributive bargaining as a problem that involves two parties dividing fixed resources with no opportunity for any outside influence from third parties. Therefore, economists have seen the solution to distributive bargaining as indeterminable and left its exploration to others. As a result, they have spent most of their efforts in examining bargaining behavior in an integrative bargaining context.

The oldest economic approach to analyze bargaining is the solution of Edgeworth (1881) for a two-person, two-commodity bargain. It is represented by a simple box diagram (see Fig. 4.8).

In Edgeworth's paradigm, two firms, 1 and 2, start with a given quantity of A and B (e.g., money and raw materials). For each firm, indifferent curves can be drawn where a certain amount of one quantity is willingly exchanged to obtain an amount of the other quantity. Along any one indifference curve, the utility to that firm remains the same.

The two parties, A and B, will carry on trading according to Edgeworth until a point on the contract curve CC' is reached. The contract curve is a solution to the bargaining problem in the sense of game theory. The set of imputations do not

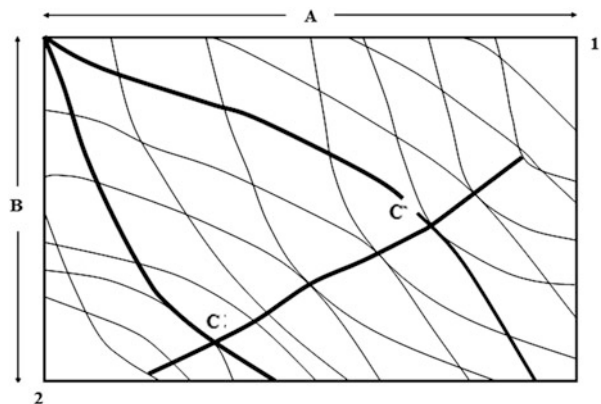


Fig. 4.8 Edgeworth's box
(Source: (Edgeworth, 1881))

dominate each other, while any point lying off the contract curve is not jointly optional. This means that for any distribution off the contract curve, there can be found at least one imputation on the curve that will be preferable to both bargainers. Following the Edgeworth assumptions, a multi-imputation solution is obtained (any point along the contract curve CC' is a solution). This solution to the bargaining problem has been called “indeterminate.”

Edgeworth assumed that utility is measurable and interpersonal comparisons are possible. Accordingly, there exists one imputation on the contract curve that jointly maximizes the utility of both players called the “utilitarian point.” If $U_1(x, y)$ and $U_2(x, y)$ are the bargainer utilities for the amounts X of the first good and Y of the second good, the maximum of $U_1(x, y) + U_2(x, y)$ is the utilitarian point. Edgeworth did not claim this to be the actual solution to a bargain because it might be too disadvantageous to one side. Nor did he consider the possibility of side payments (Edgeworth, 1881).

Another classical approach to bargaining is the model of von Neumann and Morgenstern (1944). They assume that individual utilities may be compared. Against this background, there is only one point on the contract curve of bargains which jointly maximizes the utility of both bargainers (equivalent to the utilitarian point in Edgeworth’s model). According to von Neumann and Morgenstern, this would be the bargain selected and a possible side payment of money or “utility” made (Neumann & Morgenstern, 1944).

The von Neumann and Morgenstern’s bargaining solution corresponds to “Pareto optimality.” The bargainers jointly maximize and split the profits in such a manner that each gets at least as much as he could have obtained by him- or herself. That means that any change that does not harm anyone and that makes some people better off is to be considered as an improvement. However, the Pareto criterion cannot be applied to all bargaining situations. For instance, it cannot be used for any zero-sum or inversely related varying-sum, two party bargaining situations. Furthermore, while movement on the contract curve can actually be explained by the Pareto criterion, movement along the curve still needs to be explained by bargaining.

The Nash solution to bargaining is probably one of the most prominent economic approaches to bargaining (Nash, 1950). Nash’s objective was primarily positive, as he claimed to explain bargaining outcomes. These days his model is interpreted normatively as a “desirable” outcome of the bargaining process. Nash suggests three conditions that need to be satisfied when a “reasonable” bargaining outcome is to be achieved: Pareto optimality, independence of irrelevant alternatives, and symmetry.

Nash assumes that individual utilities cannot be compared. Due to the normative nature of the model, the Nash solution does not consider such features as bargaining ability. It suggests a method of fair division, such that a referee or judge should follow this solution if called upon to settle a division between two bargaining parties.

In summary, economic concepts may help to structure bargaining situations and to model ideal bargaining outcomes. However, the transfer of these considerations

to real bargaining situations is difficult. On the one hand, strict conditions may help to develop general rules of how to bargain. However, they do not help in developing concrete bargaining strategies. On the other hand, the outcomes predicted by economic concepts often are contradictory and not unanimous. As such, they do not help bargainers in preparing negotiations (Voeth & Rabe, 2004).

In conclusion, economic concepts may help to predict the approximate outcome of bargaining situations. However, psychological conditions result in the true solution to vary around the predicted outcome point. As such, an economic-psychological bargaining concept will probably be the best solution and approach to understanding bargaining and negotiation situations and their outcomes.

4.3.2.4 Synopsis

Rather than focusing the behavior of firms, individuals, or buying centers, the dyadic approach suggests analyzing the interrelationships between those involved in the buying decision. Primarily from this perspective, communication relationships constitute the main research focus. It is emphasized that all organizations are social systems interpreted as communication networks that are characterized by a flow of information (Zaltman, Duncan, & Holbek, 1973).

The key constructs analyzed in a dyadic analysis of business buying behavior are relational variables between the parties involved. However, this perspective also considers other variables, of which there is already a general understanding. In contrast to approaches based on the stimulus–response paradigm, these variables are interpreted as situational variables that are primarily used to support and understand relational variables but do not represent key constructs (Bonoma et al., 1977).

Summarizing, key questions to be answered in a dyadic approach are the following (Bonoma & Johnston, 1978):

- How and why do certain interactions occur?
- What are the dynamics of the relational aspects of the interaction?
- What exchanges are taking place between the various dyads in the system?
- What causes certain relations to form and others to terminate?
- How do the supporting variables (situational, individual, and normative) change with respect to the type and milieu of the interaction?
- What is the effect on the interaction as the supporting variables change?

In this chapter, we outlined some important aspects that need to be considered when analyzing industrial-buying behavior from a dyadic perspective. Table 4.10 gives an overview of the constructs described which can be used as a guideline to analyze the communication network between the persons involved in the buying decision.

Table 4.10 Steps to analyze the communication network

1. Find out who is involved in the purchase decision
Name
Function
Hierarchical position
2. Analysis of the communication structure—erection of a network
Nature of communication relations—one way/both ways
Determination of positions: isolated, liaison, bridge, star/central, boundary role, gate-keeper, opinion leader
3. Analysis of conflicts between persons or groups within the network
4. Analysis of power and influence of the persons within the network
– Sources of power
– Position within the network
– Individual tactics and strategies of exercising influence within the network
5. Analysis of negotiation strategies of the persons within the network

4.3.3 An Integrated Model of Business Buying Behavior

As suggested above, the stimulus–organism–response models and the dyadic approaches to industrial-buying behavior should not be viewed separately. We suggest incorporating both views in one approach. In summary, we can conclude that the 13 constructs presented in Table 4.11 seem to be most important when analyzing industrial-buying behavior (Johnston & Lewin, 1996). A meta-analysis conducted by Johnston and Lewin (1996) indicates the importance of those determinants by how frequently they have been examined to explain industrial-buying behavior.

However, it is not possible to develop one true model that represents industrial-buying behavior. The constructs should not to be viewed separately since they are intertwined and influence each other. There is no consensus in the literature about the relationship between the variables. In Fig. 4.9, we present the results of the meta-analysis of Johnston and Lewin (1996), who analyzed a number of studies focusing on the interrelationships between these constructs.

The table has to be read as follows: The columns contain information on each construct when it was used as a dependent variable, while the rows contain information on each construct when it was used as an independent variable. In the cells, the result of the analysis is presented. For example, cell 3, 4 indicates that the effect of group characteristics on participant characteristics was analyzed three times. The relationship proved to be statistically significant in all cases. In contrast, the impact of participant characteristics on group characteristics was analyzed five times, and the relationship was statistically significant. The diagonal cells contain studies that analyzed the influence of one or more aspects of a construct to predict other aspects of the construct.

Based on the results of this meta-analysis, we comprehend the complexity of research on business buying behavior. The results are far from being unequivocal. First, researchers are not sure about the direction of the relationships of the constructs. Further research is necessary to clarify whether there is a directional

Table 4.11 Determinants of industrial-buying behavior (*Source: Johnston & Lewin, 1996*)

Rank	Constructs
1	Purchase characteristics (e.g., product type, buy task, purchase risk/uncertainty, purchase complexity, time pressure, and purchase importance)
2	Organizational characteristics
3	Group characteristics (e.g., group membership, group size, group structure, influence, experience, and demographics)
4	Participant characteristics
5	Process or stages
6	Seller characteristics (e.g., product quality, price, delivery, service, past performance, and vendor reputation and image)
7	Informational characteristics (e.g., sources and types of information, levels of information needed, and message content)
8	Buyer–seller relationships
9	Environmental characteristics
10	Conflict/Negotiations tactics
11	Communication networks
12	Decision rules
13	Role stress

		Used as Dependent Variables												
		Purchase Charac.	Organiz. Charac.	Group Charac.	Partic. Charac.	Process/ Stages/	Seller Charac.	Inform. Charac.	B-S Relations	Environ. Charac.	Conflict Negotiat.	Commun. Networks	Decision Rules	Role Stress
Used as Independent Variables	Purchase Charac.	1 signif. O.n.s.	1 signif. O.n.s.	17 signif. O.n.s.	3 signif. O.n.s.	3 signif. 2.n.s.	9 signif. 1.n.s.	7 signif. O.n.s.	4 signif. O.n.s.		6 signif. O.n.s.	2 signif. O.n.s.	3 signif. O.n.s.	
	Organiz. Charac.	0 signif. 1.n.s.	2 signif. O.n.s.	7 signif. 1.n.s.	5 signif. O.n.s.	2 signif. 1.n.s.	6 signif. O.n.s.	5 signif. 1.n.s.	1 signif. 1.n.s.		5 signif. O.n.s.	2 signif. O.n.s.	1 signif. O.n.s.	
	Group Charac.			4 signif. O.n.s.	3 signif. O.n.s.	2 signif. O.n.s.	4 signif. 1.n.s.				1 signif. O.n.s.			
	Partic. Charac.	0 signif. 1.n.s.		5 signif. O.n.s.	5 signif. O.n.s.	4 signif. O.n.s.	5 signif. 1.n.s.	6 signif. 2.n.s.	1 signif. O.n.s.		2 signif. 1.n.s.	1 signif. O.n.s.	1 signif. O.n.s.	
	Process/ Stages/			8 signif. 1.n.s.	3 signif. O.n.s.	1 signif. O.n.s.		1 signif. O.n.s.					1 signif. O.n.s.	
	Seller Charac.				1 signif. 1.n.s.	7 signif. O.n.s.	0 signif. 2.n.s.	2 signif. O.n.s.	2 signif. O.n.s.		3 signif. O.n.s.			
	Inform. Charac.	1 signif. O.n.s.	1 signif. O.n.s.	1 signif. O.n.s.	2 signif. O.n.s.	5 signif. O.n.s.					2 signif. O.n.s.		1 signif. O.n.s.	
	B-S Relations		0 signif. 1.n.s.	1 signif. 1.n.s.	1 signif. O.n.s.	2 signif. O.n.s.	2 signif. O.n.s.	1 signif. O.n.s.	2 signif. 1.n.s.		2 signif. 1.n.s.		2 signif. O.n.s.	
	Environ. Charac.			3 signif. O.n.s.		0 signif. 1.n.s.	2 signif. O.n.s.	2 signif. O.n.s.	3 signif. 1.n.s.		1 signif. O.n.s.		2 signif. O.n.s.	
	Conflict Negotiat.				7 signif. O.n.s.				1 signif. O.n.s.		5 signif. O.n.s.			
	Commun. Networks			2 signif. 1.n.s.			1 signif. O.n.s.				1 signif. O.n.s.	0 signif. 1.n.s.		
	Decision Rules			2 signif. O.n.s.	1 signif. O.n.s.	5 signif. O.n.s.	1 signif. O.n.s.		1 signif. O.n.s.				1 signif. O.n.s.	
	Role Stress			1 signif. O.n.s.	1 signif. O.n.s.				1 signif. O.n.s.		1 signif. O.n.s.			

Fig. 4.9 Constructs used in empirical research on organizational buying behavior (*Source: Johnston & Lewin, 1996*)

or even a bidirectional relationship between the variables. Second, for some relationships, the research is ambiguous in terms of the significance of the relationship between the constructs. Thus, further studies are needed to get definite results.

Although we may not generate an ultimate model of industrial-buying behavior, we may offer a macro-view of how the 13 constructs influence industrial-buying behavior.

Drawing on the early work of Robinson, Faris, and Wind (1967), we assume that the level of risk associated with a purchase situation has a major impact on industrial-buying behavior. The level of risk, in most cases, is influenced by the importance of a particular purchase for the firm and the uncertainty of the purchase outcome.

While we may suppose that any number of variables may have an impact on the risk associated with a purchase situation, we may conclude that the most important influencing variables will be an environmental, organizational, or of a purchase-related nature. Furthermore, the level of risk may be influenced by the existence or absence of a relationship or communication channel between the buyer and the seller. If neither one exists, it is to be expected that the level of risk increases. However, if both of them already exist, the relative strength and channels of communication may have an impact on the perceived level of risk.

The level of risk associated with a purchase situation may then be viewed as a continuum with the anchors from low to high risk (see Fig. 4.10).

The level of risk influences the constructs discussed above as follows:

The level of risk affects the group characteristics. In general, the size and the complexity of the buying center will increase. More persons will be involved in the buying decision process and consequently they represent a greater variety of interests that need to be satisfied. Furthermore, the hierarchical authority of the buying center members will be higher or quite possibly someone else beyond the buying center will make the final decision. In this case, the buying center's function is to (1) gather and evaluate relevant information and (2) make recommendations to one or more members of upper-level management.

Moreover, the participant characteristics will be determined by the level of risk associated with a purchase situation. It is to be expected that the more risky a purchase situation is, the more educated and experienced participants will be in their particular area of expertise. With the increasing importance of the purchase



Fig. 4.10 The risk continuum (Source: Johnston & Lewin, 1996)

situation, the participants will be more motivated to strive for a successful purchase and deliberate more carefully through the purchase process. This is particularly true for those individuals who are directly affected by the final outcome.

Sellers who offer proven products and solutions will be favored. Important features of the product offered will be the product quality and the after-sale service, while price—albeit being important—ranks only third.

If the level of risk is perceived as high, then participants of the buying center will seek more information and use more sources of information. During the early stages of the buying decision process, commercial information sources like trade publications may be important. However, it is to be expected that buying center members rely more heavily on personal, noncommercial sources in later phases.

As a result of higher levels of risk, conflicts between center members increase simply because (1) more individuals and departments with differing objectives participate in the purchase decision process and (2) participants will be reluctant to make concessions without being rewarded. Consequently, bargaining and negotiations become more important.

Each firm has its own specific decision rules and formalized purchase control mechanisms. However, for high risk purchase situations which are often new purchase situations, these guidelines may not apply. Consequently, the buying firm may follow a “decide-as-you-go” strategy for the purchase decision process.

With an increasing risky purchase situation, the role of stress will increase. This is due to two factors. First, with an increasing size and complexity of a buying center, more conflicts arise. Second, the participant’s stress is intensified due to the chances of making a “wrong” decision and its associated negative consequences.

Finally, buyer–seller relationships become more important as a purchase situation becomes more risky. Perceived risk is reduced when purchasing a product from a proven seller. Similarly, an established communication network between members of both sides facilitates information exchange and fosters an atmosphere of cooperation which in turn reduces a buyer’s risk.

4.4 Summary

In this chapter, we gave an introduction to industrial-buying behavior. First, we characterized industrial-buying behavior as a multiphase, multi-person, multi-departmental, and multi-objective process.

The first problem we addressed was the question of who the industrial buyer is. We saw that the answer to this seemingly easy question is actually very complex. Marketing activities of companies acting in a business context could be targeted toward a firm, an individual, or a buying center incorporating all the persons involved in a buying decision process within the buying firm. In contrast, we outlined the dyadic or systems approach to industrial-buying decisions which emphasizes that interrelationships among those involved in the purchase process should be at the center of any analysis of industrial-buying behavior.

Hence, we differentiated between two approaches to analyze industrial-buying behavior. The first approach analyzes industrial-buying behavior from a stimulus–(organism)–response perspective, which is frequently applied in business-to-consumer settings. We described the three models of Robinson, Faris, and Wind (1967), Webster and Wind (1972a), and Sheth (1973) that are what we call the “original models” that laid the conceptual foundation for the study of industrial-buying behavior. Over the past 35 years, hundreds of conceptual and empirical works have been published that extend or test (part or all) of these models.

The second approach outlined in this chapter focused on the relationship between individuals involved in the buying decision as the unit of analysis. The communication network was presented as the main construct to be analyzed. To find out whom to target successfully with which marketing activities, we not only have to analyze the communication structure and the positions of the persons involved in the communication network but also conflicts, power, and negotiation strategies.

Finally, we tried to integrate both perspectives in one approach to analyze industrial-buying behavior. Based on a meta-analysis conducted by Johnston and Lewin (1996), we tried to analyze the relationships among the constructs identified to be important from the two perspectives. However, an ultimate model does not exist. Instead, we outlined a macro-view of how the constructs may be related by introducing a risk continuum. Thus, in summary, industrial-buying behavior may be viewed as the buyer’s effort to overcome uncertainty.

Exercises

1. What difficulties are marketing activities confronted with when they have to deal with the purchasing/buying function/department in a company?
2. What are the different levels one can look at when analyzing the buying/buyer of a company? Use an example to show the implication of using two different units of analysis for the outcome (i.e., who and how to address, marketing strategy, coordination needs, etc.).
3. What are the main four views on the motives of purchasing managers? Discuss the pros and cons of each one. Use examples to explain what the implications are for the marketing.
4. Explain why uncertainty is a defining behavioral feature of the buying process.
5. Define exogenous and endogenous uncertainty. How can the buyer (or either side) reduce his/her uncertainty?
6. Thinking of purchases you made during the last couple months, when and why did you experience uncertainty? Find examples for exogenous and endogenous uncertainty. Concerning uncertainty, what are the differences between purchase decisions in a company and your personal purchase decisions?
7. Explain the buying center concept. Choose an example to explain which departments of a company are involved in the buying decision process according to this concept.

8. Describe the different roles according to the role allocation by Webster and Wind.
9. Why do individuals retain information selectively? And what consequences does that imply?
10. What are the buying classes in the BUYGRID model of Robinson, Faris, and Wind (1967)? Find examples from your personal experience and for industrial-buying situations for each class. In what ways does industrial-buying behavior have to account for the different purchase situations?
11. Differentiate between the purchase situations presented by Faris (1967).
12. Explain the influencing factors of the Organizational-Buying Behavior Model Webster & Wind (1972b).
13. What are the differences between the stimulus–response approaches to industrial-buying behavior and the dyadic approaches to industrial-buying behavior? Which models belong to these approaches?
14. What positions are there in a communication network and how and to what extent do they effect/influence the workings of that network? Which networking strategies could one use most effectively in the various network positions? Why?
15. What are the different sources of power? Find examples! Can this concept be applied to areas other than industrial-buying decisions? To which ones? Which source of power is, in your opinion, the most relevant for an organizational purchase decisions? Why?
16. Which concepts can be used to analyze/explain bargaining and negotiations? What are the key features of the Edgeworth Box?

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The subject of this chapter is supply chain management. It describes a number of changes in technology that have taken place in recent times that have significant implications for supply chain management. The nature of supply chain management strategies is explained, including the make or buy decision. This chapter also discusses about what is involved in supply chain planning, implementation, and quality control.

5.1 From Buying Behavior to Supply Management

In addition to the further influences discussed in this book (cf. Chap. 4), the behavior of industrial buyers is also affected by the procurement policy of the company. This policy comprises the strategic and operational aspects of procurement. Due to an increasing focus on core competencies as a result of greater outsourcing activity and rapid developments in information technology, the role of networks of interconnected firms in value creation and delivery is becoming increasingly apparent and important (cf. Chap. 3). This inevitably makes firm performance increasingly dependent on the way it manages its external relations with suppliers and how it marries this with its internal processes (Wilkinson & Young, 2002, Wilkinson, 2008). In this chapter, we describe the main features of

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industrial procurement management and show how “supply management” and “supply chain management” are complementary and interconnected processes.

To date, there is no single, uniform definition for the term “procurement” (Kaufmann, 2001). Most authors do, however, differentiate between the terms “procurement” and “buying”/“purchasing” (Kaufmann, 2002; Monczka, Trent, & Handfield, 1998). Often, the terms are applied in the sense in which they have developed historically. “Buying,” or “purchasing,” is defined as a chain of primary operational activities involving the identification of a need, the attainment of ownership of an input, and the administration of these activities. While the terms “buying” and “purchasing” are used to describe the operations of a buying or purchasing department, the term “procurement” is used in a more general strategic sense to include not only these operations but also strategically relevant activities such as supply management and market research. Figure 5.1 presents an example of how materials management could be divided into more or less strategically relevant activities.

Here, we refer to Kaufmann, who defines procurement management as “all processes of supplying the company with direct and indirect materials, services, rights, and machinery and equipment from external sources to the organization, aimed at contributing to the achievement of sustainable competitive advantage” (Kaufmann, 2002); Kaufmann uses the terms “supply management,” “procurement,” and “sourcing” synonymously.

Kaufmann’s definition of supply management takes not only the processes into account but also the nature of the products and services being purchased. Many books on this subject limit their discussion of supply management to materials, services, rights, and machines/equipment. The approach taken by German writers is broader and includes the procurement of capital and human resources.¹ We will use Kaufmann’s definition here, as capital and human resource procurement have special characteristics that go beyond the scope of this book and these matters are handled by specialist departments within a firm.

Based on Porter’s value chain concept,² Kaufman differentiates between primary and secondary activities, and thereby between cross-transactional processes that create the necessary “infrastructure” for supply management and transaction-specific concepts that support this infrastructure. This is shown in Fig. 5.2.

“Supply chain management” is viewed by Kaufmann as being “[...]an umbrella term encompassing cross-company supply, materials, and logistics management involving the source of raw materials to the final customer as well as the disposal and renewal of the material, including reverse logistics.” (Kaufmann, 2002, p 12f) This highlights three key features of the process:

¹ Cf. in example of international authors (Dobler & Burt, 1996; Monczka et al., 1998) and for an overview of approaches in the German language (Kaufmann, 2002, p. 11).

² Cf. Sect. 1.4.

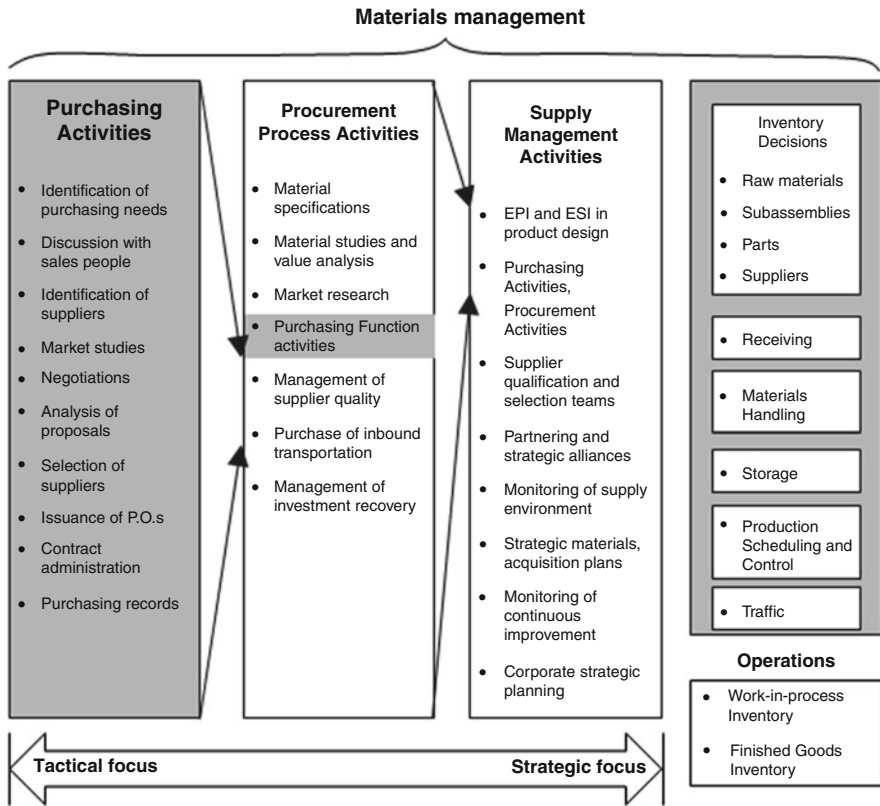


Fig. 5.1 Material management as a comprehensive management function (Source: Dobler & Burt, 1996)

- The final customer’s needs form the basis of supply chain management.
- Supply chain management is business-process oriented and includes the organization of processes extending beyond the individual company.
- The value-creation chain involves an interdependent network of firms and organizations performing different tasks.

We first consider the transaction-specific activities involved in the management of industrial procurement processes and then move on to consider cross-transactional processes.

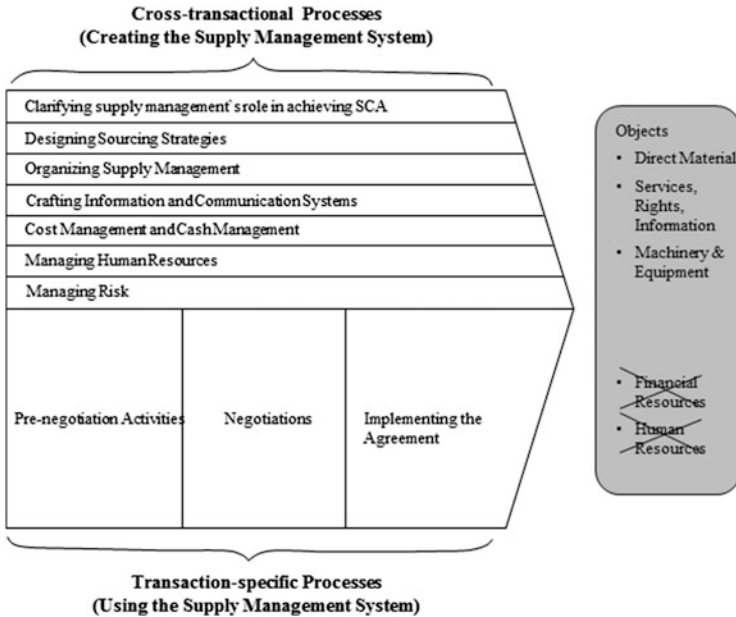


Fig. 5.2 Cross-transactional and transaction-specific procurement processes (Source: Kaufmann, 2002)

5.2 Management of Procurement Processes

5.2.1 Procurement Objectives

Procurement objectives form the basis of the procurement process as they determine the desired effects to be achieved. They are derived from the basic objectives of the organization and from the objectives of other functional areas—such as sales and production (Koppelman, 2004). There are five types (Meyer 1990):

- Cost objectives
- Risk objectives
- Flexibility objectives
- Quality objectives
- Corporate social responsibility objectives.

In addition, three subtasks of the supply function may be distinguished (Arnolds, Heege, & Tussing, 1996):

- Cost optimization
- Security of supply
- Support of other company function areas.

Cost optimization is not the same as minimizing procurement and transaction costs. The total costs of procurement need to be examined and compared to offers made by competitors. Of particular interest here are postpurchase costs, such as operating costs (in the case of machine purchases), or disposal costs. In recent years, companies have begun to undertake “life cycle cost” and “total cost of ownership” analyses in order to take into account all the direct and indirect costs involved (Cf. Chap. 3). Additional types of costs to consider include internal order-handling costs, storage costs, and stock out costs. Stock out or shortage costs are the costs that arise when required products and services are not available when they are needed (Arnolds et al., 1996).

Since the energy crisis in the 1970s, supply security has been a major issue for companies. Although in most markets today it is sales that is the main constraint on the firm’s performance and growth, in some cases procurement can become a bottleneck. In seller’s markets, for example, the position of the buyer is weaker, such as in the following situations:

- When the supply of raw materials is limited or possibly running out; when supply is restricted by powerful, monopolistic suppliers (e.g., OPEC); or when supply is regulated through international agreements on raw materials (e.g., rubber and tin)
- In markets with reduced production capacities due to profit opportunities that are no longer attractive or because demand has outstripped supply at least in the short term, as has happened with microchips in the past
- Markets subject to political control and trade barriers.

In such circumstances, procurement has to secure long-term supply of materials. This can be done in various ways including in-house production rather than external procurement (“make” instead of “buy”); strategic investment in reputable suppliers; and long-term supply contracts. Supply risks need to be identified at an early stage and be either avoided, counteracted, or limited.

The third subtask involves the management interactions and relations with other functional areas of a firm. In the past, procurement has been viewed simply as the department that processes orders passed to it from other departments. A request may come from sales and may be modified by production or finance departments before it is passed on to purchasing. Here, procurement merely executes the plans of other functional areas by purchasing what is required. But, these days, procurement is being seen increasingly as an important strategic area of a firm that demands top management attention. Not only are goods procured that add to a firm’s costs, goods are procured that add to a firm’s profits and performance as well. The task of procurement has been extended to include a new dimension that is creative, innovative, and proactive rather than just reactive in nature. A procurement department has to be able to identify opportunities in the market for reducing costs and for increasing profits through its impacts on other parts of the organization and through

its impacts on customers and sales. This makes procurement much more than a reactive, derivative, tactical operation, carrying out the orders of others. It makes it a problem-solving body, a codesigner of the system (e.g., Überall, 2006). Such responsibility requires in-depth knowledge of both the internal customers and market customers (e.g., Kaufmann, 2002). The procurement process must therefore be set up in such a way that it is integrated and aligned with overall company strategy.

5.2.2 Different Types of Sourcing Strategies

If it is assumed that the general question of outsourcing vs. insourcing is determined at the level of corporate strategy,³ then the question arises as to how a sourcing strategy may be designed to decide what to buy and from whom (Kaufmann, 2002). The most common dimensions of procurement strategies are as follows (Klaus & Krieger, 2000; Janker, 2004):

- Number of sources—single sourcing vs. multiple sourcing
- Scope of service/supply—unit sourcing vs. modular sourcing
- Geographical location—local sourcing vs. global sourcing
- Place of performance—external vs. internal sourcing
- Provision of materials—just-in-time vs. storage)
- Individual vs. collective sourcing
- Strategies related to the number of supply sources

Multiple Sourcing

Multiple sourcing or order splitting has the effect of maintaining or promoting competition among suppliers. Supply risks are also reduced because procurement is divided among different suppliers. A regional distribution of supply sources also provides a hedge against various types of risks such as the expiration of tariff contracts or possibly employee strikes (Arnold, 1997).

But multiple sourcing can result in variation in quality that necessitates more intensive control and monitoring efforts. In other words, the decision must be considered with regard to all cost- and quality effects.

Single Sourcing

There are four types of single sourcing (Kaufmann, 1995): model-dependent, e.g., airbags from a supplier for a particular car model; model-independent, e.g., airbags from one supplier for all car models; production-facility-independent, e.g., airbags

³The term outsourcing connotes the external execution of one or more processes in which a company is not sufficiently competent and cannot execute itself so as to achieve a competitive advantage (cf. Quinn, 2002).

from one supplier for all production; and production-facility-dependent, e.g., airbags from one supplier for a particular production unit.

Single sourcing can be forced on a firm when one supplier dominates the market or enjoys a superior position over the competition. Also, it can be the only viable option in the case of cost-intensive supply and/or logistical relationships. An example of this is just-in-time supply relationships, which require a stable and well-developed communication and logistical system, and therefore can only involve a limited number of suppliers. Single sourcing is also relevant when there is joint product development between a buyer and supplier, as in simultaneous engineering.

The disadvantage of single sourcing is that, eventually, competition among suppliers is reduced. This can be counteracted with a request for proposals in the early phases of, say, the development of a supply part for a new model (Kaufmann, 1995). In the automobile industry, the term “design competition” is used to refer to this practice, and suppliers have the opportunity to discuss their ideas with the manufacturer and enter into a business relationship.

Dual Sourcing

A compromise between these two extreme forms of sourcing is dual sourcing. In this case, a limited number of suppliers are considered. Formal lists are made of potential suppliers that are not reviewed for long periods and which provide the basis for awarding contracts and for contract negotiations. Dual sourcing can involve a firm producing part of a required product or service itself and buying in the rest. This is appropriate when the supply risk is very high and a firm wants to avoid being overly dependent on one or more suppliers. A positive effect of this is greater competition among suppliers because of the threat of self-supply, which may stimulate improved supplier performance.

The advantages of single- and multiple sourcing are as follows (Baily, Farmer, Jessop, & Jones, 2005)⁴:

- Stronger position in price negotiations due to larger order quantities
- Reduced delivery costs
- Little to no danger of quality variation in products
- Easier quality control
- Reduced administrative burden
- Improved communication through closer, possibly long-term relationships
- More support received from supplier with regard to technical application, research questions, and special problems
- Reduced costs in the event that tools, samples, etc., must be provided or at least made available

⁴ An overview of the characteristics of multiple- and single sourcing can be found in Arnold (1997, p. 99).

- Facilitated planning through improved communication and contingent contracts (Helm, 1997)

Advantages of using several different suppliers:

- Distribution of risks with greater supply security
- More competition among suppliers
- Less dependency on one supplier and greater flexibility
- Cost shifts to the supplier (assuming that the buyer's position is strong and they are in a position to request additional services)
- More opportunities for identifying and developing innovations
- Development opportunities for smaller suppliers
- No economic and moral obligations to a particular supplier

5.2.2.1 Strategies Related to the Complexity of the Inputs

Four different levels of complexity in supply inputs may be distinguished with complexity decreasing as we move from System, to Modular, Component, and Parts Sourcing.

System/Modular Sourcing

When complex goods are to be procured, the question of whether to buy a system (package) or individual components arises. This applies, for example, when industrial production facilities are to be procured or when different components are obtained for later assembly. With modular or system sourcing, individual components are not procured. Instead, complete or partly complete systems (subassemblies or functional units) are sourced, which can be installed as an integrated system or unit. In the automobile industry, the steering wheel, handlebar, airbag, and steering box are no longer delivered as single components from different suppliers, but as a preassembled complete steering system. Modules and systems differ to the extent that modules are predominantly developed and constructed by the vehicle manufacturer, and then produced and completed by the supplier. Whereas for a system, the supplier takes on most of the responsibility for development, production, and logistics—coordinating its subcontractors for this purpose (Wolters, 1995). Figure 5.3 shows modular sourcing in schematic form.

From the perspective of the buyer, two contrary objectives can be simultaneously achieved through modular or system sourcing: less in-house production and higher order quantities and fewer suppliers (Wildemann, 1992). Having a smaller number of suppliers reduces transaction costs, as fewer contracts are required and fewer supply relationships must be managed. Labor costs and effort may be saved as well, due to fewer individual orders which reduce workloads for the purchasing department (Wolters, 1995). However, increased transaction costs occur related to selecting and managing and system-suppliers. Figure 5.4 presents the supply structure with modular or system sourcing.

A further means of cost savings for both the buyer and the supplier is through a “platform strategy.” This takes the form of a uniform design for a vehicle's internal

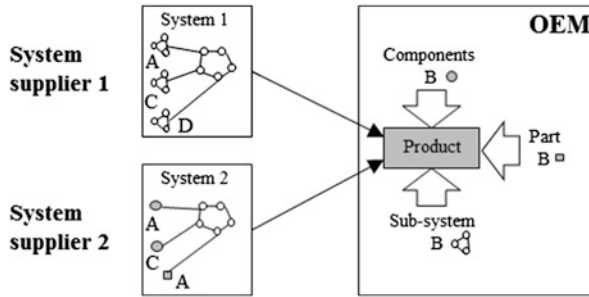


Fig. 5.3 Modular sourcing

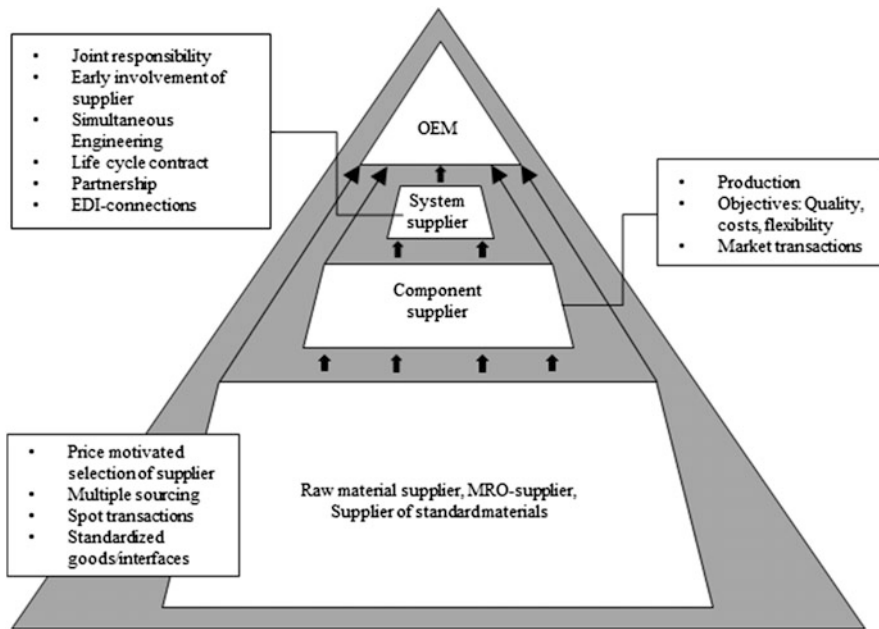


Fig. 5.4 Supply structure with modular- or system sourcing (Source: Arnold & Essig, 1997, cited in Schönsleben et al., 2003)

structure or architecture, such as the underbody, motor, or drive train, regardless of type or model. Volkswagen’s A-platform is found not only in the inner structure of the Golf and similar models, such as the Variant and Cabrio, but also in the Audi A3, Seat Cordoba, and Skoda Oktavia (Dudenhöffer, 1997).

Table 5.1 summarizes the advantages of system sourcing. It is apparent that costs are saved not only in the area of procurement but also in R&D, production, and logistics, leading to a total savings effect.

Table 5.1 Advantages of system sourcing (based on: Wolters, 1995)

Functional area	Advantages with manufacturer	Net rationalization effect
Research and Development	Specialization in core competencies Fewer modifications (e.g., tools/instruments) Faster problem solving Reduction of required engineer capacities	Shorter development time Better developed products Lower development costs Reduction of personnel
Procurement	Reduction of suppliers Fewer orders/less administrative burden Reduction of personnel in purchasing department	Reduction of personnel Reduction of material costs
Production and Logistics	Less preassembly Lower error rate (assembly) Reduction of storage Reduction of required area Reduction of logistical interfaces (e.g., deliveries)	Economies of scale Lower quality control costs Reduction of personnel Learning curve effects Lower capital tie costs Better product and process costs

Component Sourcing

This refers to the sourcing of components involving less value added and requiring less system integration. They normally comprise several parts with generic functions (Wolters, 1995).

Parts Sourcing

Parts are not very complex in use and have universal standardized functions and low levels of innovation. They require little if any further value adding or integration, such as screws or switches. A parts supplier usually competes on price, whereas component suppliers may also take over logistical services, such as just-in-time deliveries.

The services of system or module suppliers include the adjustment and/or assembly of parts and components, as well as the coordination of sub-suppliers. System suppliers also carry out R&D, are involved in product and service development for the buyer, and can contribute comprehensive before and after sales service support. The early inclusion of such a supplier in product and service design and development is often referred to as Forward Sourcing. Table 5.2 summarizes these different types of procurement relationships.

With systems suppliers, the assembly of single components is shifted to the supplier (the systems leader). This changes the structure of the supply chain. A pyramid-like structure emerges. On the first level are the system suppliers, the “first-tier suppliers.” At the next level are the “second-tier suppliers” and so on. The number of direct suppliers to an original equipment manufacturer (OEM) is reduced. This does not necessarily mean that the total number of suppliers in a sector is reduced. Previous direct suppliers may become sub-suppliers, “second-tier suppliers,” to the system supplier. The direct business relationship the supplier had

Table 5.2 Typical service scopes involved in various types of procurement relationships (Source: Wolters, 1995)

Type of supplier	Service				
	R & D	Production	Logistics	Parts aggregation/ completion	Coordination of sub-suppliers
Parts supplier		x			
Components supplier		x	x		
Module supplier		x	x	x	x
System supplier	x	x	x	x	x

with the OEM is discontinued, and from the perspective of the OEM, the number of supply relationships has been reduced.

Figure 5.5 illustrates the path from parts manufacturer to module supplier.

5.2.2.2 Strategies for the Geographical Location of the Supply Sources

Local/Domestic Sourcing

With local sourcing, inputs are obtained from a nearby supplier and the goods are made available when and where they are needed. Domestic sourcing occurs for the same reason—to reduce potential transport problems and to ensure supply. It also avoids problems relating to crossing international borders, including dealing with different laws and cultures

Global Sourcing

The increasing internationalization of business has resulted in a growth in international or global procurement and global sourcing means that firms utilize supply sources from all over the world. There are many reasons for this, including

- Lower purchasing costs, prices, and/or transaction costs
- Financial risk distribution (currency and sovereign risks)
- Sales support in the case of reciprocal business
- Technology access and research
- Circumvention of trade barrier.

For upstream suppliers, a global sourcing strategy can result in a sub-supplier moving its production facilities to a foreign country in order to avoid domestic cost pressures. Or, the procurement strategies of local and global sourcing can be combined to become “glocal” sourcing. This occurs, for example, when national module suppliers are asked by their customers to globally procure primary products that are labor intensive, or they do this on their own initiative. In this way, international differences in costs can be taken advantage of, in addition to the financial and logistical advantages.

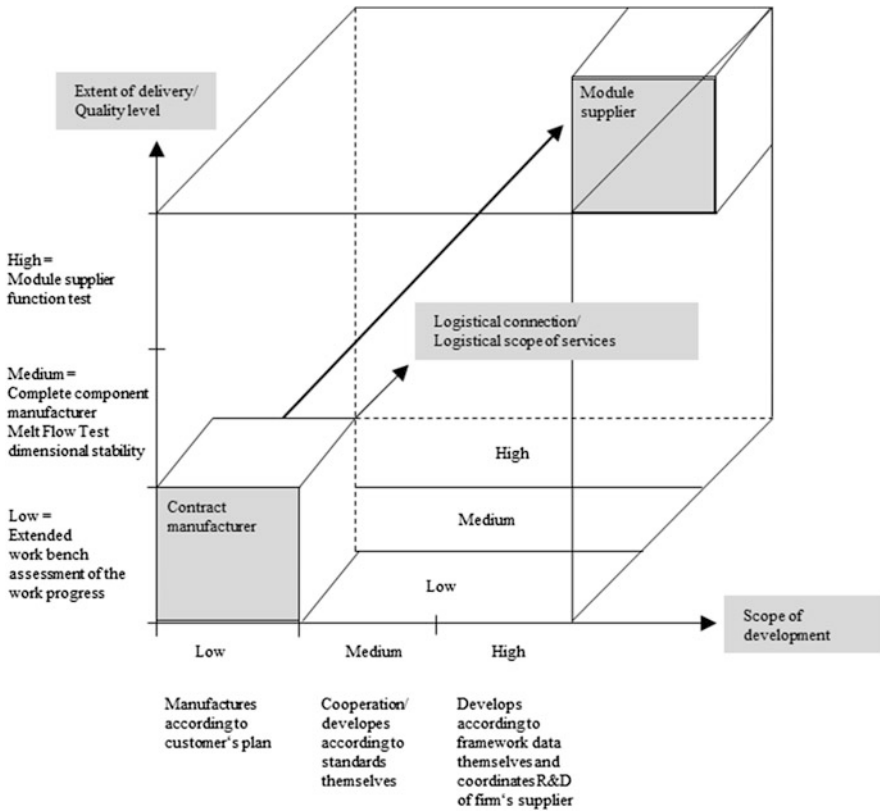


Fig. 5.5 The path from parts manufacturer to module supplier (Source: Wildemann, 1992)

A global sourcing strategy is handled through the establishment of procurement offices, sometimes referred to as “technological spy centers.”

A useful framework for summarizing the main characteristics of the different types of international sourcing strategies is shown in Fig. 5.6.

Based on the degree of control of the customer, we may distinguish between a simple foreign purchase (offshore purchasing), foreign subcontracting (offshore subcontracting), foreign supply through a production joint venture (joint venture offshore manufacturing), and supply from a wholly owned foreign production facility (controlled offshore manufacturing). International purchasing involves establishing relationships between industrial suppliers and foreign customers. The transactions may be direct or indirect via agencies based in the customer’s or supplier’s country, or even a third country. One-time purchases (spot purchases) and long-term supply are both possible. In the case of offshore subcontracting, the customer is more strongly connected to the foreign supplier, which may be supported through the provision of product descriptions, specification of assembly requirements, raw materials, and/or even financial and technical assistance. The

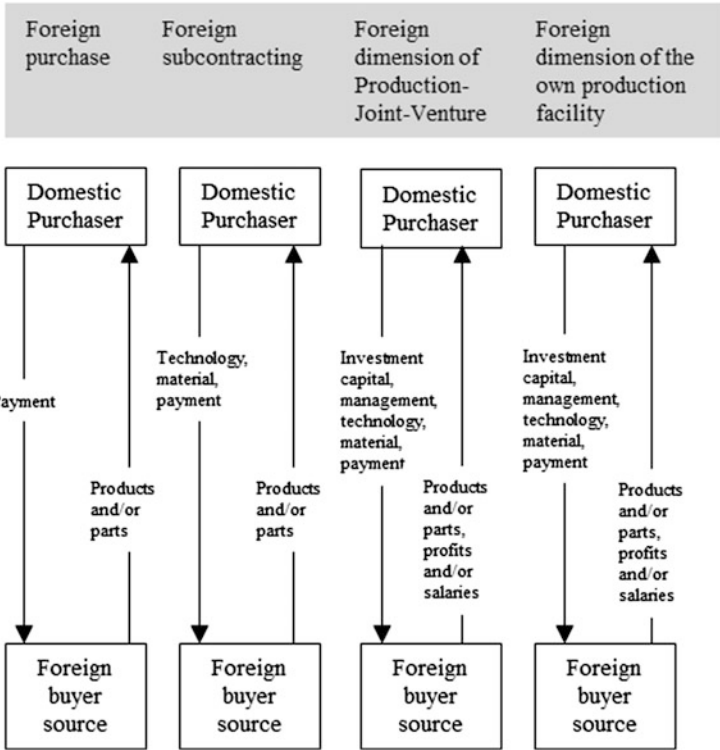


Fig. 5.6 Types of foreign supply sources (Source: Moxon, 1982)

duration and intensity of the relationship can vary, as well as the degree of involvement of various types of intermediaries and third parties.

With a foreign manufacturing joint venture, the degree of control of the customer increases. This may be reflected in their participation in running the joint venture as well as the amount and types of resources contributed. Finally, fully owned offshore production facilities involve total control but are subject to the legal rules and regulations of the host country and the types of financial arrangements linking the foreign with the home base.

The various criteria involved in assessing international sourcing alternatives are summarized in Fig. 5.7.

Cost savings through global sourcing are best achieved with standard parts bought in large quantities.

5.2.2.3 Strategies Related to Location of Suppliers’ Operations

Internal Sourcing

Traditionally, suppliers have performed their services in their own production facilities, outside the customer’s facilities, but often there is a need to integrate

Procurement objects	<div style="display: flex; justify-content: space-between;"> Global Sourcing Local Sourcing </div>		
<u>Physical characteristics</u> - Volume - Weight - Homogenous	Small parts Light parts Homogenous parts	\longleftrightarrow \longleftrightarrow \longleftrightarrow	High volume parts Heavy parts Varied parts
<u>Monetary characteristics</u> - Value - Significance of price as competitive factor	Low value Price competition	\longleftrightarrow \longleftrightarrow	High value No price competition
<u>Informational characteristics</u> - Necessary coordination - Information communicated	Low Little, non-critical	\longleftrightarrow \longleftrightarrow	High Much, Specific
<u>Examples</u> From the automobile industry	- Batteries - Spark plugs - Steering wheel - Bumper - Radio - Rims	- Turbo charger - Air bags - ABS - Semi-conductor - Floor textiles	- Instrumentation - Front end

Fig. 5.7 Scheme for assessing procurement objects for global and local sourcing (Based on: Kaufmann, 1995)

the supplier’s services and inputs within the customer’s own operations and production systems. This is referred to as “internal sourcing.” Three levels of such internal integration may be distinguished.

By founding an industrial business park, the buyer can locate key suppliers close to its own production facilities. This not only reduces logistical problems but also fosters a closer relationship between customer and supplier, leading to a more customized supply.

An even closer relationship is created when the supplier’s production processes are transferred to the customer’s production facilities. Machinery and equipment remain the property of the supplier and employee salaries are paid by the customer. This approach has even fewer transaction problems and costs than an industrial park.

The strongest form of integration is when the product or service is not only produced as part of the customer’s production facilities but is also directly mounted, assembled, or otherwise incorporated into the final product or service of the customer. In this manner, the supplier bears full responsibility for transaction problems.

5.2.2.4 Strategies Related to the Delivery Timing of Inputs

Three types of strategies may be identified.

Stock Sourcing

With stock sourcing, a buyer attempts to secure supply through buffer stocks. The basic intention is to protect the production process from external disturbances, such as the inability of a supplier to deliver, to cover the time between deliveries, and/or protect against possible shortages in the market. Stocks may also be built up when a future price increase is expected. A disadvantage of large stock levels is the amount of capital that is tied up. Additional problems are possible deterioration in goods during storage as well as pilfering and safety issues. Generally, only materials of low value are suitable for stock sourcing.

Demand-Tailored Sourcing

With demand-tailored sourcing, an attempt is made to deal with the disadvantages of stock sourcing. A differentiation is made between orders based on a specific requirements and production-synchronized delivery. With individual orders, materials are ordered when they are needed (made-to-order production), and storage and capital costs are, to a great extent, minimized. But one-off purchases can lead to higher prices for specialized goods, and there is also a danger that they cannot be delivered on time.

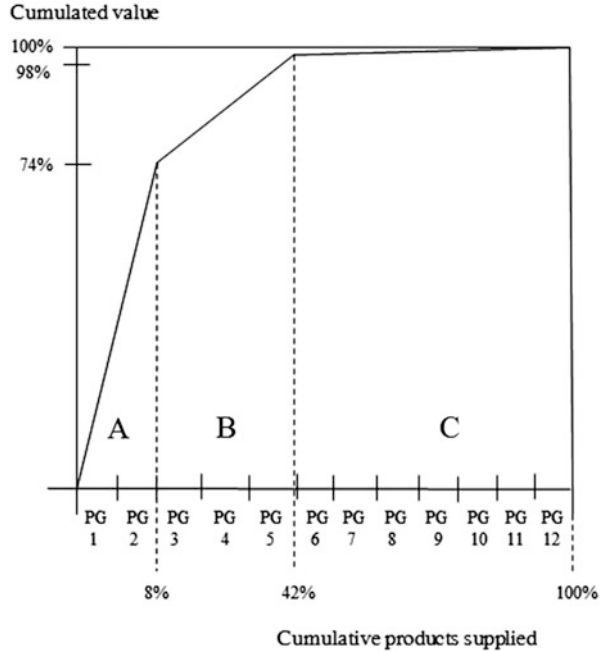
In contrast, production-synchronized delivery takes place with close cooperation between the customer and the supplier. Arrangements are made to match the delivery with production. In this way, stock levels can be minimized and costs saved, including capital, personnel, and risks such as aging and spoilage. The purchasing process is also facilitated, although the precise coordination required between supply and demand does require extra effort and cost to set up and maintain. Prices are normally higher due to the transfer of storage, quality-assurance, and logistical functions to the supplier. Price is also dependent upon the market positions of buyer and supplier.

Just-in-Time Sourcing

A further development of demand-tailored sourcing is the just-in-time (JIT) principle. This is a holistic approach involving sustainable, economic impacts on two levels of value creation (Kleinaltenkamp, 1997). With JIT, neither the customer nor the supplier holds stocks. The supplier starts production of, usually, high-value parts (A-parts) when it receives a specific request from the customer, including quantity and delivery time. This is usually communicated via electronic data interchange (EDI) (cf. Sect. 5.3.1.). JIT procurement is only possible for certain goods, such as assembly parts, modules, and systems, and the selection of parts for such a system can be made using a combined ABC/XYZ analysis, as shown in Fig. 5.8.⁵

⁵ Cf. Sect. 5.2.3.1. Often, an ABC/LMN/XYZ analysis is applied. LMN defines the volume per package unit (cf. Bogaschewsky & Rollberg, 2002).

Fig. 5.8 ABC-Analysis
(Source: Wildemann, 1988)



In this example, 8 % of the goods supplied (products 1 and 2) account for 74 % of the total amount purchased. An XYZ analysis sorts the goods according to the predictability of their demand. The following classification can be used (Wildemann, 1988):

X = Regular demand with only minor fluctuations. A weekly predictability rate of over 95 % and monthly fluctuations in quantity demanded of $\leq \pm 20$ %.

Y = Demand subject to greater fluctuations. A weekly predictability rate of over 70 % and monthly fluctuations in quantity demanded of between 20 % and 50 %.

Z = Demand is irregular. A weekly predictability rate of less than 70 % and monthly fluctuations are $\geq \pm 50$ %.

Fluctuations in demand are smaller in the case of mass production compared to batch or one-off production because of the law of large numbers and the canceling out of fluctuations on a large scale. Particularly well-suited for just-in-time procurement are high value goods with a regular pattern of demand that is predictable. Table 5.3 summarizes the main factors affecting the use of JIT systems.

As the table shows, the main criteria for assessing JIT are

- Quality of supplies
- Quantity reliability
- Delivery date reliability

Table 5.3 Assessing the suitability of supplies for just-in-time systems (Source: Wildemann, 1988)

Predictability	Value		
	A-parts	B-parts	C-parts
X-parts	High demand High predictability Consistent demand	Medium demand High predictability Consistent demand	Low demand High predictability Consistent demand
Y-parts	High demand Medium Predictability Semiconsistent Demand	Medium demand Medium Predictability Semiconsistent Demand	Low demand High predictability semiconsistent Demand
Z-Parts	High demand Low predictability Stochastic Demand	Medium demand Low predictability Stochastic Demand	Low demand Low predictability Stochastic Demand

Well-suited for JIT-procurement

To secure supply, a dual sourcing arrangement (e.g., 70 % from one supplier and 30 % from another) may be advisable whereby only the main supplier delivers just-in-time

With JIT, quality control is very important. The system can only be successful with 100 % quality reliability. Additional issues are those to do with establishing effective and efficient communication systems and material flow systems between the supplier and customer. Contract preparation also requires care. JIT procurement usually involves increased delivery frequency, which can have significant cost ramifications for the supplier. For this reason, a regional carrier strategy is often used in which goods for a defined region are combined daily as a bulk load in order to obtain better rates (Wildemann, 1988; Bogaschewsky & Rollberg, 2002).

5.2.2.5 OEM Procurement Strategies

Procurement for OEM can be for individual firms or groups of firms.

Individual Sourcing

Individual sourcing is the most common form of sourcing in industry today. Large firms often combine the requirements of different units of their organization into a central purchase in order to achieve economies and price advantages. This type sourcing involves internal or intracompany cooperation.

Collective Sourcing

Coordination of procurement systems across different firms is referred to as collective sourcing and may involve both horizontal and vertical forms of cooperation. The supplier is approached by a group as a whole, rather than by individual firms.

Horizontal forms of purchasing cooperation are more of an exception but it can be useful for small- to medium-sized businesses as a way to combine orders so as to achieve quantity discounts. In addition, by combining orders with other firms, better conditions may be negotiated with suppliers. In order for such cooperation to occur the purchasing requirements of firms have to be similar both in terms of specifications and timing of deliveries. Developments in e-purchasing systems make this type of purchasing coordination easier to organize.

The following examples of this type of cooperation can be found in business-to-business markets:

- Joint purchase of plant engineering companies
- Buying clubs, e.g., for engineering or roof-laying
- Joint ventures, particularly between medium-sized firms
- Buying through system centers, such as in franchising systems
- Buying market platforms (specialized service providers who act as intermediaries including via the Internet)
- Sporadic cooperation for technical purchases.

The level of organization can vary from loose agreements all the way up to the establishment of joint procurement offices.

The problems with collective sourcing include the search for and selection of partners (Arnold & Essig, 1997; Essig, 2002). Cooperation also means that the autonomy of an individual firm is constrained and the resulting dependency can be disadvantageous. Contract provisions can, however, give a certain degree of security.

Vertical cooperation involves cooperation between customers and suppliers. If the buying company is a lead user for the supplier, then the supplier will strive to work together with the company in order to secure future success and to promote innovative products, which is one of the functions of a business relation. Should a customer require particularly innovative products, joint efforts in the areas of R&D, and construction or engineering may be necessary and a less in-house production will facilitate such a development.

The problem is one of business mating, finding attractive potential partners with whom to cooperate (Wilkinson, Freytag, & Young, 2005). Various sources of information may be used including market research concerning alternative supplier's patents and resources, as well as recommendations and referrals from trusted third parties. And it may be as much a matter of getting chosen by an attractive counterpart as it is one of choosing a business mate.

Cooperative procurement also includes simultaneous engineering which involves the codevelopment of product and production facilities with suppliers. Such a partnership is often combined with the strategy of single sourcing or modular sourcing, as described above.

The foregoing discussion makes clear that different types of strategies are not really mutually exclusive and that certain types of interdependencies must be taken into consideration when planning of a consistent sourcing strategy. Table 5.4

Table 5.4 The sourcing toolbox (Source: Arnold, 2003)

Supplier	Sole	Dual	Multiple	Single
Procurement object	Unit		Modular	System
Procurement area	Local		Domestic	Global
Timing procurement	Stock		Demand tailored	Just-in-time
Procurement subject	Individual		Collective	
Place of value creation	External		Internal	

describes possible relationships between the individual strategies in terms of a sourcing toolbox.

5.2.3 Procurement Planning and Organization

5.2.3.1 Models of Procurement Planning

Demand and Quantity Approaches to Procurement Planning

Procurement planning begins with the specification of demand requirements, including both current and likely future demand.

To determine demand in the early phases of buying, the method of value analysis is particularly useful. This is a systematic, creative, and cooperative search process for improving the quality of products and for reducing their costs. Products are analyzed in terms of as many partial qualities and subfunctions as possible. These are then individually assessed as to whether they are really needed and, if so, whether the current quality (material strength, quality) is necessary or whether they could be produced less expensively with different material or processes.

To analyzes its outputs in a customer-oriented manner, as firm will also try to anticipate the customer’s future purchase requirements. A customer’s evaluation depends on their perceptions of how well suited a product or service is to the intended areas of application and they will use various sources of information to aid their evaluation.

The most important aspects of value analysis are the following:

- The selection of products to be subjected to value analysis (e.g., products strongly threatened by competition or core cost factors)
- The target or target costs
- Selection of the team for the value analysis

- Assessing the current costs (problems with isolating costs, assignment of fixed costs, and common cost calculations)
- Functional analysis (which functions have been fulfilled in which way up to this point and what will be needed in the future?)
- Search for new solutions to better fulfill functional demands (including all methods of creativity and idea development, such as brainstorming, synectics, and morphological methods).

For value analysis, competing products should be included in the evaluation. The timing of this can be important as, for example, too-early a comparison can lead to a fixing and narrowing of viewpoints that is not always advantageous. Conflicts may arise in the analysis group and must be given due attention at an early stage. Strategies for dealing with such conflicts can also be set up in advance.

In addition to value analysis, order quantity calculations are employed to determine what is most cost-effective. Determining optimal order quantities is the subject of an extensive literature but in the following, only one such approach will be discussed, i.e., the classic model or “lot size.” The analysis is based on the following assumptions (Arnolds et al., 1996):

- The demand per time unit is known and is consistently regular.
- There are no restrictions regarding the suitability of the material for storage, storage capacity, and liquidity.
- Quantity discounts are normally not taken into consideration.
- Each item is ordered independently of the others and stored in only one warehouse.

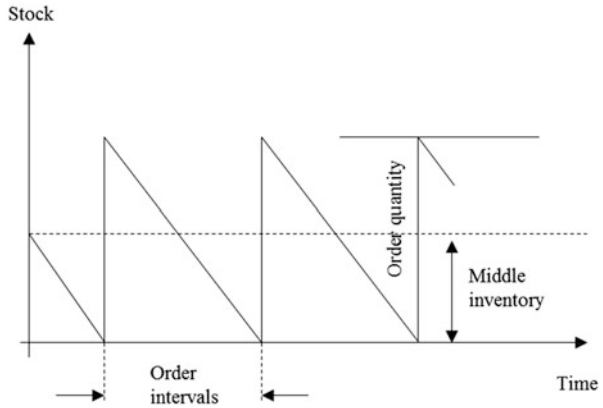
In Fig. 5.9, the connection between stock, quantity, and time is presented. Delivery of the (regular) order quantity is assumed to be made at the moment that stocks are exhausted. The length of the period between orders is the order interval. It is dependent upon the demand per unit of time (the demand rate). The average stock level equals half of the order quantity. The aim of order-quantity optimization is to minimize the relevant costs during a planning period and order and storage costs depend on the decision to order. The procurement costs do not change as no quantity discounts are assumed to exist.

The annual order costs decrease with order quantity, whereas storage costs rise with order quantity. The minimum costs position is given by the Andler formula:

Definition 1

$$\text{Optimal order quantity} = \sqrt{\frac{200 \times \text{annual demand} \times \text{order costs}}{\text{purchase price} \times \text{storage cost rate}}}$$

Fig. 5.9 Saw-tooth curve
(Source: Arnolds et al., 1996)



Consider the following example. A firm has an annual demand of 5,000 units for an externally sourced component regularly used in production. The list price is € 0.50 each. The order process cost is € 40 per order/delivery and the annual storage cost is 20 % of the average stock value.

$$\text{Optimal order quantity} = \sqrt{\frac{200 \times 5,000 \times 40}{0,50 \times 20}} = 2,000 \text{ items}$$

This quantity is ordered 5,000/2,000 or 2.5 times a year (5 times in 2 years). The annual order costs are therefore $2.5 \times 40 = 100$ €. The annual storage costs are $1,000 \times 0.50 \times 20 \% = 100$ €.

With this optimal order quantity, the order and storage costs are equal. This is a particular quality of the formula. The two cost components of the optimization calculation may be illustrated as follows (Fig. 5.10):

The classic order quantity formula can be modified and expanded indefinitely (e.g., Troßmann, 2006), including the price effects of combining orders for different products and synchronization with production. Also, more dynamic order quantity models dispense with the requirement of regular and consistent demand per period and allow for fluctuations in demand.

The basic model is based on fairly restrictive assumptions and other difficulties also arise:

- The result is not a whole number
- Order quantities and package sizes vary
- Order rhythms have long intervals with technical or economic product modifications occurring in the meantime
- An accurate calculation of the order costs and the storage cost rate is difficult.

As part of its marketing efforts, a supplier may try to assist the buyer in developing a stock-ordering model, such as through the joint use of a computer-based planning and e-purchasing system. With such cooperation, the supplier

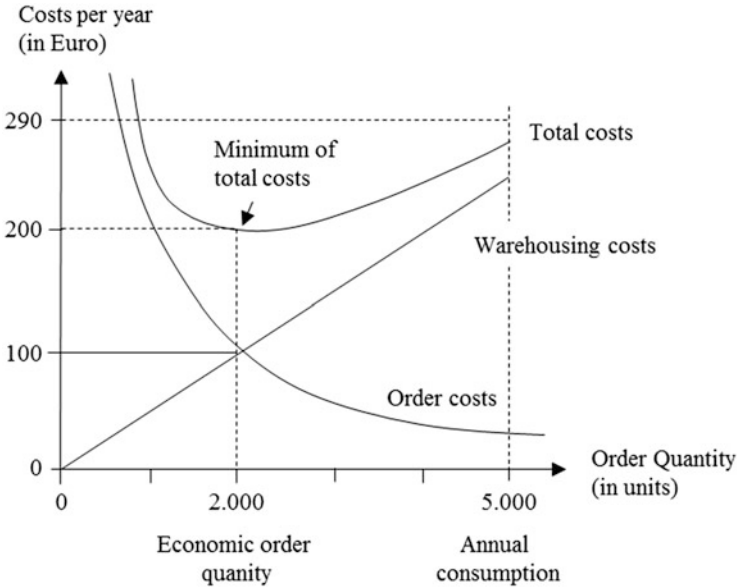


Fig. 5.10 Cost curve with the Andler formula (Source: Arnolds et al., 1996)

would have a certain level of security with regard to upcoming orders and the sales risks would be more calculable.

Cost-Oriented Approaches to Procurement Planning

The potential for cost reductions is a major issue for many companies and new approaches are emerging that offer more “holistic” cost analyses. Examples of this include the analysis of life cycle costs and target costing. A strategic procurement decision requires considering all the costs associated with a product over its entire life cycle, i.e., *the total cost of ownership*. Even costs occurring after use must be considered, including whether a supplier is willing to remove the product or take it back at the end of its life cycle, or cover the costs for disposal/recycling measures.

The concept of a life-cycle cost analysis originated from the analysis of large-scale projects, such as those in the construction industry, industrial plant construction, or in the space and aviation industries. Life cycle costs comprise all costs incurred during a project, including preconsiderations, planning, realization, operation, and shut down. Use of the term “cost” is inadequate here, as various resources are used at different points in a project. A more fitting term would be “expenses,” which could be discounted to the point of time of a decision.

An example is a comparison between an electrical energy-saving light bulb DULUX EL by Osram and an ordinary light bulb. DULUX EL can be purchased for 23 €, needs only 15 W for the same performance as a 75-W light bulb and burns for 8,000 h, compared to 1,000 for an ordinary bulb. The ordinary, 75-W bulb costs 0.98 €. In the following diagram, the life cycle costs of both bulbs are shown. A

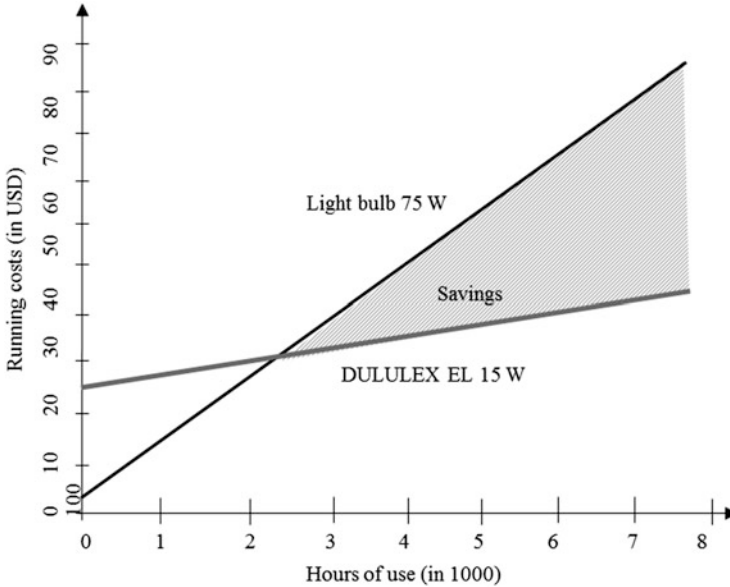


Fig. 5.11 Life-cycle-cost comparison of energy-saving bulb DULUX EL and ordinary bulb (based on: Simon, 1992)

price per kilowatt hour of 0.13 € is assumed. Not considered here are secondary costs, interest costs, costs of changing the bulbs, and disposal costs. The model demonstrates that, when the relatively high list price of the energy-saving bulb is compared to its low running costs, it is clear that it is the economically wiser choice in the long run, despite a higher initial purchase price (Fig. 5.11).

The break-even point—the point at which changing from one type of bulb to another becomes more economical—lies at an expected duration of approx. 2,600 h (Simon, 1992). As a marketing measure, a supplier should be able to present such a cost calculation to the buyer so that cost advantages may be made explicit. Should there be cost disadvantages with the product, other possible benefits must then be pointed out and emphasized. More expensive suppliers employ such arguments.

Target costing involves a comprehensive package of cost-planning, control, and management activities leading to the formulation and realization of cost objectives or targets in the initial development/construction of a new product. Based on a target purchase price, production costs are assessed. If target costs are less than the target price, the difference represents a possible profit.

From a marketing perspective, the most sensible method for determining the target price begins with an assessment of customer requirements and competing prices offered. After the desired profit margin is set, the target costs result.

The difficulty with target cost management is the necessity to break down the total targeted costs into different elements, including processes of production and the components, materials and personnel required. The aim is for manufacturers to

receive clear target cost parameters for, say, a car's side-view mirror. Make-or-buy considerations also follow.

Considering demand-relevant target prices early on ensures a market and customer orientation throughout all phases of production and marketing. But the allocation of costs among various functional areas or process elements remains difficult and requires close cooperation among all key participants, which can include sub-suppliers, who are also involved. Sub-suppliers may be asked to present their cost structures if they want to keep their business relationship with the customer. Responsibility for contacts with sub-suppliers normally lies with the procurement department and the suppliers need to signal a willingness to work in teams with the customer at an early stage if they are to be able to defend the target costs they provide.

Supplier-Oriented Approach to Procurement Planning

When there are several possible suppliers for the same product, supplier analysis and assessment need to be undertaken. Many factors are relevant in selecting a supplier, each of which needs to be evaluated and their importance determined in order to reach a decision. Only in special cases is the decision made solely on price. The factors involved include:

- Price
- Product quality
- Guarantees
- Before and after sales services
- Reliability of the supplier
- Delivery risks (e.g., with import)
- Conditions, additional costs
- Granting of credit
- Product range
- The supplier's image
- Existence of long-term business relations
- Possibility of reciprocal business
- Supplier's capacity
- Financial or contract-related obligations
- Fulfillment of basic conditions, norms, standards, environmental parameters, and disposal regulations

Some of these are essential and allow for an initially screening out of some suppliers. This is often the case with functional quality and the reliability of the product, which cannot be made up for through price reductions or additional services. The evaluation involves more than efficiency considerations. Even if all factors could be measured in terms of costs purely quantitative analysis would never be enough.

To begin with, a checklist can be developed and suppliers evaluated simply in terms of “yes,” “no,” “given,” or “not known” for each attribute. A scoring model can be used, which involves the following steps:

- Listing of relevant factors and potential suppliers
- Weighting of factors in terms of their importance
- Evaluation of each supplier on each factor using a predetermined rating scale
- Weighting ratings by their importance and summing across different types of factors
- Developing an overall score or score profile for each supplier
- Choosing one or several suppliers based on their overall scores.

A simple example is given in Table 5.5. The method makes qualitative factors quantifiable, incomparable factors comparable, and implicit factors explicit, and allows intersubjective assessment, i.e., different people can do the evaluation and the results compared and discussed. A subjective component cannot be excluded and the problems this can lead to should also not be underestimated. Nevertheless, a certain degree of transparency is achieved and a systematic rational, defensible assessment of suppliers is made possible. Care must be taken to critically assess the precision and sensitivity of the model and results—too much reliance on minor score differences should be avoided. The same method can also be used for other types of decisions and can be automated using a computer.

Another method for supporting strategic procurement planning is *procurement portfolio analysis*. Here, alternative suppliers are compared in terms of their profit impact and risks.

Different types of inputs are first classified according to their importance and purchase share (ABC analysis). Usually, only a few inputs account for most of the procurement costs. These are referred to as A-goods. They have the greatest impact on costs in the long-term. In addition, qualitative factors play a role, including the impact of image-enhancing components, materials, and accessories, which can have an effect on sales without involving high procurement costs, e.g., “Intel Inside” or organically produced agricultural inputs.

Potential supply risks include:

- The consequences of a supply failure for production and sales
- The ease of use of substitutes
- The possibility of in-house production
- The number of available suppliers
- Storability

Inputs can be classified as “high” or “low” on these factors, which results in the typology shown in Fig. 5.12.

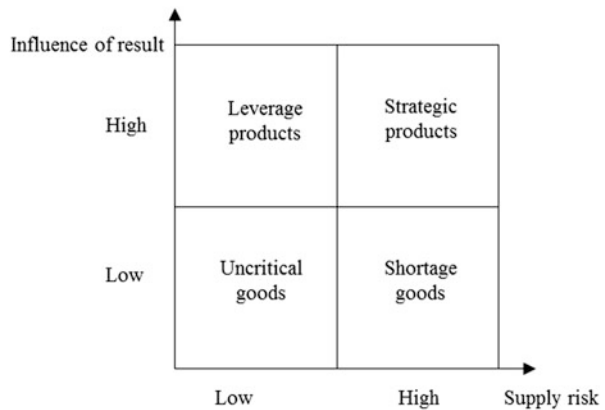
The amount of procurement effort depends on where the input is located. Strategically significant inputs demand more careful attention, including more

Table 5.5 Supplier analysis using a scoring model—a basic example

	Supplier A	Supplier B
1. Capabilities	1	2
2. Cooperation and service	3	2
3. Quality	2	1
4. Delivery time	1	3
5. Total costs	2	2
Sum	9	10

Evaluation: 1 to max. 5 points for the best score

Fig. 5.12 2 × 2 matrix for product evaluation (Based on: Kraljic, 1988)



extensive market research and intensified interactions with the supplier. Noncritical materials demand correspondingly less.

For strategically important products, a purchasing portfolio can be developed in terms of the buyer’s and seller’s power. From this, further strategies may be derived. Table 5.6 provides an overview of the criteria for assessing these two dimensions and Fig. 5.13 gives an example.

From Fig. 5.13, a number of strategic recommendations can be derived, including:

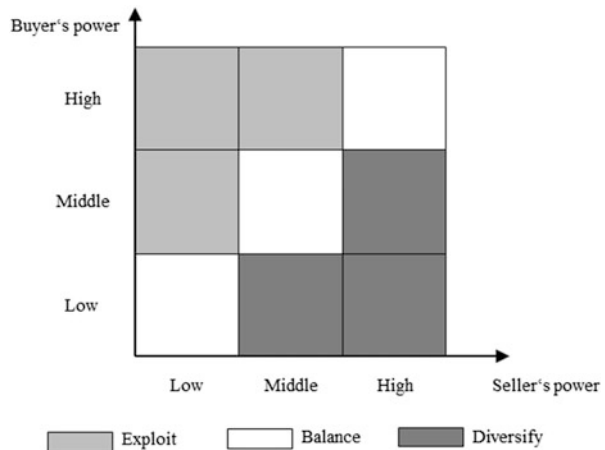
- The allocation of purchases among suppliers; combining them into optimal cost order quantities
- Where to focus negotiations on price reductions and transaction costs, without endangering the supplier’s survival
- Where spot market purchases can be made
- Where security stocks can be minimized
- Where to focus demands for quality assurance and improvement
- Where in-house production should be maintained or reduced

With a strategy of diversification, supply security plays a major role. Here procurement is limited to a few, comparatively reliable suppliers. The price emphasis is modest, long-term supply contracts are preferred, and the supplier is supported

Table 5.6 Assessment criteria for buyer’s power and seller’s power (Source: Kraljic, 1986)

Criteria for assessing seller’s power	Criteria for assessing buyer’s power
Market size in relation to delivery capacity	Purchase quantity in relation to the most important production units
Market growth in relation to capacity development	Growth of demand in relation to capacity development
Full capacity use or risk?	Full capacity use of most important production units
Competitive situation	Market share in comparison to the most important competitors
Return on investment (ROI)	Profit contribution of the most important finished products
Cost and price structure	Cost and price structure
Profit margin	Costs in case of a failed delivery
Particular quality of the product and technological stability	Possibility of in-house production, depth of integration
Entry barriers (due to necessary capital or know know)	Entry costs for new supply sources in relation to the costs of own in-house production
Logistical situation	Logistics

Fig. 5.13 Purchasing portfolio matrix (Source: Kraljic, 1986)



in their quality assurance efforts. The aim is to balance the goal of supply security and rationalization of procurement.

Such strategic recommendations must be approached with a degree of caution. The strengths of the approach lie more in the diagnosis than in therapy. It is suggestive but requires further examination and modification depending on particular circumstances. Such generic strategies cannot be a substitute for a detailed analysis, but they can make a valuable contribution to a procurement portfolio analysis.

For the supplier, there is the question of whether they can obtain feedback on how they have been evaluated. Suppliers are often interested in getting such

feedback and use it to help make improvements. This brings us to the next point—the supplier’s response. These should be about improving performance in areas important to the buyer. Provided that the improvements are compatible with competitive circumstances, the responses of the supplier can lead to a strengthening of customer advantages, while improving the supplier’s own sales at the same time.

5.2.3.2 Organization of Procurement

Business theories regarding the organization of procurement focus on process and structure (in the realm of which responsibilities are predominantly determined). As we have mentioned, these need to be designed so that the strategy pursued is fully realized.

Task analysis is the first step. The overall task is divided into subtasks. The procurement task may be divided according to function, type of purchase, purchase phase, purpose, or geographical aspects. The functions involved include demand analysis, demand assessment, market research, supply–source research, supply–source negotiations, selection of supplier, contracts, delivery, goods inspections, and delivery of supplies to actual users. The purchase phases include planning, implementation, and control.

Two fundamental issues arise:

1. Integration of the procurement function within the firm, including:
 - Centralized vs. decentralized
 - Definition of the scope of the tasks involved and who is able to do it, including the division of tasks between procurement and other departments such as production and sales
 - Regulation and coordination of cross-functional interfaces
 - The hierarchical positioning of the procurement department.

2. Internal organization of the procurement department, including:
 - Division into specialized units
 - Regulation of interdepartmental coordination, in particular communication between specialized units
 - Use of information and communications technology.

First, we consider the question of centralization, which requires that existing firms structure and processes are taken into consideration because they are hard to change quickly. More generally structure needs to match strategy.

The advantages of a centralized procurement are:

- Larger order quantities and quantity discounts. Internal, administrative order costs are reduced
- The number of suppliers can be reduced, which reduces transaction costs
- Standardizing materials used in the firm

- Reduced stock levels, saving storage space, and avoiding individual oversupplies
- Uniform treatment of risks, such as those related to labor laws, outsourcing, cooperation with supplier, etc.
- Ability to employ more specialized and technically qualified personnel
- Procurement is uniformly controlled and managed
- There is a clear division of tasks and responsibilities

The disadvantages of centralizing procurement are

- Longer chains of authority and problems with cross-functional relations
- Longer paths of communication with a loss of flexibility
- Danger of too little know-how (especially technical) and understanding of user's needs
- Higher transportation costs with a centralized delivery of ordered materials
- Innovations in the company may "leak"
- Problems encountered by the users cannot be directly discussed with the supplier

The conclusion to be drawn is that a balance needs to be worked out. Too much decentralization can have an equally negative effect as different parts of the firm act independently of each other.

For firms with purchasing functions distributed across several locations, the establishment of material group teams (MG teams) can be beneficial, with members drawn from different organizational units. Whether global teams are appropriate depends on the travel and communication costs resulting compared to the potential cost savings achievable through better coordination.

The concept of material group management is just as suitable for central services, such as computer-related procurement, consulting, market research, and more. A better term therefore is "service/performance group management."

To be customer-oriented, appropriate resources, skills, and qualifications need to be developed in the purchase organization. The team should be multifunctional and include members from the purchasing department, construction, sales (possibly marketing), quality assurance, and production (Droege & Comp, 1998). Having five to seven members has been shown to be effective (Kalbfuß, 1996). Because competencies from different areas of the firm are required, the term "competence center" has been used to refer to such teams.

The tasks of the team involve examining the extent to which supplies can be across the firm, assessing suppliers, and developing a sourcing strategy package. It meets at regular intervals to discuss current developments and procurement experiences. The advice of specialized external consultants may also be sought by the team. Figure 5.14 summarizes the concept of material group management.

The values presented in Fig. 5.15 illustrate how material group management unites centralized and decentralized structures.

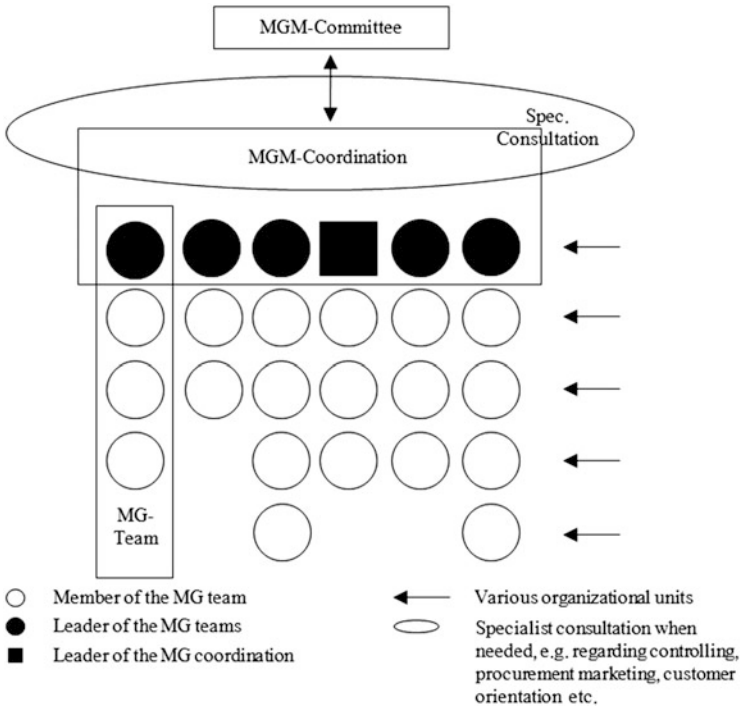


Fig. 5.14 The concept of material group management (Based on: Kalbfuß, 1996)

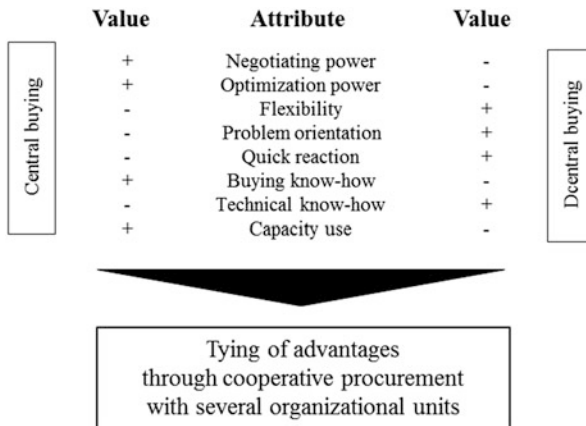


Fig. 5.15 Advantages of material group management (Based on: Kalbfuß, 1996)

Due to its multifunctional nature, material group management can be carried out without major adjustments or changes to the total organization. When the concept is consistently followed, the complete purchasing function may be carried out by the MG teams, providing that top management decides to delegate this responsibility.

With stronger decentralization, additional teams are formed for other work processes. These are appropriate when more than one organizational unit has a stake in solving a particular problem or can contribute to its solution. The initiator is often the unit for whom the problem is most important. The teams may be built based on agreements reached between individuals or by higher authority.

Teams are well suited for solving interfunctional coordination issues, particularly those related to function and know-how, because they overcome barriers created by work divisions and separate legal and organizational units. They can prove useful in both centralized and decentralized organizations but should only be kept on for as long as they produce results.

Successful team work for procurement can take various forms including

- Materials teams, including development/construction, production/production planning, purchasing/procurement, materials management/stocks/planning, users, norm points, quality management, controlling/cost accounting
- Supplier teams, including development/construction, production/production planning, purchasing/procurement, materials management/stocks/planning quality management, and users
- Supply management teams, including representatives of the customer (development, quality management and users); representatives of the supplier (sales, marketing, development/construction, quality management, production/production planning/logistics)
- Make-or-buy teams, with, purchasing/procurement, materials management/stocks/planning, users, quality management and controlling/cost accounting
- Value analysis teams, with purchasing/procurement, users, quality management, controlling/cost accounting, and at least one strategic supplier
- International sourcing teams, with representatives from the most important purchasing departments or functions
- Information and Communications Technology (ICT) teams, comprising users from different parts of the firm areas

Teams could also be formed for certain processes or to facilitate coordination of cooperative and outsourcing activities. Procurement is then no longer the task of a single department but also involves other divisions in the form of a network. Procurement teams become service providers for all organizational units.

If supply management is consistently applied, a delegation of responsibility for certain supplier relationships is made to supply managers. These communicate with a key account manager on the supplier side. The customer analysis carried out by the key account manager will be made more difficult by the multidimensional structures in the buyer's company and the decision-making structures in the buying center are difficult for him to identify.

Network Competence

A way of assessing the requirements and skills required for establishing, coordinating, and managing supply relations is in terms of the network competence

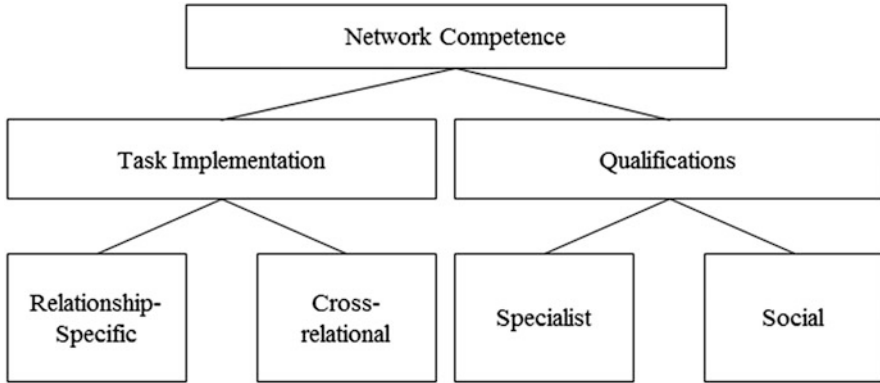


Fig. 5.16 Network competence (Source: Ritter et al., 2002)

of the firm. This is a concept developed out of German research on managing relations with technology partners (Ritter, 1999) but later generalized to all types of supply or interfirm relations (Ritter, Wilkinson, & Johnston, 2002).

A firm's network competence is defined as "the degree of network management task execution and the degree of network management qualification possessed by the people handling a company's relationships" (Ritter, 1999, p. 471). It comprises two dimensions as shown in Fig. 5.16. The first is *task execution* which comprises (a) relationship-specific tasks to maintain a single supply relationship—initiation, exchange, and coordination and (b) cross-relational tasks to maintain the network of connected relationships as a whole—planning, organizing, staffing, and controlling. The second dimension refers to skills and qualifications required including both technical and social/interpersonal. The items used to measure each of these dimensions and their subcomponents are provided in Ritter et al., 2002.

5.2.4 Market Research and Procurement Evaluation and Control

5.2.4.1 Procurement Market Research

More intensified market research is required these days due to the growing strategic significance of procurement. This is further complicated by the increasing levels of internationalization and global sourcing and the technological complexity of many products and services. The task of procurement market research is to systematically identify, process, and interpret information relevant to a firm's procurement planning and management. Market research involves the following steps:

1. Identifying the types of inputs to be analyzed
2. Identifying the kind of information to be gathered
3. Identifying the methods and information sources to be employed
4. Identifying the means of analysis and presentation of results (Stangl, 1985).

For cost reasons, extensive market research cannot be carried out for all potential inputs. It is necessary when there is a gap between the firm's requirements and existing offers.

Step 1. The following criteria are relevant in assessing the types of inputs to be more extensively researched (Stangl, 1985):

- Changes in the content, scope, timing of a firm's purchasing objectives
- Strategic changes
- Character of demand: consistent vs. inconsistent, first purchase, and one off purchases
- Purchasing risks: market, supply failure, performance, and payment
- Business risks: material handling (storage, distribution, disposal) production, sales, financial
- Value of the object: dollar spend, relative spend.

Step 2. Many types of information are required to evaluate procurement markets. These include the alternative supplies and suppliers available and the power of the buyers and sellers. The sales strategies of the suppliers are also relevant, as well as its strengths and weaknesses. Finally, if there is competition for supplies, information on the procurement strategies of competing buyers is a relevant consideration.

Step 3. The integration of procurement market research within a firm is an important issue. Centralizing all market research within one department can lead to various types of synergies and economies of scale and cope. But there are also advantages to locating purchasing-related market research in the procurement department or supply-management group. In some cases, ongoing market monitoring is left up to the purchasing department and large-scale projects are assigned to the market research department. Unlike sales-related market research, the creation of independent market research institutes for procurement market analyses is not common.

The methods of procurement market research are very similar to those of sales market research, which are described in Chap. 6.

5.2.4.2 Procurement Evaluation and Control

The task here is formulating objectives and targets, guiding and directing the process or goal achievement, through providing timely and relevant information to aid the implementation process, and evaluating the results of procurement activities in terms of target achievement. On the basis of ongoing performance, methods of control, correction and adaptation are developed and action taken. Discrepancies between desired and actual are scrutinized and, based on the analysis, counter measures are recommended (Pfisterer, 1988 p. 68).

Several types of evaluative criteria can be relevant and can be assigned to individuals in the form of targets and objectives, which are then monitored over time. Some examples of such objectives are the following:

Definition 1

$$\text{Negotiation target} = \frac{\text{Acquisition price}}{\text{Market price}}$$

Definition 2

$$\text{Costs of order processing} = \frac{\text{Costs of procurement department}}{\text{Number of orders}}$$

Supply performance can be measured through a comparison, over time, of the following ratios:

Definition 3

$$\text{Complaints} = \frac{\text{Complaints}}{\text{Number of incoming goods}}$$

Definition 4

$$\text{Late delivery} = \frac{\text{Number of missed deadlines}}{\text{Number of incoming positions}}$$

Further important criteria are:

- Machine downtimes and production plan changes due to missing parts
- Price concessions
- Discounts
- Enquiries per buying agent
- Number of visits to supplier by buying agents

Procurement monitoring and control indicates which types of information are target and decision relevant and which can lead to further insights, including understanding and analyzing discrepancies between actual and planned results. Finally, analysis of this information provides the bases for identifying ways to improve procurement systems and procedures and supplier relations.

5.2.5 The Balanced Scorecard as a Tool for Procurement Control

The Balanced Scorecard (BSC) was originally developed at the beginning of the nineties by Robert S. Kaplan and David P. Norton because they were dissatisfied with existing tools for measurement and management (Kaplan & Norton, 1992). In particular, they criticized other methods because they overemphasized financial factors and because the link between control in terms of these measures and the firm and its strategies was not well developed. The aim of a “balanced” scorecard was to create a balanced relationship between qualitative and quantitative measurement criteria. Four perspectives are differentiated:

- Financial perspective: How do we appear from the view of the shareholder?
- Customer perspective: How can we best serve our customers? How do we position ourselves on the market?
- Business process perspective: How can we organize ourselves in such a way so as to guarantee long-term, efficient performance?
- Learning and growth perspective: How can we sustain and continuously improve our strengths and innovative potential?

A large advantage of the BSC is that, when used correctly, it allows a joining of corporate strategy, divisional strategies, and operations implementation into one cohesive system. The following conditions need to be fulfilled:

- Strategic and operational activities as well as divisional and corporate activities must be closely aligned and interrelated.
- Effective control systems need to be in place.
- Appropriate and timely management communication systems need to be established, including both top down (setting objectives) and bottom up (feedback and objectives agreement). The Balanced Scorecard team should be comprised of individuals from various departments/divisions or corporate units.

The most important elements for successful development and implementation of the BSC concept are

- Definition of strategic targets.
- Description of the group involved or affected.
- Specification of key questions to be addressed in regard to each of the four perspectives, i.e., strategic targets, success drivers, key resources and outputs, measurement criteria, and underlying values.
- Definition of performance measures.
- Implementation of a continuous improvement process.

For the procurement strategy, it is necessary to position the company with regard to more general strategies, such as overall supply management or e-procurement strategies and strategies related to material groups and supply-specific elements.

Strategically relevant aspects at the general firm strategies need to be translated in more specific departmental, divisional, and functional strategies and targets. The corresponding business processes then need to be specified and tied to the financial and other control criteria.

Figure 5.17 illustrates the way a Purchasing Scorecard can be linked to the overall Company Scorecard.

5.2.6 Quality Control in Procurement

Quality control in the form of total quality management (TQM) is an important focus of procurement organization, as a means of responding to competition and customer requirements. This applies particularly to the supply of materials and components but can extend to the procurement of complex inputs. Cost considerations have meant that many processes previously undertaken by a firm have been shifted to the supplier, including areas such as goods receipt, quality assessment, and material flow. As a result, suppliers are being increasingly featured and integrated into TQM systems. TQM is a management method that strives to place quality at the center of attention, where quality is defined as the fulfillment of customer requirements, as the means to ensure long-term business success for the firm and for society in general. The TQM concept is similar to and complementary to the concept of customer orientation described in Chap. 2.

TQM arrangements are defined in contract agreements and secured by audits and certification of quality assurance systems. Suppliers must demonstrate their quality control capabilities through the ISO 9000 certification system or a firm may enforce its own regulations. Chrysler, Ford, and General Motors introduced the norm QS-9000 in 1995 and asked their suppliers to realign their quality management systems to it to gain certification by an accredited institution. Today, many automobile manufacturers use independent but accredited institutions to help with the control and assessment of supplier quality. This means the customer no longer needs to engage in quality control and inspection systems itself, which reduces its costs. There is, of course, always the question as to whether a neutral certifier is truly following all the conditions required by the customer. A way of dealing with this issue is to establish clear quality standards for auditing and certification by third parties.

The ISO 9000 standards are structured as follows:

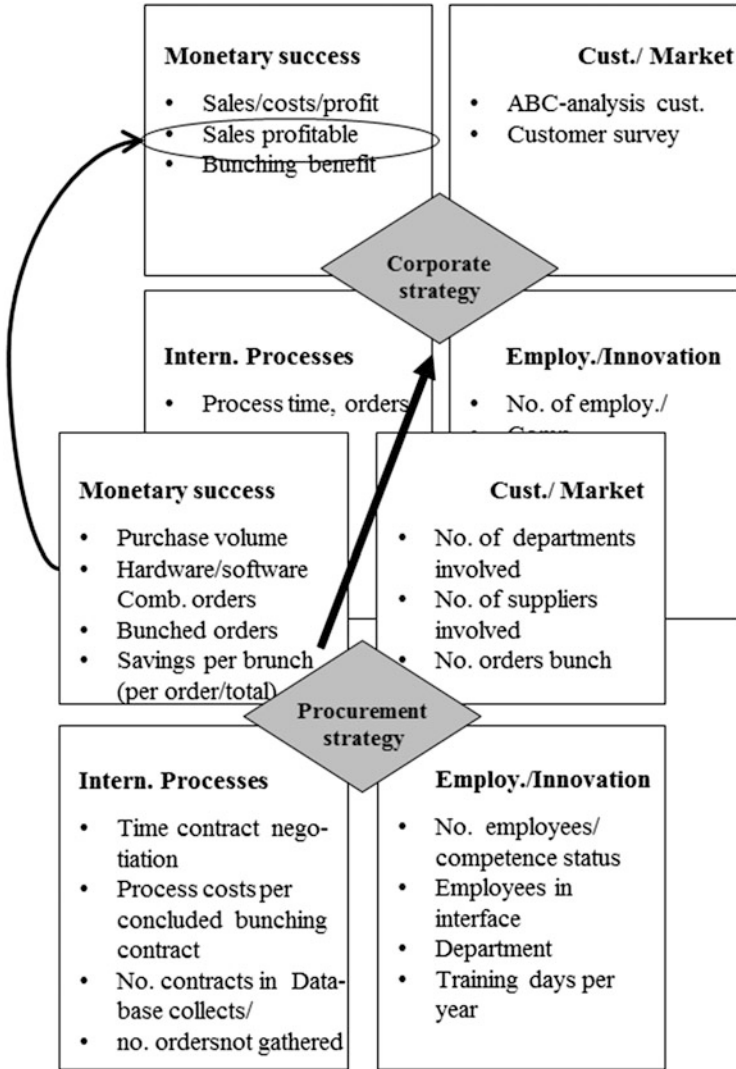


Fig. 5.17 Possible joining of a purchasing scorecard and a company scorecard (Source: Engelhardt, 2003)

ISO 9000 (2005): Quality management—fundamentals and vocabulary. This standard is an introduction to the topic of quality management in firms. The most important concepts are discussed and the terms used are defined. The system process model used in ISO 9001 is also described.

ISO 9001 (2000): Quality management systems—requirements. This sets down the detailed specifications for a quality management system. The main elements are

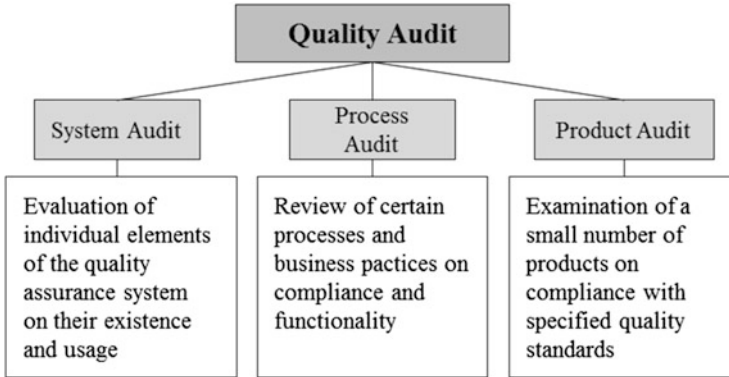


Fig. 5.18 Types of quality audits

based on PDCA (Plan, Do, Check, Act) and focus on process quality optimization perspectives.

ISO 9004 (2000) provides a guide that deals with the effectiveness and efficiency of quality management systems. It includes instructions for implementing TQM. It is, however, not a basis for certification or contracts.

ISO 9002 (1994) and ISO 9003 (1994) have been removed.

A quality audit involves assessing whether organizational procedures introduced to assure continuous quality are adhered to and are in compliance with the ISO standards. There are system, quality, and product audits, as summarized in Fig. 5.18:

The costs of certification depend on the size of the firm to be audited. But many firms underestimate the potential cost savings that will result. Processes are optimized, tasks are clearly delegated, and weak spots are identified. The entire effort is aimed at achieving zero error in production and delivery.

Certification is repeated or reconfirmed about every three years. Because competition has prompted nearly all suppliers to seek certification, many customers have begun placing even greater quality demands on their suppliers. In addition, there are now various types of “quality awards” established in different countries to support, reward, and celebrate achievements in this area. The forerunner here is Japan, where the International Demming Application Prize has been awarded annually since 1950. In the U.S., the Malcolm Baldrige National Quality Award has been awarded since 1987 and since 1992 the European Foundation for Quality Management prize has been awarded. The criteria extend far beyond the certifiable quality assurance system presented in the ISO standards. The European prize, for example, recognizes firms:

- Whose products and services achieve a high level of customer satisfaction
- With a high level of internal quality in the sense of satisfied employees
- Who have fulfilled their own quality goals to a high degree

- Who practice process management of a model character
- Whose management behavior is quality-oriented
- Whose application of resources is quality-promoting
- With an exemplary quality strategy
- With an extraordinary position with regard to social responsibility.

The criteria for the quality awards provide a basis for assessing supply relationships generally and potential suppliers may even be asked about awards they have won in addition to certification.

5.3 Procurement Process Organization to Improve Supply Chain Management

There are a number of business and environmental trends that impact on corporate strategy, including procurement (Schönsleben, Hieber, & Alard, 2003):

- Increasing globalization
- Increased focus on core competencies
- More modular- and system-sourcing concepts
- More frequent formation of differentiated and strategic customer–supplier relationships
- Faster dynamics and quick response to customer wishes
- Increasing process and network orientation
- Increased use of information- and communication technologies.

All of these impact on procurement. Increasing globalization has resulted in a greater focus on global sourcing strategies, which is an efficient way of organizing international procurement processes and a source of competitive advantages. A greater focus on core competencies means more of a firm's activities are outsourced. Modular- and system-sourcing concepts lead to the development of more focused and differentiated customer–supplier relationships. The shift from a producers' to a buyers' market also leads to greater competition shorter product life cycles, and growing product complexity, which make business relationships more important in achieving success. Finally, the trend toward flexible, process-oriented organizational structures depends on the use of modern information and communication technology in logistics and e-commerce systems.

5.3.1 E-Procurement Solutions

The term “e-procurement” includes all network-oriented solutions ranging from “. . .the simple, electronic communication system, to the electronic catalogue system, requests for proposals and auctions, to electronic markets and supply chain management concepts.” (Brenner & Zarnekow, 2003). E-procurement integrates all

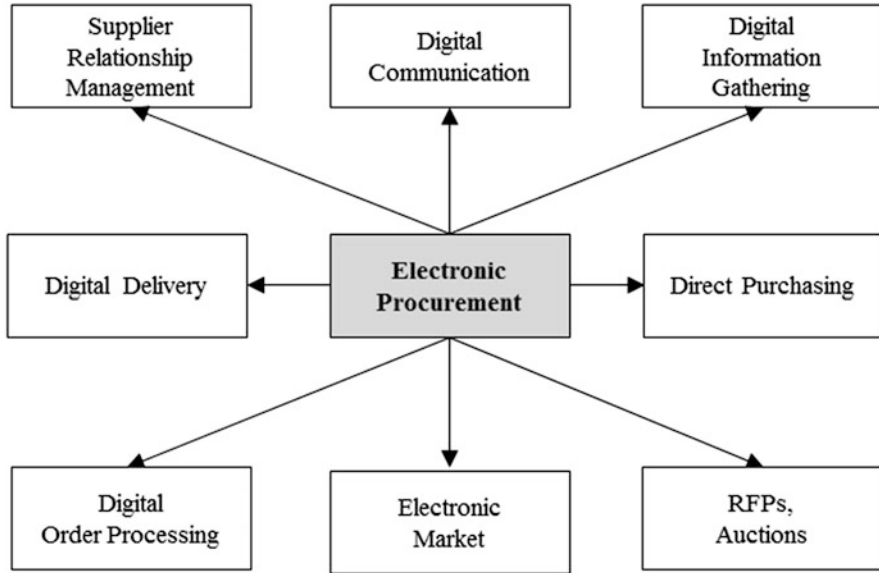


Fig. 5.19 Application areas for e-procurement (Source: Brenner & Zarnekow, 2003)

forms of electronic communication processes for purchasing. The objective is to reduce costs, save time, and improve quality.

Eight different areas of application for e-procurement may be distinguished, as shown in Fig. 5.19.

The Internet has dramatically changed communication behavior. The best example of this is email. With the increasing use of broadband Internet, the telephone and paper mail services have to a great extent been replaced and online conferences are a common practice. Also, the Internet is a vitally important source of information for firms. In addition to the general information to be found on the web, many specialized service providers offer databanks with specialized information services for purchasing.

Using direct purchasing systems makes it possible to carry out procurement processes in a decentralized manner, without the involvement of a specialized procurement department, efficiently and effectively, while at the same time maintaining centralized monitoring and control. It also provides for greater transparency in the form of online manuals, software, and market data. Originally, these systems were used to order low-value and indirect products, such as cost center materials, auxiliary materials, tools, or repair services. Now, any products or services that can be ordered from catalogues can be bought using desktop-purchasing systems, which automatically generate invoices and order confirmations.

Direct purchasing systems can be accompanied by “purchasing card systems,” which are special kinds of company credit cards with corresponding accounting

systems that can be given to employees. Within the budget on the card, the holder may make decisions autonomously. Accounting control is done by the financial service provider. If purchasing cards and desktop-purchasing systems are combined, the credit card can be restricted for use only for suppliers listed in the catalogue system. The advantages of decentralized procurement are thereby achieved without sacrificing the possibility of a central supplier control and evaluation.

Project-specific services not found in the catalogue may be requested electronically, including requests for proposals, auctions, or electronic market places.

Electronic markets can be classified in various ways (Arnold, 2003):

- Open vs. closed
- Horizontal vs. vertical
- Buyer-oriented, seller-oriented, or neutral
- Consortial vs. individual firm

In closed e-markets, there is trade only with existing suppliers, whereas, in an open market place, others may also register and participate. Horizontal e-markets extend across all sectors having to do with, for example, maintenance repair and operation (MRO) related purchases. Vertical e-markets tend to focus on one sector only and high-values parts. E-markets maybe controlled by buyer or seller firms or neutral third parties. They may also involve consortia of firms with common interests in developing e-markets for the products and services they buy and sell. Who operates and controls the e-market is important in terms of possible fees, the volume of transactions concluded and data protection.

While e-procurement systems mentioned serve to optimize routine procurement processes, the *concept of e-collaboration* goes further than this. It is designed to improve production costs more generally and involves greater degrees of cooperation and coordination of activities among suppliers and customers. These are referred to as supply chain management concepts or supplier relationship management and include

- Information gathering and analysis
- Cooperation and coordination of activities
- Integration of business processes across the entire supply chain.

Table 5.7 shows a supply chain management structure for the procurement of direct and indirect materials.

5.3.2 Efficient Customer Response and Supply Chain Management

Efficient Consumer Response (ECR) is a strategic concept for cooperation between producers, wholesalers, and retailers, primarily in consumer goods markets. It aims

Table 5.7 E-procurement strategies for direct and indirect materials (source: Arnold, 2003)

Procurement object:	Indirect material	Direct material
Procurement concept:	E-procurement	Supply chain management E-collaboration
Procurement objective: (optimization objective)	→ Efficiency (Process costs)	→ Effectiveness (Production costs)
Procurement path: (Example)	Optimization of procurement costs through process automatization using catalogue order systems (desktop purchasing systems or electronic, Internet-based catalogue market places)	Optimization of procurement prices through bunching effects and market power, and the employment of modern negotiation tools (e.g., online auctions, online RFPs; and, in particular, online reverse auctions, collaborative commerce or e-collaboration)

at structuring the entire value chain in an integrated manner ECR has the following subobjectives (Corsten & Gössinger, 2001):

- Efficient inventory management and replenishment
- A customer-oriented and profit-oriented product range achieved through cooperation between manufacturer and distributors
- Coplanned and implemented sales campaigns
- Efficient product launches.

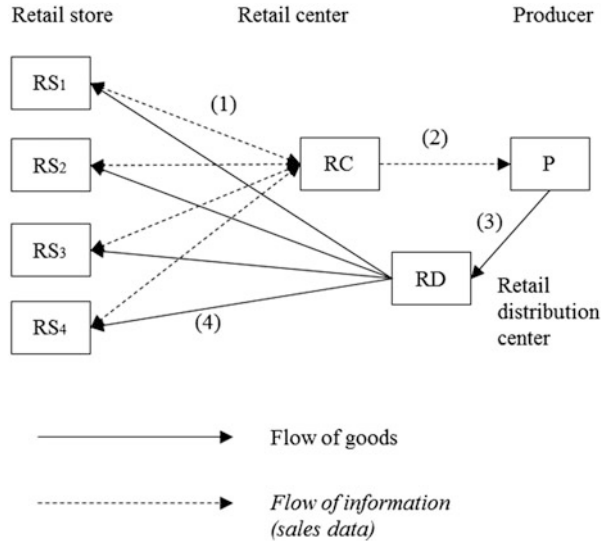
The last three are often referred to as “category management.” ECR is broader than “quick response” delivery systems, as it aims at developing an efficient and effective overall process organization involving “continuous replenishment.”

To guarantee continuous supply, an attempt is made to optimize stock levels using automatic stock replenishment systems. These involve inventory and order information being automatically communicated to a central warehouse and outlets for analysis and response (Gleißner, 2000). The order rhythms of distributors are synchronized with actual demand and the management of inventories is transferred from the distributor to the manufacturer. This is achieved through the continuous exchange of sales and delivery information between those involved.

Figure 5.20 depicts a quick response system.

If the manufacturer controls the distributor and retailer stock levels, the term “vendor managed inventory” is used. A mixed form of control is “comanaged inventory.” Common data and communication standards between the firms are necessary such as the European Article Numbering EAN-System and the Unified Coding Council UCC-System and Automatic Data Capture for capturing barcode scan data. Regarding the labeling of articles, different standards may be used. With the introduction of new technologies, there has been a convergence between digital services and physical service delivery. Technologies like Radio Frequency

Fig. 5.20 Procedures for a quick response system (Source: Corsten & Gössinger, 2001)



Identification (RFID) make it possible to present real objects like people, products, and/or business resources in the virtual world of the Internet. In this way, the physical and online worlds are automatically linked to each other and manual interfaces are minimized. “Passive RFID tags” are creating enormous advantages in the areas of identification, location or follow up. In the future, there will be more and more active or smart tags, which independently take up information from their environment (e.g., temperature), process it (e.g. is this temperature too high?), and communicate it to relevant parties (e.g., warning, temperature is too high) (Fleisch & Christ, 2003).

The ECR concept is an application of the just-in-time strategy. As with just-in-time, EDI (Electronic Data Interchange) plays a major role in the communication between different companies or divisions. The information communicated can include origin data, invoice data, regulation data, sales information, and order data. Electronic transfer on the basis of uniform standards accelerates the flow of information and reduces the rate of errors. This in turn reduces the time needed for business processes. Through reduced stock levels, logistic costs are reduced and personnel may be reduced due to the low error rates (Corsten & Hofstetter, 2003). With the further development of these technologies, there will be even more improvements in the future.

5.3.3 The Evolution of Supply Chain Management

There are five phases in the evolution of production and procurement planning systems (Bellmann, 2002):

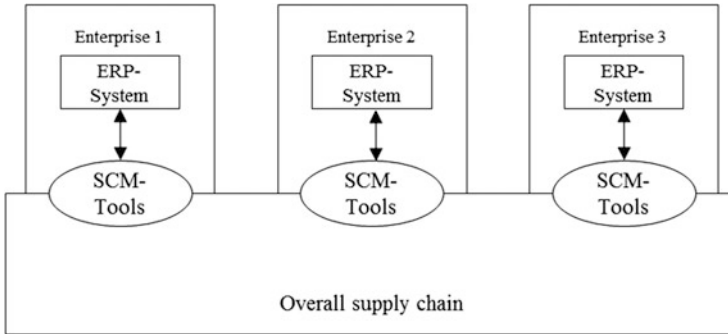


Fig. 5.21 Interplay between ERP- and SCM systems (Source: Corsten & Gössinger, 2001)

- **Production planning**
This is the era of production orientation that still dominated in the middle of the twentieth century. Here production, assembly, delivery and stock management, research and development, and procurement are all viewed as subelements of production.
- **Material Requirement Planning (MRP)**
The emergence of the MRP concept resulted in the separation of procurement from the other tasks of production in order to seek greater efficiencies. Sales initiated demand, which was then carried out by production and procurement. With the help of item-list processors, the secondary demand for production and procurement according to type, quantity, and delivery date was generated.
- **Production Planning and Control (PPC)**
Due to the increasing rate of change in products and increased component variety in the 70s, a need emerged to expand MRP systems. The PPC systems were developed to deal with these more complex buying tasks and allow for flexible planning. The best known concept is the Manufacturing Resource Planning or MRPII concept.
- **Enterprise Resource Planning (ERP)**
The next step in the evolution of the procurement function from a purely operational focus to a key area of strategy came as the PPC system was embedded into integrated business application systems. These ERP systems comprise modules for financial accounting, cost and performance systems, personnel management, quality management, all the way to maintenance management, and corporate planning (Corsten & Gössinger, 2001).
- **Extended Resource Planning (XRP)**
The convergence of intraorganizational coordinating systems, such as ERP, and supply chain systems did not occur until the midnineties. There were two different kinds of developments (Corsten & Gössinger, 2001). First, existing supply chain management software systems now took over individual ERP modules. Second, ERP systems were being supplemented by certain types of supply chain management (SCM) models. But existing ERP systems remain and continue to form the backbone of XRP systems (Bellmann, 2002). Figure 5.21

shows the interaction of the two systems in supply chains today. The future will involve even more sophisticated, intelligent, flexible, and integrated ICT systems linking and coordinating the activities of the networks of firms involved in supply chains.

Exercises

1. Characterize the term “supply management”!
2. Name, categorize, and describe the different types of procurement objectives!
3. Give the main characteristics of just-in-time procurement!
4. Explain the advantages and disadvantages of “single sourcing,” “sole sourcing,” “dual sourcing,” and “multiple sourcing”!
5. Give the main characteristics of “modular sourcing” and “system sourcing”!
6. Explain the advantages and disadvantages of “local sourcing” and “global sourcing”!
7. Briefly describe the particular features of “internal sourcing”!
8. Explain the advantages and disadvantages of “stock sourcing” or “just-in-time sourcing”!
9. Explain the requirements for and manifestations of “collective sourcing”!
10. Name and describe the different approaches to procurement planning!
11. Discuss the advantages and disadvantages of a centralized purchasing organization.
12. What is to be understood by the term “material group management”?
13. What are the tasks of procurement market research?
14. Discuss the advantages but also possible problems tied to a use of the Balanced Scorecard!
15. Describe the concept of “total quality management”!
16. Explain the difference between the terms “electronic procurement” and “supply chain management”!

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Market research is essential for reducing firm uncertainty and sustaining a firm's competitiveness in business-to-business marketing. This chapter describes the different types of market research firm's use to improve their understanding of the markets in which they compete. In addition, we describe the ways knowledge from individual market transactions can be transformed into valuable market information. The final part of the chapter discusses the communication of market information in the firm.

6.1 Information and Information Flow in Business-to-Business Marketing

Firms face many types of uncertainty in making decisions and running their business affairs. These include the differing nature of customers' demand and their responses to different market activities, the requirements and reactions of other market participants, including suppliers, distributors, complementors, governments, and competitors, and the nature of the broader environment in which a firm operates (Hirshleifer, 1973). Uncertainty exists because information is incomplete, costly to obtain and unequally spread (Akerlof, 1970), and because information asymmetries exist between buyers and sellers.

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6.1.1 Impact of Market Research on Firm Competitive Advantage

Performance depends on acquiring and using relevant market and other types of information. This is in part systematically obtained through market research, which refers to the identification of market conditions and requirements, and the design and guidance of the internal performance assessment systems to meet the requirements of the market. The marketing research function involves gathering data about the customer, competitors, and the environment in order to develop competitive market offers and is a central ingredient for success. Detailed knowledge of customer requirements and the context in which they operate determines the effectiveness of entrepreneurial activities and guides internal performance.

Data, knowledge, and information are different. Data is the input, including qualitative and quantitative measures and formal and informal insight into market conditions that exist or are collected. Knowledge arises when the data is interpreted and stored. Knowledge used for a purpose becomes relevant information. Figure 6.1 summarizes this process and shows data being transformed into progressively more relevant knowledge and information.

More effective information generation comes about when there is an understanding of what information is needed to achieve competitive advantage. Competitive advantage is the product of two components, customer advantage and supplier advantage, and information about both is relevant:

- Information for supplier advantage
Supplier advantage stems from the resource advantages that a supplier possesses relative to its competitors that enable it to provide superior customer value. This provides a sustainable competitive advantage in the marketplace if the value created and delivered to customers remains greater than that of competitors. Hence, information that facilitates an understanding of resources available, how they can or might be combined for greater effectiveness and how they are or might be utilized is critical.
- Information for customer advantage
Supplier advantage is reflected in customer advantage. This reflects the effectiveness of a supplier's activities, the degree to which a supplier responds to the requirements and expectations of customers. Customer advantage is realized in the form of a market offer perceived as superior to competition by the customer. Information about market offerings and their effectiveness is therefore critical.

The following sections focus on the types and uses of marketing research to achieve customer advantage.

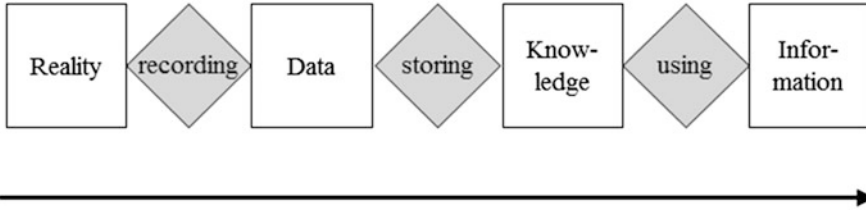


Fig. 6.1 The transformation process of the information gathering (Source: Jacob, 1995)

6.1.2 Information Flows in Business-to-Business Marketing

The creation and maintenance of customer advantage requires a capability to act. This in part depends on the availability of relevant and timely information. Two types of information are required: information to identify general market conditions and market potential and information which will enable the design and control of market offers and strategies for customers within a specific context.

1. Information to Assess Market Potential

Firms need to identify market segments to serve that they can serve better than competition. This requires information about the general market including the broad patterns of demand and supply and the way in which the market is evolving.

Example

Humboldt Inc. is a medium-sized producer of electrical interface products like plugs for cables and connections. For these products there are a number of so-called BUS standards, including *Profibus*, *Interbus-C/S*, and *Feldbus*—M1 among others. The systems are competing to become the industry standard with each being supported by different suppliers. Mr. Lawson is a product manager at Humboldt responsible for industrial automation equipment. To survive in this market, Mr. Lawson needs to make his product fit with the standards that will ultimately prevail. Hence, he needs information that will assist in monitoring and influencing the customers' decision processes and predicting the adoption of standards in this market.

2. Target Market Information

To tailor an offer to a particular segment requires a variety of types of customer information: their requirements, the nature of their environment, and the nature of competition. The information needed is customer and transaction specific and involves collecting and utilizing information about ongoing interactions in the market. Information about the customer is transformed into an understanding or knowledge of how to effectively provide them with products and services. Value is

created by effectively integrating the customer into the value creation process, and so information on how to create value for and with the customer is needed.

Example

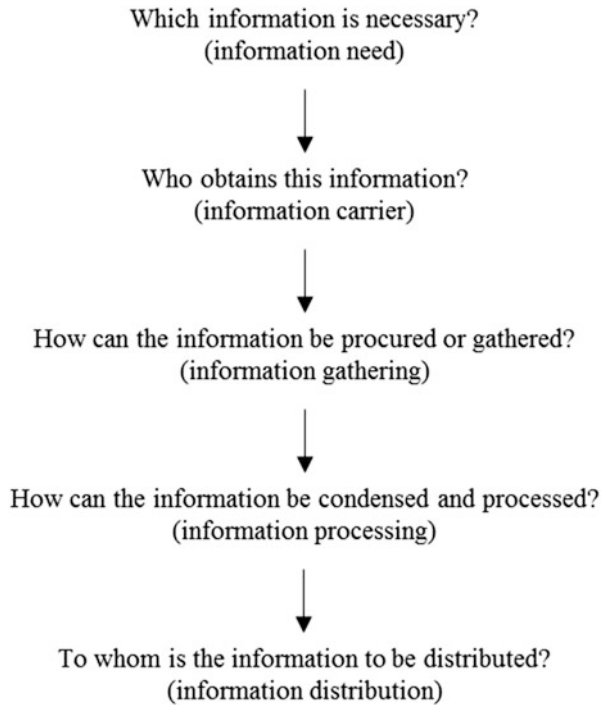
Mr. McArdle is a distribution engineer in the sales force of Humboldt Inc. Currently, he is competing to supply the interface solution component for a signal transmission device that will operate through telecommunication networks. Such a system will allow for the transmission of disturbance messages, alarm signals, or guidance orders between a centralized control and distant sites. To win the supply contract, Mr. McArdle needs a range of different types of information including: the size of the project, the existing infrastructure of the signal transmission producer, the performance and structure of other system component suppliers and potential suppliers, the people involved in the procurement process in the customer organization, the nature and standing of interface solution competitors, etc.

The two major categories of market information deal with market potential as distinct from transaction and customer-specific information. The following two sections of this chapter (6.2 and 6.3) describe these two categories.

The two activities are somewhat overlapping as they are part of the larger system of activities of customers, competitors, and other organizations that comprise the market system in which a firm operates. Transaction-specific episode information will be combined to assess market potential but information about specific transactions can also be useful in certain circumstances. Another part in this chapter takes a closer look at the process of transformation and integration of information (Sect. 6.4). Irrespective of what kind is sought, the processes of assessing the source and modes of collection of data are the same. This is encapsulated in five basic questions given in Fig. 6.2.

The first three questions refer to assessing the information to be gathered, the sources of information, and the methods of gathering it, while the latter two are concerned with data analysis and interpretation and communication. In this chapter, we focus on information gathering methods. First we consider methods to assess market potential, followed by transaction- or episode-specific information gathering.

Fig. 6.2 Fundamental questions of information provision



6.2 Research Methods for Assessing Market Potential

To organize the discussion, we make use of the concept of the marketing triangle—the focal firm, customers and competitors, as well as the environmental context (Ohmae, 1988). To assess market potential, information about each is required. Different types of information are involved in analyzing the demand situation (customer analysis), the firm’s strengths and weakness, the competitive situation, and the environmental situation. But the methods used to collect information and issues involved in collecting it are basically the same. Information relevant for analyzing market potential is defined as follows:

Definition 1: Information for Assessing Market Potential

Market potential analysis includes all information necessary to identify ways of developing and sustaining customer advantage.

This definition highlights the *action-oriented* nature of market research. It includes the collection, analysis, interpretation, and communication of necessary information. This process involves analysis of what information is needed—that

which informs marketing decisions and actions—as distinct from that which is available and might be nice to know. It is a *combination* of information that is sought: including critical factors regarding the internal firm situation, the customer, competitor, and environmental conditions. The information that is collected and the way these various kinds of information are combined determine the effectiveness of the market research undertaken. The strengths and weakness of a firm's resources determine its supplier advantage, but it is the effectiveness with which it uses these resources and advantages in an environment relative to competition and customer needs that creates customer advantage. The capability to use resources effectively depends in part on the information available on how to do so.

The research process is depicted in Fig. 6.3. The research process begins with a determination of the information required, which depends on what it is to be used for. After determining information needs, existing information is examined to identify information gaps—differences between existing and desired information. This gap determines the research task and the various sources and types of information that may be used to gather the necessary information.

A basic distinction is between *secondary research*, the collecting of already-existing information, and *primary research* where information is generated for the first time in various ways. The design of primary research involves making decisions about the method or methods to use and how to carry them out.

In the final steps the information collected is processed to make it relevant to the user. This depends on the research problem. Information processing can take a number of forms including summarizing and describing the data collected and various forms of exploration and analysis. The processed information is then communicated to the users. The following sections describe this process.

6.2.1 Determining Required Information

Research starts with problem formulation—what is the specific problem or problems that require information to help solve them? Once the problem is defined, we are better able to ascertain the information required. However, the costs versus the potential benefits of acquiring and using information must be considered as well.

The kinds of information that may be sought are many, including demand, resources, competition, and the environment the firm faces. For example, the analysis of demand could include these issues:

- Understanding the customers' problems and requirements
- Customer purchase criteria
- Price sensitivity
- Existence of different market segments and analysis of potential target markets.

These issues highlight the important role of problem formulation in designing effective research. A problem well formulated is half solved. Correct formulation of

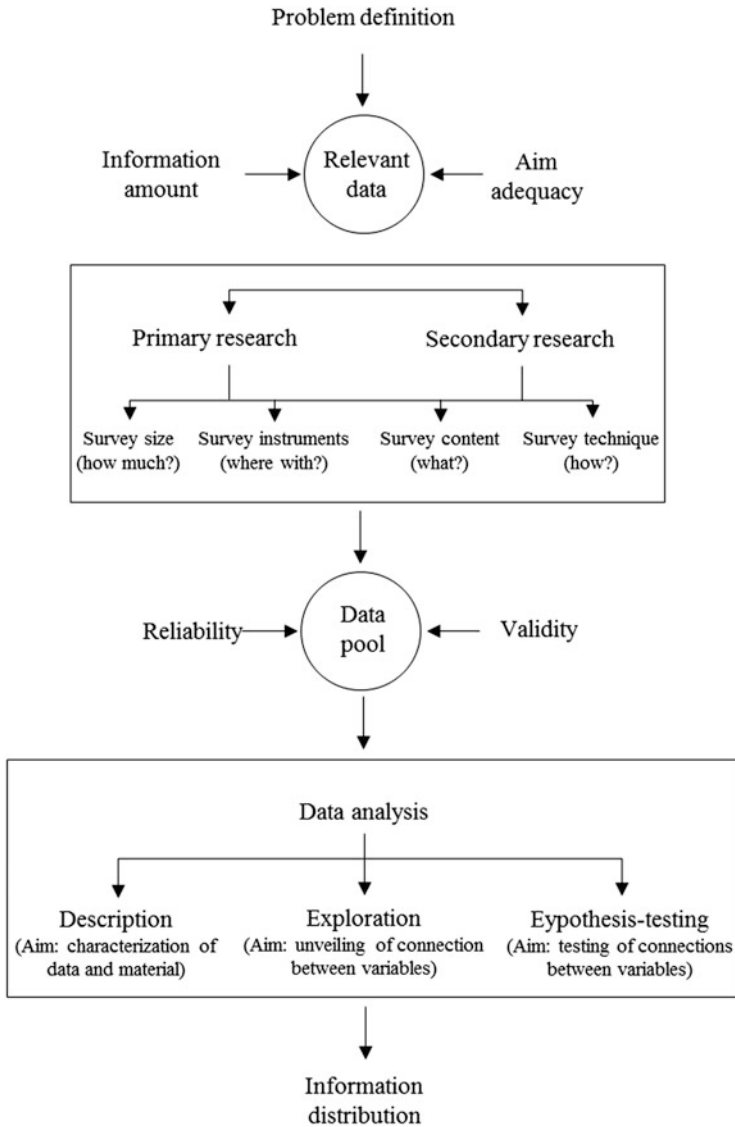


Fig. 6.3 The information collecting, sorting, and communication process

the problem means that more appropriate methods will be used to collect, analyze, and communicate the information required. For example, deciding that a telephone survey is the best method drives decisions about the way to formulate questions and the types of measures to use. Decisions about research design are influenced also by how much information already exists.

The research process is not a simple linear process, as is implied in Fig. 6.3. Rather, there is continual cycling backward and forward among stages as firms learn about and adapt their research design and its implementation.

6.2.2 Information Sources

The difference between the amount of information needed and data already available is called the “information gap.” The goal of research is to close this gap using the most effective information sources available.

Information sources can be differentiated according to whether they are internal or external to the organization and whether the information collected is primary or secondary in nature. Internal information is likely to be more accessible and hence less costly. Both internal and external information may be collected through either primary or secondary research modes.

Definition 2: Primary Research

Acquisition of new information from new and/or existing data sources

Definition 3: Secondary Research

Acquisition of existing information from internal and/or external data sources

As the definitions indicate, the critical distinction between primary or “field” research and secondary or “desk” research is one of *creation* versus *procuring* of information.

Each type of research has its advantages and disadvantages. Secondary research often requires fewer financial and time resources to obtain than does primary research, making it an attractive option. However, the secondary information available may be insufficient, only partially relevant, dated, and/or of poor or unknown quality. The type of information sought affects the type of research done. For example, if simple descriptions of past behavior are sought, secondary research may provide everything that is required but, if deeper descriptions and/or explanations of buyers or competitors are needed, primary research is likely to be needed. Figure 6.4 compares the productivity of primary versus secondary information in terms of obtaining answers to different types of questions about competitors. As you move from simpler questions, e.g., a mere description of competitors’ organizational structures, to more sophisticated ones like competitors’ future strategies, the more the appropriateness of a secondary research decreases and the relevance of primary research increases.

A complete listing of possible information sources is not only impossible but also not useful, as the relevant information sources depend on problem formulation. The broad range of potential information sources is illustrated in Table 6.1

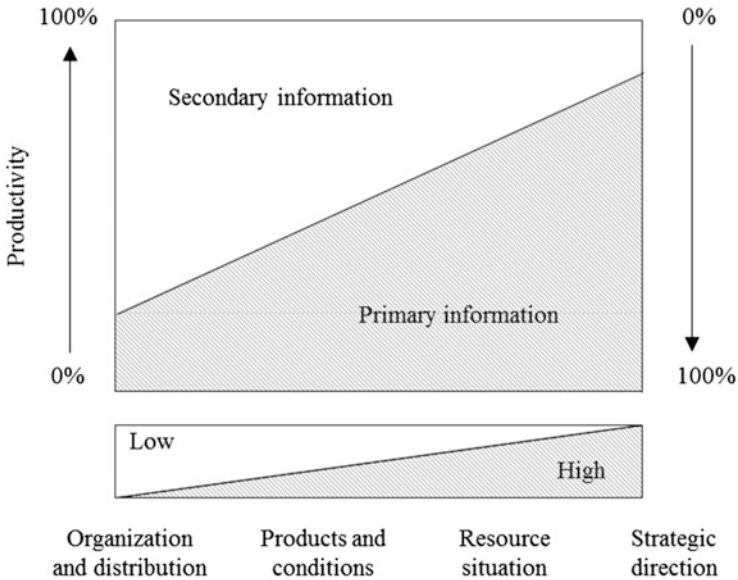


Fig. 6.4 Productivity of information sources in the example of information about competitors

Secondary information sources are of great importance in business-to-business marketing. This is because buyers here are organizations for which richer secondary material is available than for final consumers. But not all information to close the information gap is available through secondary research. Primary research may also be required.

The increasing power and accessibility of computers and the development of the Internet has made all kinds of information easily and quickly available at low cost these days. Relevant information may also be collected, processed, stored, and made easily accessible from computerized organizational databases. The number and sophistication of external databases have also grown sharply. Rather than provide a list of the many databases available, whose relevance will depend on the kind of industry and market you are interested in, here we provide a more general overview.

Databases in electronic form may be available both online and in other media forms, such as a CD-ROM. If using an online database, a license agreement is concluded between the supplier and user specifying the costs incurred for each piece of information provided. These costs are determined based on the extent and scope of the information required, as well as on costs and research effort required to generate the data. A general categorization of databases is provided in Fig. 6.5:

Table 6.1 Potential information sources in business-to-business

Source of information	Information procurement method	
	Secondary research	Primary research
Internal	<ul style="list-style-type: none"> • Reports <ul style="list-style-type: none"> – From the sales force – From the accounting – From the R&D department – From the customer service – From the market research or marketing department – From trade fairs • Statistics on <ul style="list-style-type: none"> – Development of orders, sales, turnover – Complaints – Customer structure – Stock – Production development • Existing market surveys 	<ul style="list-style-type: none"> • Sales force • Internal early warning systems (weak signals) • Internal suggestion system • Creativity meetings • Employees in sales or foreign outlets • Quality circles • Round-table talks
External	<ul style="list-style-type: none"> • Address books and handbooks • Official statistics, i.e., <ul style="list-style-type: none"> – Foreign institutions concerned with statistics – Governmental statistics offices – International organizations • Advertisements and mailings • Calls for tenders • Reports, analyses, or statistics from <ul style="list-style-type: none"> – Banks and insurance companies – Market research institutes – Trade fair organizers – Patent officials – User groups – Companies (annual reports) – Scientific institutions, chambers, unions, and economic organizations • Database research • Special interest magazines, professional literature • Legal announcements/trade register excerpts • Prospectuses, catalogues, demonstration centers • Business information services, business media 	<ul style="list-style-type: none"> • Interviews with <ul style="list-style-type: none"> – Actual or potential customers – Actual or potential competitors – OEM – Later value chain stages – Lead users User groups • Discontinuity interviews • Expert interviews, e.g., in consulting companies, procurement companies, distributors, trade chambers, industry unions, ministries, organizations • “Reverse engineering” of competing products

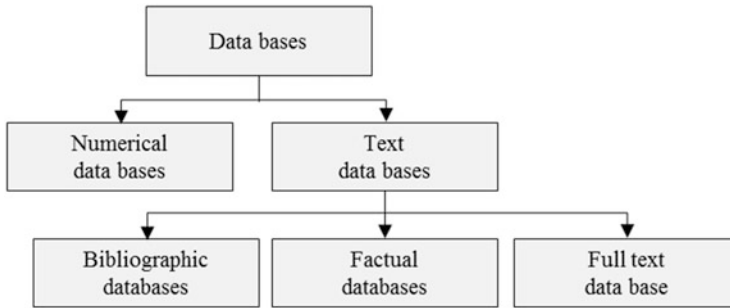


Fig. 6.5 Types of databases

Numerical databases contain statistical information, historical overviews, and forecasts at different levels of aggregation. An example here is the census.gov database, which contains the database of the U.S. Census Bureau, which includes population, households, and income reports. *Text databases* contain text fragments or full texts and can be further categorized as:

- Bibliographic databases, which only contain information on the title of a publication or study, key words from the contents, and/or other bibliographical information.
- Factual databases, which usually only provide abstracts of publications.
- Full-text databases, which store the complete publication or study.

In order to ensure that databases work effectively, they must fulfill a series of requirements. They must be capable of storing a great deal of factual and specialist information in order to satisfy the ever changing demands and queries of their users. In addition, they must be reliable and offer less technically skilled users, a facility that is easy to use. In addition, multidimensional query facilities, a means of logically combining several search criteria, and a clearly structured report format are standard features.

The potential use of databases by firms includes the analysis of the competitive situation and market by means of economic and industry databases, statistics databases, or company listings, such as Forrester Research. Database research can also be used to monitor the economic and business environment, using the economic, legal, and sociological data provided, for example, by the OECD Washington Center database.

6.2.3 Primary Research

Primary research involves the systematic collection of new data relevant to solving a management problem. To begin with the relevant population of interest has to be determined, i.e., who we want to obtain information from and about. For instance,

for a customer analysis, firms of interest may be differentiated in terms of various characteristics, such as industry, company size, or number of employees.

Once the population of interest has been defined, various decisions have to be made, including:

- Sampling (from whom in the population data is to be gathered)
- Methods of data gathering (by which means)
- Survey content (what data are to be collected)
- Survey technique (how is the data to be measured and asked for).

6.2.3.1 Sampling

Once the relevant population has been determined, the next question is whether to survey all members of the population (i.e., census) or only a sample. Sample surveys are used because of time and cost considerations.

Definition 4: Sample Survey

Survey of a part of a population of interest with the aim of making inferences about characteristics of the whole population.

Sample surveys are subject to errors of various kinds, which can be subdivided into two categories:

- Sampling error
These arise because results for a sample can differ from the characteristics of the overall population and are unavoidable. The degree of sampling error depends on the size of sample and any biases arising from how it is selected. Statistical methods enable inferences to be made from sample results to population values taking into account sampling error.
- Systematic error
These are a number of potential biases in surveys that can be avoided or minimized by means of appropriate survey design but which cannot be estimated with statistical methods. They arise for various reasons, including:
 - Biased definition of the data to be obtained via a survey
 - Biased selection of the survey units (representation bias)
 - Biased handling of the selection process (selection bias)
 - Biased questioning due to inappropriate question formulation
 - Respondents not answering questions (nonresponse error)
 - Data collection and recording errors

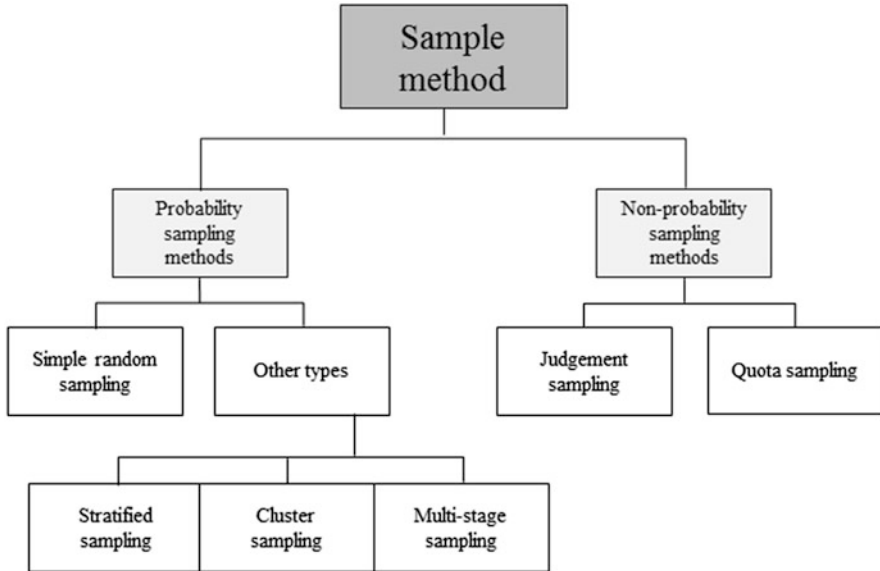


Fig. 6.6 Common selection procedures at sample surveys

- Data analysis errors, such as the use of inappropriate procedures and errors in interpreting results.

Errors and biases are minimized through careful planning, implementation, and processing of survey data.

There are different methods for selecting samples from a population. A key distinction is between probability and non-probability sampling methods. With probability sampling methods, the probability of a particular member of the population being included in the sample is known and statistical sampling theory can be used to make inferences about the population from the sample results. With non-probability sampling methods, the probability of selection is not known and sampling errors cannot be estimated. Figure 6.6 provides an overview of sampling methods.

Probability Sampling Methods

Here sample selection gives each member of the population of interest some known, not necessarily equal, probability of being included in the sample. It is not up to the researcher to judge who to include in the sample. This means that sampling theory can be used to estimate sampling error and to make inferences about the population, including confidence intervals for population values of relevant statistics. It is also possible to use sampling theory to determine the sample size necessary to achieve a given degree of precision or amount of error tolerated in the population inferences.

The most common and easiest method of probability sampling is *simple random sampling*, where every element in the population has the same probability to being included in the sample. Different selection techniques may be used to achieve this, such as using random number tables and lotteries. These will not be explained further here—for more details see, for example, Aaker, Kumar, and Day (2007). Other types of probability sampling methods do not result in equal chance of selection. The main types are:

- **Stratified sampling**
This is where the population of interest is first divided into different subtypes or strata, e.g., large and small firms, and separate samples are drawn from each stratum, with not necessarily the same probability of selection in each. This spreading of the sample across strata is done to achieve greater efficiency and/or precision in the resulting sample estimates.
- **Cluster sampling**
This is where the population is first divided into groups or clusters, e.g., regions, and some clusters are selected for inclusion in the sample with a known probability, such as with probability of selection proportional to the size of the cluster. Thus some clusters are selected for inclusion and others not. All members of cluster become part of the sample, or further subsampling occurs within the cluster.
- **Multistage sampling**
Here cluster sampling based on one level of grouping of the population is followed by further subsampling within the selected clusters. For example, smaller geographic regions may be sampled within a selected broader region until eventually individual sample members are selected within a selected local area.

Non-probability Sampling Methods

Non-probability sampling methods are different because the probability of being included in the sample is unknown, as when people are interviewed at railway stations, shopping malls, in the street, or at trade fairs. While such methods are often used, there is no way of determining how representative the resulting samples are of the population of interest, and sampling theory cannot be used to make inferences from the sample about the population.

Two methods are commonly used.

- **Judgment sampling**
Here particular members of the population are deliberately selected for inclusion in the survey. These may be those judged to be particularly important given the management problem or those judged to be “typical” or representative of the population of interest. In business-to-business marketing, large companies are often the focus of surveys because they are seen to be the most important; small or medium-sized firms are ignored.

Table 6.2 Example of a quota directive for an interviewer

Overall number of interviews: 12		
Industry	Plant construction	[7] 1234567
	Machine construction	[5] 12345
Place	Berlin	[3] 123
	Frankfurt/Main	[4] 1234
	Leipzig	[2] 12
	Munich	[3] 123
Company size	500–2,000 employees	[3] 123
	2,000–5,000 employees	[4] 1234
	Over 5,000 employees	[5] 12345
Turnover	Up to € 200 mio.	[4] 1234
	€ 200–€ 500 mio.	[3] 123
	€ 500–€ 1 bn.	[2] 12
	More than € 1 bn.	[3] 123

- Quota sampling

In quota sampling the desired composition of the sample is specified in terms of various characteristics of the people or firms to be included. Quotas are then given to interviewers in terms of the mix of types of people or firms to be interviewed, as illustrated in Table 6.2. The aim of quota sampling is to make the sample resemble the population of interest in terms of known characteristics. The problem is that usually only a few easily identifiable characteristics can be used, which may not be the most relevant.

The sampling methods described have various types of advantages and disadvantages, which we will not discuss in detail here. An overview is given in Table 6.3.

As far as possible probability sampling methods should be used. But this is not possible if knowledge of the population of interest is imperfect. In this situation firms often turn to quota sampling methods. Although quota sampling can be objected to on various grounds, its supporters argue that there are ways of minimizing the problems and improving the results (e.g., Melnick, Colombo, Tashjian, & Melnick, 1991). In addition, some comparisons of survey results using simple random sampling versus the quota sampling have shown no significant differences (e.g., Böhler, 2004; Hüttner & Schwarting, 2002). This leads supporters of quota sampling to argue that it is reliable and can produce results representative of the population of interest. For this to happen quotas need to be based on features of the population of interest that correlate strongly with the characteristics to be measured in the survey. If the correlation is perfect with a particular population characteristic, quota sampling based on this characteristic can produce representative results (Hammann & Erichson, 2004).

Table 6.3 Selected advantages and disadvantages of random sample methods

	Advantages	Disadvantages
Simple random sampling	<ul style="list-style-type: none"> • Results in a representative sample without prior knowledge about the structure of the population • Sampling error can be estimated • Researcher selection biases excluded 	<ul style="list-style-type: none"> • All conditions only rarely fulfilled (e.g., existence of a list of all population members) • Problems of nonresponse • High costs of planning and implementation • Sampled units must not be substituted for
Stratified sampling	<ul style="list-style-type: none"> • Improved sampling of a population with differing variance in each strata • Increased sampling precision for same sample size • Cost advantage • Separate group-evaluation possible 	<ul style="list-style-type: none"> • Knowledge about the size of the strata and their differences is necessary • Representativeness problems arise if the survey criteria and stratification criteria only correlate weakly • Stratification features have to be easily identifiable
Cluster sampling	<ul style="list-style-type: none"> • Time- and cost saving • Different probabilities of selection can be calculated • Can be used if conditions for a simple random sampling (list of all survey units) are not fulfilled 	<ul style="list-style-type: none"> • Suitable clusters cannot always be defined • Negative cluster effect if the clusters are not a good summary of the population
Quota sampling	<ul style="list-style-type: none"> • Matching of sample and population characteristics • Quick to implement • Cost advantage • Selection mechanisms are uncomplicated and easy to implement • Respondents can remain anonymous 	<ul style="list-style-type: none"> • Problem of which quota characteristics to use • Sampling error cannot be estimated • Overrepresentation of those willing to be interviewed and quota characteristics combinations that are easy to find • Control of interviewers difficult

6.2.3.2 Methods of Data Collection

Data can be gathered from a sample of people or firms in different ways. The two basic methods are observations and interviews:

Definition 5: Observations

Monitoring and recording of relevant aspects of a person or firm.

Definition 6: Interviews

Asking questions and recording answers from a person or group.

Table 6.4 Types of interviews

Basis of distinction	Interview method
Who is addressed	<ul style="list-style-type: none"> – Expert interview – Retailer interview – Consumer interview – Employee interview
Mode of questioning	<ul style="list-style-type: none"> – Direct interview – Indirect interview
Form of communication	<ul style="list-style-type: none"> – Self-completed questionnaire – Personal interview – Telephone interview – Computer assisted interviews
Number of people	<ul style="list-style-type: none"> – Individual interview – Group interview
Nature of answer possibilities	<ul style="list-style-type: none"> – Open-ended questions – Pre-structured response alternatives
Frequency of interviewing	<ul style="list-style-type: none"> – One-time interview – Repeat interview – Panel
Interview strategy	<ul style="list-style-type: none"> – Structured – Unstructured
Topics covered	<ul style="list-style-type: none"> – Specialized interview – Omnibus interview

Observations can be made using machines and/or people. Mechanical observations include video recording of behavior and instruments to measure physiological responses to stimuli like pictures and words, such as skin resistance, temperature, or voice frequency. People can conduct participant and nonparticipant observations. In participant observations the observer becomes involved in the actions being observed, as when a researcher accompanies a salesperson or plays the role of one. In nonparticipant observation the researcher remains passive. In business-to-business marketing, the most common types of observations are formal or informal observations of competitors, customers, and other organizations' behavior, responses, and organization in markets.

Interviews are the most commonly used method for gathering information in business marketing, and Table 6.4 summarizes the main types used in terms of various dimensions.

A detailed discussion of interview methods is beyond the scope of this chapter (see, for example, Aaker et al., 2007; Hague, 2002; Lockhart & Russo, 1994; Malhotra et al., 2012; Weiers, 1984). Here, we wish to emphasize that all interviews involve a form of communication with the interview target and have different strengths and weakness, as summarized in Table 6.5. In the end, a decision about the type of interviews to conduct depends on the decision problem, the type and quality of information required, the cooperation of the respondent, and the costs involved.

Table 6.5 Advantages and disadvantages of survey methods depending on the communication form

	Advantages	Disadvantages
Written interview	<ul style="list-style-type: none"> – Cost advantage – Large samples – No interviewer-respondent interaction error – Control over response pictures and illustrations can be used 	<ul style="list-style-type: none"> – Low response rates – Lack of control over misunderstandings of questions – Questionnaire size must be manageable for the respondent – Links between different respondents cannot be excluded
Oral interview	<ul style="list-style-type: none"> – Ability to observe nonverbal and context information – Flexible – High response rates – More complex questions possible 	<ul style="list-style-type: none"> – No anonymity – Interviewer-respondent interaction error – High expenses – Survey design and data collection take longer
Telephone interview	<ul style="list-style-type: none"> – Cost advantage – Speed of data acquisition – Relatively low interviewer influence 	<ul style="list-style-type: none"> – Limited flexibility – Respondent's context cannot be observed – Non-coverage due to secret numbers or non-up-to-date phone records
Computer-assisted interviews	<ul style="list-style-type: none"> – Data processing mistakes can be avoided – No interviewer-respondent interaction error – Consistency can be tested and mistakes controlled automatically – Sampling control easier – Order effects avoidable by means of a randomization of the question order – Use of filter questions – More flexible application 	<ul style="list-style-type: none"> – Respondent concentration – Interview situation cannot be observed – Survey design takes longer – Only usable under certain conditions

With advances in computer technologies, computer-assisted interviews (CAI) have become an important means of gathering data. Various forms of CAI exist as summarized in Fig. 6.7.

In computer-assisted telephone interviews (CATI), the telephone interview is usually conducted by the telephone lab of a research organization. The interviewer is guided through the CATI system and responses are recorded electronically. The CATI system manages not only addresses and dates but also controls sampling and the course of the interview, including adapting questions according to responses or by question rotation. Computer-assisted personal interviews (CAPI) are personal interviews where the interviewer controls the interview process with the aid of a computer. The CAPI method is particularly useful if the subject of the interview requires an interviewer to be present and if objects of the interview are to be visualized or shown in animations.

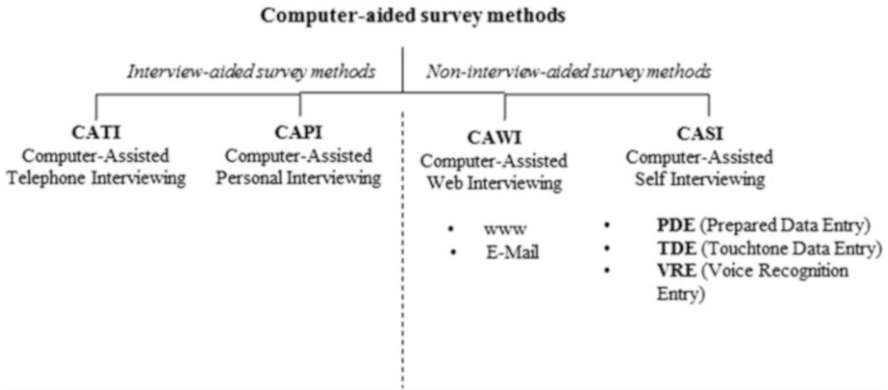


Fig. 6.7 Types of computer-assisted interviews (CAI)

A more recent development is online surveys or computer-assisted web interviews (CAWI). The questionnaire stored on a Web server is opened and completed by the respondent. Methods of controlling the interview process are the same as for CATI. The questionnaire program runs automatically and the respondent can reply using preformulated answers (prepared data entry) or by typing in answers or by voice recognition entry. CAWI are popular because online studies usually generate substantial survey data within a very short period. However, the representativeness of online surveys is questionable. On the one hand, the basic population of Internet users is not easy to define, which means that it is not really possible to obtain a real random sample, particularly in Web surveys. Also, the sample usually consists of people who volunteer to take part in the survey; thus, there is no true random sample available and may even contain software agents (bots) pretending to be people in order to earn money from participating in online surveys.

Table 6.6 provides an overview of the main advantages and disadvantages of the various forms of CAI (for more details see: Dillman, Smyth, & Christian, 2008; Saris, 1991; Weeks, 1992).

6.2.3.3 Designing the Survey Instrument

The topics covered in a survey are derived from the management problem to be solved. They have to be translated into specific questions that the respondent can answer. In the following, we use the example of measuring a person’s attitudes towards a firm’s products and services.

The specific attitude questions to be included have to reflect the dimensions the people interviewed use to assess the products and services. These may vary from person to person, and so the focus is usually on the most commonly used dimensions. One way of identifying relevant attitude statements to include in a survey is through a review of relevant literature, prospectuses, and reports. But these may not be the same as those used by actual and potential customers. Other

Table 6.6 Advantages and disadvantages of computer-assisted interviews

	Advantages	Disadvantages
Computer-assisted telephone interviews (CATI)	<ul style="list-style-type: none"> – Sequence effects can be excluded (randomization) – Use of filter questions – Means of obtaining intermediate results 	<ul style="list-style-type: none"> – Interviewer influences – High costs for training interviewers
Computer-assisted personal interviews (CAPI)	<ul style="list-style-type: none"> – Complex questions possible – Data can be processed and analyzed rapidly – Cost saving in data acquisition 	<ul style="list-style-type: none"> – Substantial programming costs – High costs for training interviewers – Influence of interviewer
Computer-assisted Web interviews (CAWI)	<ul style="list-style-type: none"> – No influence by interviewer – Complex questions possible – Use of filter questions – Independent of time and location – Wide range of possibilities for using visual media (sound, image, . . .) – Lower costs (also no costs for training of interviewers) 	<ul style="list-style-type: none"> – Substantial programming costs – Representativeness of sample (internet users only, age structure of Internet users) – No means of requesting clarification
Computer-assisted self-interviewing (CASI)	<ul style="list-style-type: none"> – No influence by interviewer – Complex questions possible – Use of filter questions – Lower costs (also no costs for training of interviewers) 	<ul style="list-style-type: none"> – No means of requesting clarification

sources are open-ended exploratory interviews with members of the population of interest. Fishbein (1967) suggests that, when measuring attitudes, about 10–12 features are usually relevant (salient).

Due to its strong theoretical base, we describe the use of the *construct repertory grid test* (Rep test) developed by Kelly, based on his theory of personality (Kelly, 1963). People develop mental constructs to help them make sense of the world they experience. These constructs influence our behavior and expectations and are under constant review based on a person's ongoing experience. The environment is a "frame of reference within which objects or events are compared, evaluated, and distinguished, a frame of reference that is built around bipolar personal constructs which form a hierarchical system. The constructs are the outcome of processing personal experience through a simultaneous perception of contrast and similarity between objects events or any kind of sensation." (Müller-Hagedorn & Vornberger, 1979, p. 190). The simultaneous perception of contrast and similarity form the starting point of the Rep test and people are presented with three objects at a time to compare and asked which two are similar and differ from the third. The distinction

made reveals one way in which the objects are compared and evaluated. The test is repeated with different randomly chosen groups of three objects until no further bases of distinction can be identified. The steps when carrying out a Rep test are as follows:

1. From a predetermined set of stimuli (company names, product pictures, product descriptions etc.), which are chosen to represent the objects of interest, the respondent first sorts out those they are not familiar with.
2. From the remaining stimuli, three are selected at random, and the respondent is asked to name those features which two of the objects have in common, or to explain what distinguishes them from the third stimuli.
3. Step 2 is repeated as long as the person is able to identify meaningful differences.

The Rep test has the following advantages (Sampson, 1972):

- By comparing objects on the basis of their similarity and dissimilarity, relevant dimensions of perceptions can be discovered.
- The method approximates real choice situations because the respondent is forced to compare different alternatives.
- Interviewer bias is minimized.
- The identified dimensions of perception are relevant dimensions of evaluation that discriminate well.

6.2.3.4 Questionnaire Design

Data may be collected in many ways from respondents. Here, we focus on the most common forms of market research, where a prestructured questionnaire is used that is either sent to the respondent to self-complete or administered by an interviewer over the phone or in person or via an online survey. Once the information to be collected has been determined, the construction of the questionnaire requires various decisions to be made:

- Interview method
- Order of questions and length of questionnaire
- Types of questioning
- Choice of measurement scales and response formats.

Order of Questions and Size of Questionnaire

The general principle in ordering questions is that earlier questions must not bias the answers to later questions. This type of influence can be minimized by using buffer questions or attention distracting questions. The following scheme is a reasonable order of questions:

- Opening questions to motivate the respondent (break the ice) and to reduce mistrust
- Questions focused on the main topics

- Control questions, which serve as tests of consistency in the answers given
- Classification questions that ask for general characteristics of the respondent and their firm.

There is no established rule for determining the duration of an interview; much depends on the level of motivation and interest of the respondent. Experience has shown, however, that consumer interviews should not last longer than 20–30 min.

Types of Questions

There are many ways of asking questions. One distinction is between open-ended and close-ended question formats. In open-ended questions, there are no prespecified answers for the respondent to choose. This allows the respondent to answer more freely but makes comparing different answers more difficult. The most common form of questioning is close-ended, which prespecifies answer categories. These can take a variety of forms:

- Multiple choice questions:
Multiple choice questions ask the respondent to choose an answer from the alternatives provided. The answers can be either mutually exclusive, where the respondent is asked to choose only one answer, or multiple responses may be permitted. A special case of multiple choice questions is when only two alternatives are provided such as yes/no and agree/don't agree).
- Scale questions:
These are another type of questions with mutually exclusive response categories. The answer categories are numbers or points on a predefined scale designed to reflect an underlying dimension, such as the degree of agreement with an attitude statement or degree of importance of a product or service attribute. Scale questions are useful because they permit the use of statistical methods to analyze the data gathered.

Types of Measurement Scales

The assigning of numbers to answers results in measurement scales with different properties depending on how the numbers are assigned. There are four basic types of scales which differ in terms of the way they can be analyzed. These are summarized in Table 6.7.

Nominal scales are classifications with no underlying metric or dimension such as zip codes, industry codes, and country codes. Ordinal scales have an underlying rank order such that lower numbers mean a higher rank on the relevant dimension, but the distance between ranks is unknown. Interval scales have equal distances between the numbers on the scale in terms of the underlying dimension but have an arbitrary zero. Ratio scales, like age and geographic distance, are interval scales with a real zero like age and number. A description of the theories and methods of scaling is beyond the scope of this chapter (see Bagozzi, 1994; Zikmund & Babin, 2009). Instead, only the most commonly used scaling method is described.

Table 6.7 Scale levels and their features

Scale		Characteristics	Appropriate analytical methods
Nonmetric scales	Nominal scale	Classification of qualitative feature realizations	– Frequency counts
	Ordinal scale	Rank order	– Median – Rank order correlation
Metric scales	Interval scale	Equal interval scales with no natural zero point	– Addition – Subtraction
	Relation scale	Equal interval scales with a natural zero point	– Addition/subtraction – Division – Multiplication

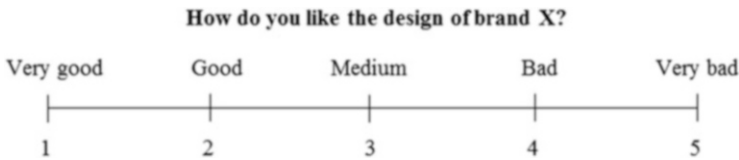


Fig. 6.8 Example of a verbal rating scale

Rating scales measure a respondent’s opinion, attitude, or judgment regarding something. Figure 6.8 gives an example.

When constructing rating scales, the following choices have to be made:

- **Single- vs. bipolar rating scale**
 A single-pole rating scale asks respondents to indicate their judgment regarding a particular concept or statement or attribute using scales such as those varying from good to bad (as in Fig. 6.8), low to high, or from agree to disagree. A bipolar rating scale presents the respondent with a scale anchored at both ends with opposite concepts (e.g., beautiful—ugly, weak—strong) or competing features/attributes and asks them to rate how close their view or preference is to one end or the other.
- **Number of scale points**
 Generally, four- to seven-point scales are used, but scales tend to be quite robust with regard to the number of scale points used. It is important to enable discrimination among respondents and to avoid crowding all answers towards one end of a scale. More recent developments in measurement, such as item response and Rasch scaling methods, are used to overcome some of these measurement problems by enabling the strength of items comprising a scale to be calibrated as well as the strength of a respondent’s responses (Rasch, 1960/1980).

- Even or odd number of scale points
If the number of scale points is even in the case of bipolar scales, then no neutral midpoint exists and the respondent is forced to make a judgment. Odd numbered scales permit those who are neutral to indicate this, but the problem is that a neutral score could mean they dislike both alternatives or that they perceive both as equally strong.
- Forced ratings or not
Forced ratings require respondents to choose a number on the scale that best represents their view or judgment. This may distort the results if the respondent does not have an opinion. Also, respondents might feel uncomfortable with scales or feel uncertain when answering. In order to cope with this situation, alternative categories like no answer, don't know, and not relevant can be offered, as well as questions rating their confidence in their answer.

Strictly speaking, the rating scales commonly used in marketing research only result in ordinal scale levels of measurement, which means that the differences between individual scale points are not necessarily equal. But metric level scales are a necessary condition for a number of statistical analysis methods, which is why researchers tend to assume that the rating scales approximate interval scales.

Measurement scales are simple and easy to construct, use, and interpret, and this has led to their widespread use in marketing research. They have some disadvantages, however:

- Problems due to differences in respondents' interpretations of questions and the meaning of neutral scores on bipolar scales (indifference or ambivalence) in particular.
- The problem of response biases and context effects. Response biases occur when respondents tend to answer all questions in a particular way, such as choosing only extreme values or neutral points; context effects occur for example when respondents have more knowledge about some items in the questionnaire than others and guess on some (tolerance effect), or, if they rate an item high on one dimension, they tend to rate it high on other dimensions ("halo effect").
- The problem of level of measurement noted above.

Finally, measurement validity and reliability must be considered. Measurement validity refers to whether the scale measures what it is supposed to measure—the true value. Measurement reliability refers to the consistency of the answers given (true value). A scale is valid if it is free from systematic error or bias, and this can be tested by reference to external criteria. Reliability is concerned with a measure being free of random errors, which means it gives consistent results across groups and over time. Reliability is a necessary condition for validity (Fig. 6.9).

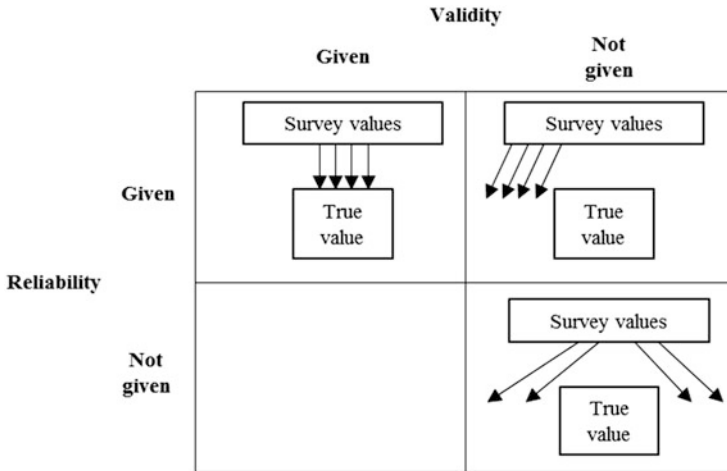


Fig. 6.9 Illustration of validity and reliability

6.2.4 Excursion: The Importance and Value of Market Analyses

No company can survive without being informed about the current situation of market, including demand conditions, competition, the environment, and the position of their firm. Incorrect or inadequate information leads to competitive disadvantages. Despite this many firms still do not carry out regular market analyses. Market research is an investment that is far more important than investments in physical things. This is because the success of a firm depends on its competitive position in the market. As Adam Smith said, the sole purpose of production is consumption. Business markets require substantial investments in advance, which increase market risk and the scope for bad investments. This makes market knowledge ever more important. Information is needed about the problems, requirements, objectives, and desires of actual and potential customers, which can only be obtained through market research and monitoring that is regularly undertaken. It is surprising therefore that in a survey of 354 industrial goods, producers found that they perceive market research as relatively unimportant. In times of economic downturns or market decline, companies tend to tighten their market research budgets and try to reduce costs by doing fewer market surveys, using smaller samples and staying away from more sophisticated and more costly data collection methods (Reinecke & Tomczak, 1994).

Firms forget that a high degree of market orientation is required during R & D and environmental analyses in order to avoid bad strategic developments. In the same way, product and market tests can accelerate market introduction, which is necessary given the shortening of product life cycles. Although market analysis does not guarantee the “right decision,” it reduces the risk of incorrect decisions.

Hence, market research has to be seen as an investment. It is not sufficient to gather information about markets just once or with a narrow focus; information has to be collected on a regular basis. Taking market orientation seriously means reorienting a firm's information gathering activities:

- Market research is required to support a firm being consumer and market oriented by satisfying the information needs arising.
- To generate customer advantage, a firm needs to understand customers' desires. Market segments have to be identified, and segment-specific market analyses have to be carried out.
- Market research has to become an integral part of a firm's early warning system, signaling changes in customers, competitors, or environmental factors. Only the early recognition of significant market changes enables a company to act instead of reacting.

Example

Company crises are like earthquakes:

Some years ago, in the Peoples' Republic of China, attempts were made to predict earthquakes. Information about unusual environmental events such as the unusual behavior of animals, plants, or rivers were collected and interpreted. Each piece of information was not important, but the overall pattern of events allowed for an improved prediction of earthquakes. The terrified behavior of one bird means nothing, but unusual behavior of many animals indicates an unusual development—such as an earthquake.

- All kinds of market knowledge exists in different parts of a firm that have to be identified, brought together and converted into decision-relevant information.
- But most information collected and processed in a firm relates to the past or for justifying past decisions. While information about the past is useful for control purposes, it is information that has relevance to the future that determines market success or failure.

6.3 Research Methods for Gathering Transaction-Specific Information

The subject of the previous section was the general planning and control of market research to support management decisions. In this section we focus on the transaction-specific information and on the information required to successfully and effectively design and execute market transactions to achieve customer integration and customer advantage.

Definition 7: Transaction-Specific Information

All information related to a particular transaction that is required to achieve a customer advantage for the customer.

Here, we are not interested in the general characteristics of customers or segments but in developing customer advantage in a particular transaction. The questions to be answered are:

- What information is needed?
- Who has this information?
- How can this information be gathered and used?

The methods used include detailed methods for gathering specific kinds of information and more holistic methods that attempt to answer all the questions listed above. Table 6.8 provides an overview.

6.3.1 Determining Information Requirements

Two kinds of information are relevant:

- Information related to problem formulation and
- Information related to problem solution.

In business-to-business markets, products or services are used by customers for value creation in their downstream markets. Thus, a necessary condition for a business-to-business supplier in order to achieve a customer advantage is an understanding of the value chain in which the customer firm operates and the problems it faces in achieving its own competitive advantage with its target customers. All market exchange processes involve both a problem description and a problem solution concept.

Problem description involves determining the performance specifications for a purchase that solve the customer's problems from their perspective. Table 6.9 gives an example from the automation industry.

A solution concept is a description of the means of solving a problem description and includes all the relevant features involved. A solution concept is required to achieve customer advantage—be it explicit or implicit. An explicit solution concept involves documenting the relevant functional specifications, i.e., how the requirements are to be met. An example of how such a document might be structured is given in Table 6.10.

The solution concept is not yet the final design for a product or service. It is rather a summary of the relevant information needed to solve the customer's problems.

Table 6.8 Tasks and approaches for gathering episode information

	Information need	Information source	Collecting information		
			Communication interface	Communication channels	
Detail approaches	<ul style="list-style-type: none"> • Drafting performance specifications • Drafting functional specifications 	<ul style="list-style-type: none"> • Buying center analysis • Value chain analysis 	<ul style="list-style-type: none"> • Cooperation (team building) • Qualification (training) • Organization (engineering) 	<p><i>Controlling data collection</i></p> <ul style="list-style-type: none"> • Field presence • Sample exchange • Personnel exchange <p><i>Controlling data transmission:</i></p> <ul style="list-style-type: none"> • Electronic communication 	<p>Process design mapping</p> <ul style="list-style-type: none"> • Process mapping
Holistic approaches	<ul style="list-style-type: none"> • Simultaneous Engineering (SE) • Total Quality Management (TQM) • Quality Function Deployment (QFD) 				

Table 6.9 Draft structure for a performance specification in the automation industry

1.	Project introduction
2.	Description of the starting position
3.	Problem definition
4.	Description of data interfaces
5.	Description of system requirements
6.	Description of implementation and application requirements
7.	Description of quality requirements
8.	Description of project requirements

Table 6.10 Draft structure for functional specifications in the automation industry

9	Systems outline
9.1	Brief description of the solution idea
9.2	Structure of the system solution
9.3	System behavior with regular and irregular conditions
10	System design
10.1	Data processing system
10.2	Data management system
10.3	Software
10.4	Hardware
10.5	Devices
10.6	Overall system design

The responsibilities for meeting the functional specifications, i.e., actually implementing the solution concept, may be distributed in various ways between a supplier, customer, and third parties. Either the customer or the supplier can take the lead, or they may share the tasks and cooperate in various ways. The division of tasks among the parties involved is part of a supplier's marketing strategy.

6.3.2 Determining Information Sources

In business-to-business marketing situations, there is, typically, not a single person but a group of people involved in the buying process, with each member playing a different role and having different requirements. These are referred to as members of the firm's organizational buying unit, and researchers have developed various frameworks to help identify the different types of people involved. There is more discussion of this in the chapter on industrial buying behavior.

Another way of identifying potential sources of information is Porter's value chain concept, which is depicted in Fig. 6.10. Every firm can be understood as performing a set of interrelated activities through which a product or a service is designed, produced, distributed, and supported. There are two basic types of activities—primary and supporting: Primary activities are about the physical creation of a product or service from raw materials, through operations, production, sales, and delivery to the buyer and customer services. Supporting activities

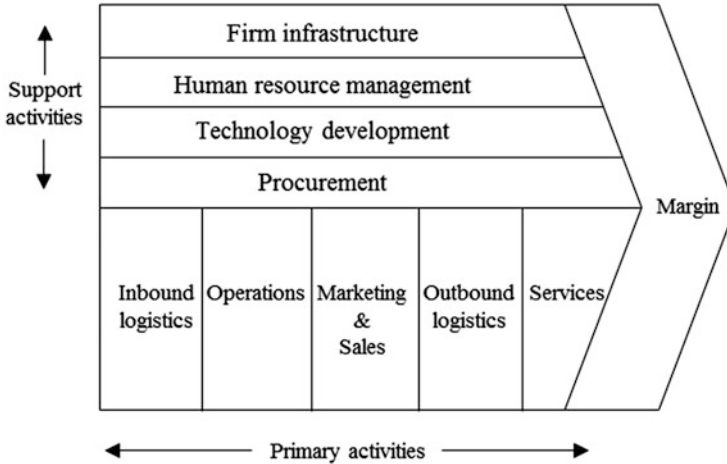


Fig. 6.10 The value chain model (Source: Porter, 1998)

maintain the primary activities by purchasing inputs, technology, human resources, and different functions that serve the company as a whole.

The framework can be used to identify which parts of the customer's value chain are affected by the products or services a firm supplies. This can involve only one or two parts and be easy to understand, or it might involve many parts of the value chain and even extend beyond the boundaries of the customer firm to the value chains of other firms downstream, such as the customer's customers. In principle, all decision makers involved in any part of the value chain can be potentially valuable sources of information. For example, the part of the value chain affected by the purchase of a computer aided design (CAD) system would be identified through a detail analysis of the internal process chain for product development and design. Perhaps more complex and far reaching effects on the customer's value chain would stem from the purchase of an employee training program in "business-to-business marketing."

Any market exchange affects at least two different value chain activities of the customer—purchasing the product or service and the usage of the product or service. Procurement is, by definition, a supporting activity, but usage can take place in any of the primary or supporting activities. Both the activities and the people in charge of them need to be considered when identifying information sources, in addition to others which are able to provide additional information.

6.3.3 Collection of Transaction-Specific Information

Collecting transaction-specific information involves identifying the various sources of information and gathering the information outlined in performance and functional specifications. A supplier has to develop a system for gathering the relevant information as part of the transaction in order to integrate the customer and their views and responses into the value creation and delivery process. This involves:

1. Managing of the communication interface
2. Developing ways to transmit the information
3. Ensuring a timely communication process.

6.3.3.1 Communication Interface Design

Sales and distribution personnel are the frontline people interacting with the customer. Their main functions are usually thought of as selling and delivery, but they can also play an important role in gathering information about the customer during a transaction. An important consideration is the technical competence of the people that interact with the customer, as there is a need to be able to understand technical as well as trade-related aspects of the transaction.

- The project team approach
Here, the supplier tries to organize the interface between the supplier and customer in the form of a project management team, which is also responsible for information gathering. The team consists of people with different competences and skills, including technological competence via the involvement of technicians from engineering departments. A management challenge consists in assigning team leadership either to the technical or the commercial side in the project team. This type of organization is common in the marketing of industrial plants and complex systems.
- The qualification approach
Another way of ensuring the technical competence of people interfacing with the customer is to use only technically qualified people in these roles, i.e., qualified engineers. They supplement their technical qualification with commercial know-how through training on the job and through specialized courses as a part of their career development. This leads to the creation of the position of distribution or sales engineers. This method differs from the cooperation model because a team is not involved with different skills and competences, and so coordination problems do not arise. The problem instead is finding people with the right technical qualifications and the willingness and ability to learn to undertake additional roles.
- The organization approach
Engineering departments somewhere between “pure” R&D and “pure” distribution are another option in designing the supplier’s interface with the customer. This is called application engineering, which is defined as methods to carry out product modifications to meet the specific requirements of individual customers

(Ansoff & Stewart, 1967). These departments necessarily require transaction-specific information and direct interaction with the customer.

Variants of these three forms of interface design can be found in business markets as well as mixtures of them. The overall aim is to secure effective customer integration.

6.3.3.2 Communication Channel Design

The communication task to achieve customer integration focuses on the collection of transaction-specific information from the customer. Both the supplier and the customer can take an active role in the communication process. Two different kinds of tasks are involved:

- Controlling data collection
- Controlling data transmission

Controlling Data Collection

There are various ways to facilitate the communication process between the customer and the supplier:

- Physical presence of the supplier
In many cases, data collection occurs via supplier representatives visiting the customer firm, such as sales personnel. Photos and video of use situations can be used as part of this. These visits should be made by people with appropriate expertise in the area, usually from applied engineering. Travel costs become a significant cost item to be considered when evaluating this method, but it is a false economy to try to compensate for high travel costs by using less qualified people. Using less qualified people will compromise the information gathering role.
- Sample exchange
A second method is for the customer to provide samples that illustrate the way the products or services are to be used. A necessary condition here is of course that relevant samples exist that the buyer can spare and whose transport to the supplier makes sense both economically and technically. If a component is being purchased which will form part of an OEM's output, the supplier can obtain samples of other elements used by the OEM in order to understand how its component has to mesh with these other elements. Problems can arise when the sample may not accurately reflect actual customer usage conditions.
- Personnel exchange
In the software industry, software development often involves the exchange of personnel. In many cases, these are employees from the customer firm's IT departments who work as part of the project team. Personnel from the supplier may also spend time working in the customer firm, such as people from sales-related engineering departments. These so-called "resident application engineers" who are employed by a supplier but work for an OEM customer are becoming more common especially in the car industry. Personnel exchange

is a useful way of exchanging information, as well as a means of influencing a customer's demand. When technical personnel are exchanged, the aim is to achieve common agreement on design parameters that will improve the interfirm value creation process. The issues that arise here are, once again, travel expenses and also how to share personnel costs.

Controlling Data Communication

Once information is collected, processed, and stored, it needs to be communicated from a customer to the producer or supplier. This may be achieved via direct face-to-face communication, for example, between a customer purchasing representative and a supplier sales person. However, today a great amount of communication takes place electronically, including voice over IP (VoIP), electronic data interchange (EDI), and Universal Mobile Telecommunication (UMTS). The use of such technologies for communication has to be planned very carefully as it is too easy to set up systems which can overload managers with information rather than assist their decisions and actions by the provision of timely, relevant, and useful information that helps to reduce the knowledge gap (Brady, Fellenz, & Brookes, 2008).

6.3.3.3 Process Design Transaction-Specific Information

So far we have discussed methods to identify the information to be sought, the target respondents, the manner of information gathering, and the means of communicating the results. All of this is essential to achieve customer integration. However, these are only the necessary conditions. They can only be of value if the information is used appropriately. This requires a plan of how to use them.

The planning processes are sometimes seen as a subjective exercise depending on the intuition and insight of the people involved. And so, if customer integration works, it is taken as evidence of the high quality of management in the relevant departments. If it does not work, the solution is often to reassign people. This is not a good way to go about developing a well-functioning information management system. More systematic methods exist, particularly in services marketing that offer a way forward. They can be adapted without major problems to business-to-business marketing. Here, we emphasize the concept of "process mapping," which can be used as part of the customer integration process. This is described in the next section.

Basic Principles and Purposes of Process Mapping

A process map is a schematic representation of a process. For example, hotels or retail banks use spatial layouts to design and facilitate service performance and adjust the spaces according to the service in question. If a service is not directly connected to a place, then the process map represents the various steps required for the service to be provided and how they are connected. In business-to-business marketing, a process map would include all the processes needed for customer integration. Those who are directly responsible for customer integration can use it as a structuring aid and those responsible for resources can plan resource use more efficiently. A process map also helps communication by visualizing the overall

process of customer integration, and managers can use the maps for training and advising employees. Finally, they can be used to facilitate the development and implementation of a customer integration philosophy within the firm.

Process Mapping Methods

The use of internal firm process maps has been common for a long time (Shostack, 1981). Managers used such maps at the beginning of industrialization to analyze and improve the work processes involved. Project management also makes great use of process mapping tools to represent the processes and subprocesses involved. Several computer software tools also exist to help develop process maps but, as yet, there is no common language used; each system has its own advantages and disadvantages. Nevertheless, there are some general principles and rules for process mapping that have emerged (Kingman-Brundage, 1989):

- First, a distinction can be made between concept maps and detailed maps. Concept maps represent processes at a higher level of aggregation of the subprocesses involved. They are used for evaluating alternative means of customer integration and for planning how to carry them out. Detailed process maps, as the name suggests, focus on the specific activities that need to be undertaken to achieve customer integration.
- The overall process of customer integration is first subdivided into a set of interlinked subprocesses with arrows indicating which subprocesses are an input for another.
- Process maps display processes and subprocesses over time with time usually represented on the horizontal axis.
- A process map needs to anticipate the possibility of errors and allow for early detection and correction.

Processes can be described in two different ways (Shostack, 1987):

- Only individual steps or subprocesses of a higher-level process are shown and how they are connected. This means for instance that, at a stage where a decision has to be made the actual consequences are not shown.

Individual steps and their connections as well as the consequences of alternative decisions are shown. The difference is illustrated in Figs. 6.11 and 6.12.

Different forms of customer integration are developed to serve different strategic purposes. For example, if a supplier wants to integrate its customers into a large part of its own internal value creating activities, then the process map will contain a large number of subprocesses and become very complex. If the buyer has many options to choose from, the map gets very broad. Combining different levels of complexity and different degrees of breadth leads to a matrix of potential strategic positions for the firm in relation to its customers.

While the horizontal axis represents time in a process map, the vertical axis can reflect different degrees of a customer immersing into a supplier's value chain

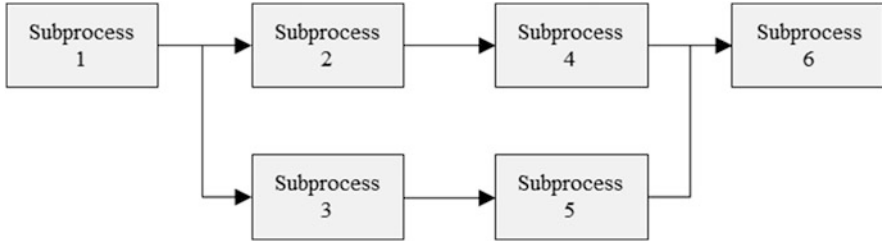


Fig. 6.11 A process map to show the complexity of a process

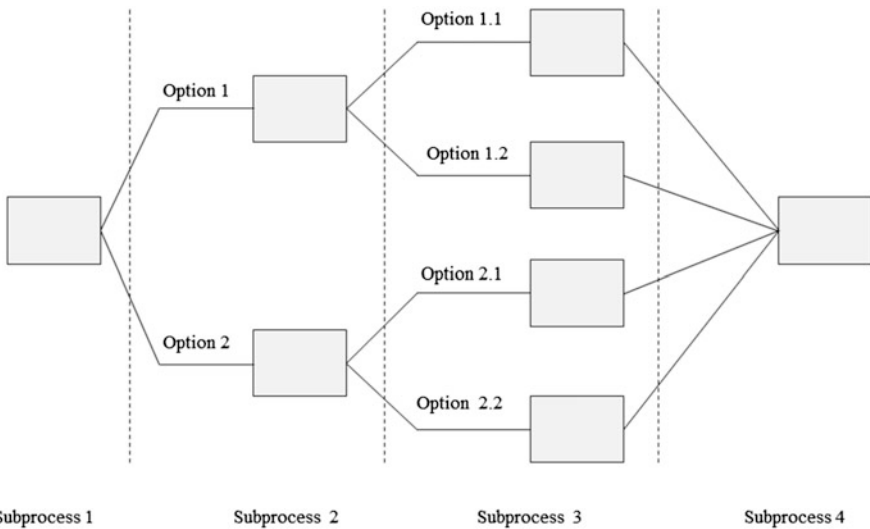


Fig. 6.12 A process map to show the breadth of a process

(Kingman-Brundage, 1989). Here, the process map separates the supplier sphere of activities and the buyer sphere and later concentrates on the supplier sphere. Some processes are visible to the customer and others not. Another distinction is between functional units of the supplier that are directly responsible for customer integration and others that are only indirectly connected with it. Finally, a distinction can be made between implementation processes and planning, guidance and control. In a process map, there are thus four types of lines (Fig. 6.13):

- Line of interaction (supplier/customer area)
- Line of visibility (for the customer)
- Line of internal interaction (of functional parts directly or indirectly affected)
- Line of implementation (planning, guidance, and control).

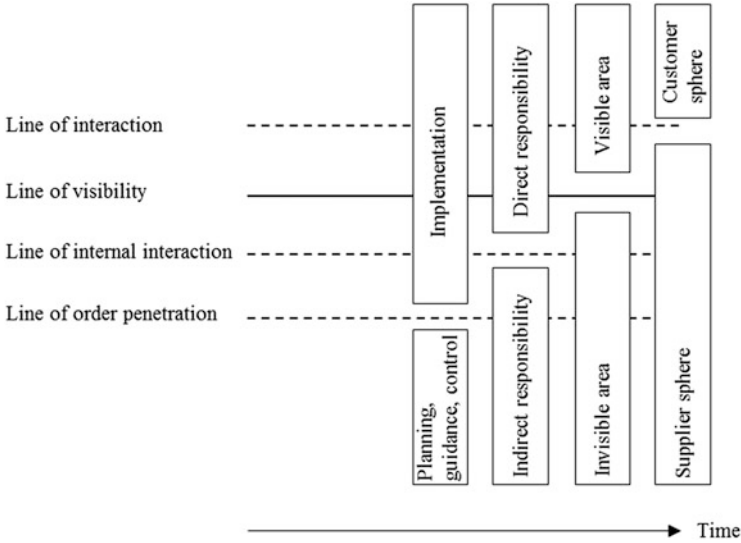


Fig. 6.13 Different levels of a process map

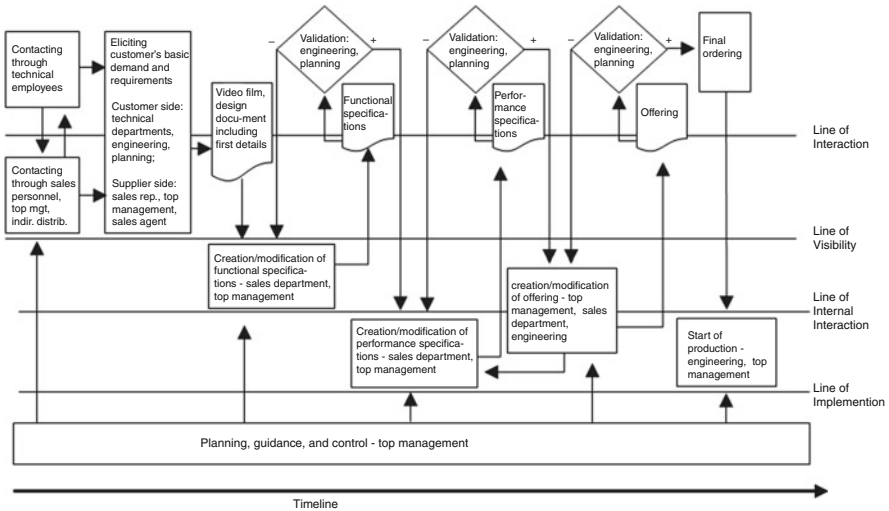


Fig. 6.14 Processes for customer integration of an automation plant manufacturer

An Example of Process Mapping

The basic process map of customer integration developed by a medium-sized machine producer is shown in Fig. 6.14. The processes are used by the supplier in order to supply a single instance of a “spray bridge” used in automated varnishing plants. Customers are either large producers of automated varnishing systems or

industrial users that create such systems by themselves for their own use. The process map structure corresponds to the basic principles of Fig. 6.14 and contains the four types of lines. It is a detailed process map, which serves as an organizational tool for all the firm's internal functions. It represents only the complexity, not the breadth or diversity of customer integration. Process maps exist that characterize the breadth in more detail and help in securing the information required by the supplier.

Project implementation starts off with first contacts between the buyer and supplier. Those involved on the customer side are commonly employees in charge of the current purchasing project. After establishing contacts, the first task is for the supplier to get an overview of the customer's purchasing problem. Information is collected through a site visit. The communication agent for the supplier in this case is someone from sales, a top management representative, or an independent sales rep. The information is saved using a video camera or planning and design documents provided by the customer. This information is then condensed and transformed into the performance specifications document. These specifications are generated by the sales department, and the accuracy of the summary information has to be confirmed by the customer.

Once the summary information has been confirmed, it is translated into a final set of functional specifications. This task is done by the construction department on supplier's side and has to be confirmed by the customer. If modifications are to be made, the process is repeated until final sign off is achieved by both parties. The generation of performance and functional specifications are not necessarily visible to the customer, and an additional internal interaction process occurs in the supplier organization for the creation of relevant internal functional specifications. After the confirmation of both specification documents, an official offer is generated. This is a task for the sales department and top management. The evaluation of the offer also involves the customer's purchasing department. If the customer is not satisfied with the offer, the supplier can alter the offer or modify some part of the specifications accordingly. If the customer decides in favor of the offer, then the production process can be started.

In this example, the process of gathering of performance-relevant information and its communication and analysis is not very complex. The fact that the basic process is determined and accessible for all those involved on the supplier side makes it possible for the decision makers—in this case top management—to control information gathering. Although firms do follow the procedure described without an explicit process map, the existence of such a map permits better planning and a more efficient diagnosis of problems arising. Hence, the process map can be seen as an efficient way of providing performance-relevant transaction information.

6.3.3.4 Holistic Approaches to Gathering Transaction-Specific Information: Simultaneous Engineering

We have so far described approaches to determine different parts of the transaction-specific information management process, i.e., the type of information needed, the sources of information, the design of interfaces and communication, and the design of information collection processes. These need to be integrated into an overall effective system of collecting transaction-specific information. This holistic approach is reflected in concepts such as Total Quality Management (TQM), Quality Function Deployment (QFD), and Simultaneous Engineering. In the following we focus on the concept of Simultaneous Engineering (Shenas & Derakhahan, 1994)

Simultaneous Engineering in its basic form was developed as an intercompany coordination method to help cooperation between industrial firms in general and their production equipment suppliers. Later, the idea was further developed and applied also to cooperation between OEMs and their product component suppliers. Simultaneous Engineering has gained attention in particular through its widespread use in the car industry. The concept and the resulting principles are today used in many kinds of industries at all stages of production. Simultaneous Engineering is primarily a method for industrial customers to facilitate the participation of their suppliers. However, it can also be seen as promising tool for a supplier to use to improve customer integration processes.

The basic principle of Simultaneous Engineering is to divide the successive stages of the development process into stages undertaken in parallel, i.e., simultaneously. Whilst the successive stages were distributed between the supplier and customer, Simultaneous Engineering creates a close intertwining which, in the end, is an integration of the supplier and customer. In a further development, Concurrent Engineering has been added to Simultaneous Engineering. This is a kind of product development process that takes into account, right from the start, the competing objectives regarding cost effects, quality, and functionality. Concurrent Engineering involves making trade-off among sub-objectives to achieve better overall performance outcomes. It is designed to generate outputs which may be suboptimal regarding their individual objectives, but yet create improved overall satisfaction regarding a bundle of objectives. If both processes are used it is called Simultaneous Concurrent Engineering.

The basic principle of Simultaneous and Concurrent Engineering remains that of undertaking production phases and intercompany organizational integration of suppliers and buyers in parallel. The main effect of Simultaneous Engineering on customer integration is a change in the timing of information exchanges, which requires changing the nature of the communication process. Problem definition and solution are worked out cooperatively and hence do not have to be communicated. A comparison between conventional methods and Simultaneous Engineering is shown in Fig. 6.15.

The supplier and buyer generate specifications and the technical design cooperatively. But not all phases of the product design process can be undertaken concurrently. Otherwise there would be a complete integration of the supplier and

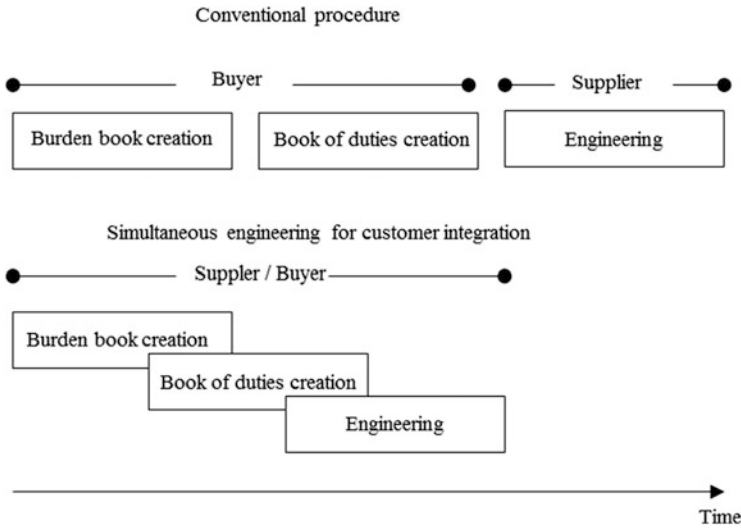


Fig. 6.15 Simultaneous engineering of customer integration

buyer which would mean in an effect a merging of the firms, which is not realistic. However, Simultaneous Engineering is widely used in business today and plays a significant part in the collection of transaction-specific information.

6.4 Transformation of Transaction-Specific Knowledge into Valuable-Information

Information up to now has been interpreted as decision-relevant knowledge, information relevant for developing customer advantages for the supplier or as part of the integrated value creation process. Once the transaction is completed, the information gained becomes part of the store of knowledge of the supplier and can be relevant for identifying customer advantages that can be offered to other customers or customer segments. The problem is that of converting transaction-specific information into more valuable information for evaluating market potential.

During a transaction a store of very specific knowledge is built up through the interactions taking place between customer and supplier. This means the supplier has a good understanding of the problems, desires, and objectives of a particular customer (so-called idiosyncratic knowledge) and knows in great detail the situation of this customer. The intensive cooperation with this customer has resulted in the supplier investing in an integrative value creation process. The greater the customer integration, the more specialized the investments. These transaction-specific investments improve the in-supplier's position compared to competitors. But the investments have to amortize, with the same customer over time or through

sales to other customers. Additional sales can come about in two different ways, depending on the degree of specificity of the transaction investments:

1. The transaction-specific investments lead to an improved competitive position with the focal customer, which enables the supplier to enter a long-term business relation with the customer.
2. The transaction-specific investments create an improved competitive position for the supplier with other customers who have similar problems.

In the first case the idiosyncratic customer knowledge gained enhances the competitive position of the supplier with the existing customer. In the second case customer knowledge gained can be used elsewhere to advantage.

The first case leads us away from considering a single transaction in isolation to that of developing a business relation, where the aim is to create a long-term relation with the customer as the focus of marketing activities. We migrate from project marketing to key account marketing (Plinke, 1992).

In the second case, the experience and knowledge gained from a specific transaction can be used to better meet other customer's requirements. Here the aim is not a long-term business relation with a single customer, but the creation of improved marketing offers for market segments. The issue here is to identify customers that can be a source of valuable learning. An important example is cooperation with lead users.

Lead Users and Learning

Cooperation with lead users makes knowledge acquisition the primary focus. Lead users are those customers that experience particular market requirements and problems earlier or more intensely than others (von Hippel, 1986, 1988, 2005). The supplier's advantages when cooperating with lead users are that lead users:

- Help improve productivity in the case of new product developments
- Have needs which foretell market needs in the future
- Expect a significant benefit from satisfying a certain need, which makes them more willing to provide useful information
- Are so interested in a problem solution that they often develop prototypes themselves
- Have already made innovations to satisfy their own needs

The listed advantages make clear that it makes sense for a supplier to undertake significant efforts to seek out and acquire lead user innovations or prototypes and to integrate them into the own product range.

Researchers have shown that many successful innovations in different industries originated with users or were developed in cooperation with lead users (e.g., Urban & von Hippel, 1988; Herstatt & von Hippel, 1992; Lüthje, 2003). Table 6.11 summarizes some of these studies.

Table 6.11 Selected studies about the cooperation with lead users

	Number and type of users sampled	Percentage developing and building product for own use	Source
1. Printed circuit CAD software	136 users firm attendees at PC-CAD conference	24.3	Urban and von Hippel (1988)
2. Pipe hanger hardware	Employees in 74 pipe hanger installation firms	36	Herstatt and von Hippel (1992)
3. Library information systems	Employees in 102 Australian libraries using computerized OPAC library information systems	26	Morrison, Roberts, and von Hippel (2000)
4. Surgical equipment	261 surgeons working in university clinics in Germany	22	Lüthje (2003)
5. Apache OS server software security features	131 technically sophisticated Apache users (webmasters)	19.1	Franke and von Hippel (2003)

Source: von Hippel (2005), p. 20

Given their potential contributions to innovation, it makes sense to try to identify and cooperate with them. Urban and von Hippel suggest four stages of lead user integration into market research (Urban & von Hippel, 1988; von Hippel, 1989):

- *Specification of lead user indicators*

Lead users provide early indicators of new needs with market potential months or years before the majority of customers. To help identify them you first need indicators of technological trends, and expert interviews are a sensible starting point. The leading edge nature of a customer is indicated by such things as discontent with current problem solutions and problem solution activities.

- *Identification of the lead user group*

Once indicators of “promising technology trends” and “high need expectation” are found, their importance and relevance for individual customers have to be confirmed through interviews. One approach is to use the lead user “pyramid of expertise” network, snowball sampling method developed by Lilien, Morrison, Searls, Sonnack, and von Hippel (2002) working with 3 M. This involves starting with relevant experts and identifying and learning from them and other lead users, who are at the forefront of technical trends, about the kinds of needs and problem solutions they are encountering and also about who else is working at the leading edge regarding such technologies. Follow-up interviews are conducted with other lead users identified in this “pyramid of expertise”

network, asking the same types of questions until the most extreme lead users possible are identified.

- *Development of product concepts in cooperation with lead users*

Working with one or more lead users, product concepts are developed which meet the requirements of the lead user(s). This can happen through a single transaction with the lead user or through workshops. Sometimes this cooperation can yield real products.

- *Testing developed product concepts with non-lead users*

Research indicates that innovators and imitators vary significantly in their behavior. Lead users are innovators, and the product concepts created for them have to be tested on non-lead users.

Lead user market research results not solely in a transformation of transaction-specific knowledge into information about broader market opportunities. It is a way of generating product innovations that are likely to succeed more generally. But lead user market research is not without its problems. It requires intense interaction between the supplier and lead users, which cannot be handled by the market research or the marketing department alone. Ways have to be found to link the product development department with the lead users. One way to do this is to develop cooperative links with user groups or online communities so-called “communities of innovation,” which enable the producer to gain access to the experience of those participating in these user groups (Füller, Bartl, Ernst, & Mühlbacher, 2006; Füller, Jawecki, & Mühlbacher, 2007). Another problem is that product concepts developed with different lead users can vary, which leads to the question of which concept is the right one. But different product concepts could also provide hints about different future market segments. In this context, methods like virtual stock markets or ideas competition, where innovations are evaluated directly by the end users, are used (Franke, von Hippel, & Schreier, 2005; Skiera & Spann, 2004; Spann, Ernst, Skiera, & Soll, 2009).

6.5 Information Processing and Information Distribution

6.5.1 Information Processing

So far we have been concerned with the ways to collect information. Once collected the information has to be processed internally within the producer or supplier firm, i.e. analyzed and interpreted, and communicated in an appropriate decision relevant way to those who need it to make decisions. The methods used for information processing depend on the management problem and the type of data collected. Different analytical methods may be used:

- *Descriptive research*

The primary objectives of descriptive research are to summarize patterns of results such as how often a product is purchased, how many of those interviewed

gave a particular response to a question, or what are the characteristics of those with particular needs or problems.

- *Explorative research*

The research objective here is to search for patterns and insights about the type of information to collect that is relevant to the management problem and to develop some preliminary hypotheses about the relevant market that will guide later research.

- *Experimental research*

Primary research purpose here is to test the causal impact of certain factors, such as the effect of alternative elements of marketing offers on market responses. This is done by manipulating the exposure of different sub samples to different conditions such as different advertisements, prices, and product designs in order to compare the responses. Such experiments can be conducted in artificial laboratory conditions, as part of surveys or in the actual market place. Test market, in which market offers are tried out in particular markets, is a form of experiment but with far less systematic control of the different factors affecting the results that would be required in a formal experiment.

The different types of research and the relevant management problem call for different types of data processing and analysis, some of which are described in Table 6.12. In general, we may distinguish the following type of analysis:

- Data description
- Data exploration
- Testing of research hypotheses

Data description involves summarizing the broad patterns of results of research, including the frequency of response and average responses for different respondents in a survey, broken down by various relevant factors, such as type of firm or region. Univariate analyses involve examining the pattern of results for individual

Table 6.12 Classification of data analysis methods by type of research

Type of analysis	Examples
Summary and description	Average value Variance Frequencies
Data exploration	Factor analysis Cluster analysis Multidimensional scaling (MDS)
Hypothesis testing	Regression analysis Variance analysis Discriminant analysis Conjoint analysis Contingency analysis Cause analysis

questions and measures. The analysis of relations among different variables measured is called bivariate or multivariate analysis.

The purpose of the exploratory research is to analyze results to reveal patterns and gain insights relevant to the management problem, not simply mindless “nice to know” analyses. This may also call for data description and summaries. More sophisticated methods of exploratory analysis include the use of cluster analysis to identify market segments of firms with similar requirements and exploratory factor analysis to summarize answers and to detect underlying patterns of responses in say attitudes to a market offering.

If the researcher has some preestablished hypotheses about the association between different variables, these can be tested using various types of correlational and multivariate methods of analysis. For example, confirmatory data analysis methods can be used to confirm or disconfirm ideas about patterns of response. Or, if a link between advertising expenditure and sales is to be tested, methods such as regression analysis can be used in which a statistical model is used to see how far the variation in dependent variables, say sales, is associated with variation in independent or explanatory variables, such as types or amount of advertising. The actual methods used depend on the types of measures available, various types of statistical assumptions, and the model to be tested. These topics are beyond the scope of this chapter; these are found in many textbooks on market research and data analysis. Instead, in Table 6.13 we give some examples of the kinds of management problems different types of method could be used for.

Data resulting from a survey is analyzed differently to transaction-specific data.

6.5.2 Information Distribution

The last stage is the communication of the research results to management in a form they can understand and use. This involves getting the right information to the right people in a timely and appropriate manner.

This task does not depend on whether the information in question is transaction specific or results from a more general survey. The only difference is that survey type data requires more processing and analysis to make it understandable and useable.

The methods of communicating research results can be differentiated according to whether they are based on modern computer information technologies or personal communications.

6.5.2.1 Information Technology Concepts for Information Distribution

As in most areas of the modern business world, IT-based solutions dominate the way we collect, store, organize, and handle much data and information. When designing such systems, two perspectives have to be distinguished: the data perspective and the functional perspective.

Data models refer to the static structure of data and the logical relations among the data. It is the purpose of data modeling to describe a conceptual model of data.

Table 6.13 Typical subjects of selected data analysis methods

Method	Basic question
Regression analysis	How do sales numbers change if advertising spending is reduced by 10 %? How can the price for cotton be estimated for the next 6 months? Does the amount of investment in the car, shipbuilding, or construction industry affect the demand for steel?
Variance analysis	Does the nature of the chosen advertising influence sales volume? Does the color of an advertisement influence the number of people remembering the ad? Is the sales volume affected by the chosen distribution channel?
Discriminant analysis	How different are certain market segments? How can we best distinguish between successful and not successful sales people? Is it possible to distinguish between customer groups according to the measures of their “number of employees,” “turnover,” “advertising spending” etc.?
Contingency analysis	Are certain observed results coincidental or can they be generalized? Is a connection observable between the industry and the chosen print media?
Factor analysis	Can the various purchase criteria measured be reduced to few general factors (purchase dimensions)? How can these dimensions be described?
Cluster analysis	How can the buyers be subdivided into market segments? Can the types of readers reading particular journals be distinguished? How can the voters be classified according to their degree of political interest?
Multidimensional scaling	How close is our product to the customer’s ideal? Which is a firm’s image? Have customers’ attitudes towards our product changed during the last 2 years?
Conjoint analysis	Which components’ of a market offer contribute most to the perceived overall benefit? Does the customer perceive more benefit coming from an in-house customer service department or from an external service?

Functional models, on the other hand, show how the data are to be processed further, and how they are analyzed and distributed. Data and functional modeling complement each other. Tools exist for both tasks, such as entity-relationship models for data modeling and the structured analysis and design technique (SADT) for functional modeling (Scheer, 2000).

The efficiency of a Marketing Information System (MIS) is determined largely by two parameters: the speed with which data, knowledge, or information gets to the receiver and the speed of data updating. A criticism of a MIS is that they tend to automate only existing routines, which means other, less routine, types of information have to be sought by the user, rather than being provided automatically in a useful manner. In addition, existing routines are seldom assessed in terms of how they contribute to the achievement of competitive advantages. Business

reengineering are ways of designing information systems to overcome such weaknesses.

Business reengineering is as a way of designing an organization based on business processes (Hammer & Champy, 2004), that are in turn derived from meeting customer needs. A business process organization requires an all-encompassing information system, to distribute data, information, and knowledge. One way to plan such information systems is by using flowchart models of the business referred to as event driven process chains (EPCs) (Kindler, 2006). EPC charts use a kind of a meta-language by which business processes can be represented and modeled, including the following basic units:

- Events
- Functions
- Organizational units
- Information objects (data, knowledge, information)

A sample flowchart for handling customer inquiries is shown in Fig. 6.16. The initial event is an incoming inquiry that starts a predetermined inquiry evaluation function, which is done by the in-house distribution department. Customer and product or service data are needed to evaluate the inquiry. The output is a validation report. The inquiry validation function triggers another event, depending on the result: either the preparation of an offer submission, a request for additional information, or a decision not proceeding further with the inquiry.

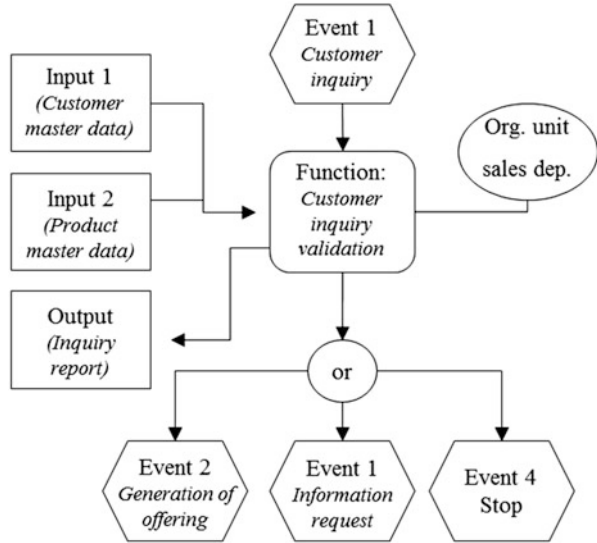
If IT systems are modeled in this way, the distribution of data, knowledge, or information can be linked to the achievement of competitive advantages. They proactively supply relevant information to management without them having to seek it; in other words, it provides active decision support.

6.5.2.2 Business Organization Concepts for Information Distribution

Information flows within an organization according to the way the organization is structured, not only through the IT systems.

For example, the main task of TQM is to understand the expectations of one or more customers and to translate this into a market offer that meets these expectations. When carrying out these tasks, different risks exist and TQM is supposed to help avoid them. A systematic analysis of the entire quality development process is carried out and a quality development process is developed and written down in quality handbooks. These handbooks are made available to all involved. The first and perhaps most important step of any new TQM project consist in the gathering and analysis of information about the customers' expectations. Once a TQM system exists, the foundations for systematic information generation are laid out and the way relevant information will be distributed. Through its information-related components, TQM systems therefore are able to contribute actively to the achievement of competitive advantages and market success.

Fig. 6.16 An EPC flowchart for managing customer inquiries (Source: Keller, 1995)



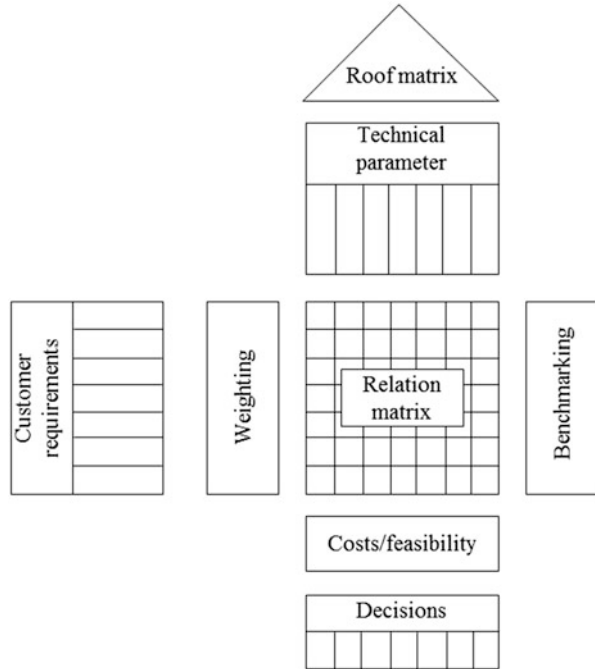
Another example is quality function deployment (QFD) which is used for product planning and development (see Chan & Wu, 2002 for an overview). It is a development of simultaneous engineering, but also has aspects of TQM. QFD is similar to simultaneous engineering in that it seeks to make stages that were once performed sequentially performed concurrently. But it involves also TQM’s customer orientation (Griffin & Hauser, 1993; Mohr-Jackson, 1996). A useful conceptual framework to use here is the “house of quality,” which is shown in Fig. 6.16.

The starting points of the house of quality are customer attributes, which show how a product or service meets customer expectations and requirements. These are then translated into production attributes that can be designed and controlled by the supplier. Both general market surveys as well as transaction specific information may play a role here. The aim here is to identify the contribution each technical design feature of a product or service makes to perceived customer attributes and hence to overall perceived quality. The matrix at the top of the chart indicates the extent to which the technical design features are interdependent or not.

The matrix linking customer requirements and attributes with product attributes shows the influence of each product attribute on each requirement. The degree of customer satisfaction resulting from a particular product design is benchmarked against competitors, and this is varied in order to design a superior offer in terms of overall quality and one that is technically and economically feasible (Fig. 6.17).

The house of quality can be used as a vehicle for designing information distribution, as all departments involved in product development have to participate in its development, and the links between them are identified. The house of quality can be thought of as a “round table of performance design.” The main difference between the communication function of TQM and QFD can be described as follows: In the case of TQM, interunit interfaces are specified in detail, which can hinder

Fig. 6.17 The house of quality (based on: Hauser & Clausing, 1988)



information distribution. With QFD, on the other hand, interunit interfaces are avoided right from the start through the central function of the house of quality.

Exercises

1. How do the terms data, knowledge, and information differ?
2. Which major categories of information with relevance for business market research exist?
3. What is the difference between primary and secondary market information?
4. Describe different types of databases?
5. What is meant by random sampling?
6. What are CATI, CAPI, CAWI, and CASI standing for? Explain the concepts briefly.
7. Which conditions require nonmetric and which metric scales for collecting answers from respondents?
8. Explain the concepts of reliability and validity?
9. Explain a framework to describe tasks and approaches for gathering episode information?
10. What are performance specifications and what are functional specifications?
11. Explain the role of Porter's value chain model for identifying sources of episode information?

12. What is a process map and how can it help in gathering episode information?
13. What is the role of lead users in transforming transaction specific knowledge into potential information?
14. What is the difference between descriptive and confirmatory data analysis?

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Index

A

Adam Smith, 134, 299
Andler formula, 246
Arbitrage, 51

B

Balanced Scorecard (BSC), 261–262
Bargaining, 210, 211
Barriers
 limitation, 69
 market entry, 69
 mobility, 69
B2B. *See* Business-to-business (B2B)
Behavioral theory of the firm, 15
Business buying behavior, 172
Business-to-business (B2B)
 markets, 129
 sellers, 138
Buyer, 174
 advantage, 67
Buyer–seller dyad, 187
BUYGRID model, 191, 195
Buying center, 182, 184
 membership of, 175
 roles in, 184
Buying responsibility, 175

C

Capital good, 150
Classical economic theory, 15
Communication network, 198, 215
 diagramming the, 199
 positions in, 200
Competencies of a firm, 56
Competition, 53
Competitive advantage(s), 48, 64, 65, 68, 85,
 165, 265, 320

 elements of, 54
 sources of, 55
Competitive arena, 99, 100
Competitive disadvantages, 299
Competitor orientation, 84
Conflict(s), 205
 resolution, 206
Core competencies, 145, 227, 265
Cost advantage, 59, 64
Costs of coordination, 135, 145
Customer advantages, 276, 277, 280, 300, 313
Customer integration, 141, 142, 300, 307, 313
 line of implementation, 309
 line of interaction, 309
 line of internal interaction, 309
 line of visibility, 309
 process map, 307, 310
Customer involvement, 159
Customer orientation, 82
 examples of, 86
 of the firm, 95
 obstacles of, 111
 of people, 92
Customer satisfaction, 84, 105, 143
 dimensions of, 87
 management of, 105
 measurement of, 107
Customer-specific information, 278
Customization, 134, 135, 143

D

Data, 276
 analysis
 descriptive research, 316
 experimental research, 317
 explorative research, 317
 collection, 290
 methods of data collection, 290

- Decision-making process, 171
 Decision rules, 196
 Derived demand, 130
 Direct customers, 147
 Division of labor, 108
 Dyadic approach(es), 196, 215
- E**
 E-commerce, 265
 Effectiveness, 66, 90
 advantage, 66
 Efficiency, 66, 90
 advantage, 66
 Efficient Consumer Response, 267
 E-markets, 267
 Entrepreneur, 45
 E-procurement, 265
 Exchange, 1, 4, 9
 agreement, 36
 complex, 26
 dyadic, 9
 dynamics, 29
 extend, 24
 partners, 36
 ratio, 31, 62
 simple, 10
 triadic, 28
- G**
 Goods, 1
 transfer of, 5
 Gross domestic product (GDP), 138
- H**
 Homo oeconomicus, 13
- I**
 Idiosyncratic knowledge, 313
 Incomplete information, 17
 Industrial buyer behavior model, 193
 Industrial buying behavior
 determinants of, 216
 model, 195
 phases in, 191
 Information, 179, 276
 asymmetries, 38, 275
 distribution, 318
 incomplete, 43
 processing, 181, 316
 sources, 179, 282
 types of information sources, 181
 Interface, 108
 horizontal, 108
 management, 109, 111
 vertical, 108
- J**
 Joint venture(s), 238, 244
- K**
 Knowledge, 276
- L**
 Lead users, 314
 Life cycle, 61
 Locate-to-order, 134
- M**
 Make-or-buy, 4
 decisions, 142
 Make-to-order, 134
 Marketing Information System, 319
 Marketing mix, 102, 166
 Marketing objectives, 99
 Marketing process, phases of, 99
 Marketing programs, 120
 key account marketing, 121
 project marketing, 121
 relationship marketing, 121
 transaction marketing, 121
 Marketing triangle, 279
 Market orientation, 82, 83, 299
 cause and effect chain of, 115, 116
 examples of, 86
 of the firm, 95
 obstacles of, 111
 of people, 92
 Market participants, 44
 Market potential, 278
 Market process, 43, 44
 theory of, 46
 Market segments, 277
 Market triangle, 166
 Mass customization, 134
 Match-to-order, 134
 Mechanism of competition, 43
 Multi-stage marketing, 147
 Multi-stage sales strategy, 147

N

Negotiations, 210, 213

Net benefit

advantage, 60

difference, 64

Network competence, 258

O

Opportunism, 16

Organizational buying behavior

integrated model of, 196

model, 192, 195

Outsourcing, 145

P

Perceived risk, 162

Plant

business, 151

project marketing, 151

Porter's value chain, 303

Power, 206

instruments of, 207

sources of, 207

sources of power in industrial buying
decision, 210

Primary research, 280, 282, 285

Problem, 12

description, 301

solution, 301

structure of, 11

Procurement, 228

evaluative criteria, 259

management, 228

market research, 258

objectives, 230

organization of procurement, 254

process, 230

Procurement planning, 245

cost-oriented approaches, 248

demand and quantity approaches, 245

supplier oriented approach, 250

Product

orientation, 81

service bundles, 158

Production

costs, 135

goods, 148

orientation, 80

Production-and procurement planning systems,
269

enterprise resource planning, 270

extended resource planning, 270

material requirement planning, 270

production planning and control, 270

Product/service typology, 159

Project planning, 151

Purchasing

card systems, 266

department, 176

manager, 176

Q

Quality audit, 264

R

Rationality, 14

Resources, 1

Risk, 218

continuum of, 218

level of, 218

Role stress, 196

S

Sales orientation, 81

Sampling, 286

sampling error, 286

systematic error, 286

Sampling methods

non-probability sampling methods, 288

probability sampling, 287

Secondary research, 280, 282

Seller advantage, 67

Service offerings, 138

Services, 1, 138, 156

Simultaneous Concurrent Engineering, 312

Simultaneous Engineering, 312

Sourcing strategy, 232

collective sourcing, 243

component sourcing, 236

demand tailored sourcing, 241

domestic sourcing, 237

dual sourcing, 233

global sourcing, 237

individual sourcing, 243

internal sourcing, 240

just-in-time sourcing, 241

local sourcing, 237

modular sourcing, 234

multiple sourcing, 232

parts sourcing, 236

single sourcing, 232

- Sourcing strategy (*cont.*)
 - stock sourcing, 241
 - system sourcing, 234
 - Specialization, 145
 - Standard industrial classification (SIC) system, 149
 - Standardization, 143
 - Stimulus-response approach, 187, 189
 - Strategic options for suppliers
 - coordinator, 146
 - integrator, 146
 - specialist, 146
 - Supplier advantage, 276, 277
 - Supply chain management, 228
 - Supply management, 227, 228
 - Survey design, 293
 - questionnaire design, 295
 - Sustainability, 63
 - System technologies, 154
- T**
- Total Quality Management, 262, 312, 320
 - house of quality, 321
 - Transaction, 31, 39
 - costs, 8
 - market transaction, 40
 - Transaction-specific information, 278, 300, 305
 - communication interface design, 305
- Types of purchase situations, 179**
- modified rebuy, 179, 190
 - new task, 179, 190
 - rebuy, 179
 - straight rebuy, 190
- Types of qualities, 161**
- in business-business purchases, 164
 - credence qualities, 163
 - experience qualities, 163
 - search qualities, 162
- U**
- Uncertainty, 15, 178, 275
 - managing, 15, 18
 - sources of, 16
- V**
- Value, 6**
- components of value in an exchange, 8
 - creation, 6, 57
 - types, 8
- Value chain(s), 57, 141**
- interconnection of value chains, 130
 - Porter's value chain, 228
 - stages of value chain, 145
 - systems, 138
- Value creation, 136, 138, 145, 301, 313**
- processes, 142, 144