

Chapter 16

Strategic Framework

16.1 Porter's Model of Industry Structure Analysis

What distinguishes an industry, and what must be taken into consideration when analyzing an industry? The work of Michael E. Porter (2004), who developed the model of the “Five Forces” at play in an industry, was groundbreaking in this regard. Before getting into this subject in more detail, we still need to explain what an industry is in the first place. Porter (2004, 5) explains an industry as

the group of firms producing products that are close substitutes for each other.

To differentiate industries, he thus takes as his basis substitute competition. If we are to look at different industries, however, such as the pharmaceutical industry, the travel industry or even the information industry, we will soon recognize that a multitude of different products are on offer within an industry—and hence, within sub-industries or markets (Grant & Nippa, 2006, 125 et seq.). In the information industry, this might be online games or business news, which represent totally different markets and cannot be deemed to form a substitute relation. Now, the concept of the relevant market also normally uses the substitute relation as a criterion for differentiation (Backhaus, 2007, 127 et seq., Hungenberg, 2006, 98 et seq.); hence, it appears pertinent for our analytical purposes to relate the Five Forces model developed by Porter, as well as the Value Net model by Nalebuff and Brandenburger (1996)—to be introduced in the following—not only to an industry as a whole, but also to the (sub-)markets that might exist in an industry.

The basis of Porter's model is the industrial organisation approach (Tirole, 1999), which assumes that the attractiveness of a market from a company's perspective is mainly dependent on the market structure. In order to cover the industry systematically, Porter recommends considering five essential forces which, when added together, make up the industry's attractiveness. Individually, they are the competition between the companies within the industry, the suppliers' as well as the consumers' market power and the threat posed by substitute products and potential competitors (Porter, 2004, 4).

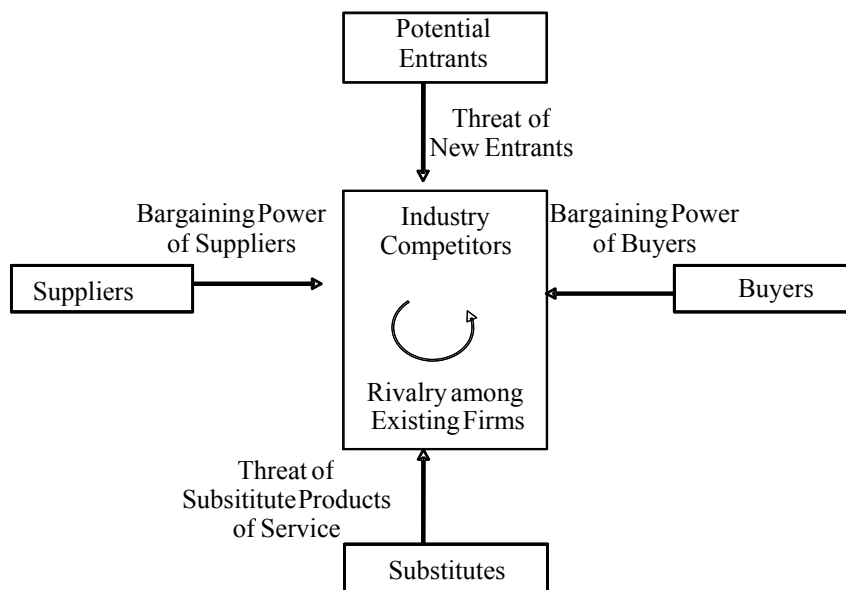


Figure 16.1: The Five Forces Driving Industry Competition According to Porter. Source: Porter, 1999, 34.

Even though an empirical proof of Porter's approach was only partially conclusive (Welge & Al-Laham, 2003, 204 et seq.), it wielded enormous influence on the scientific debate on enterprise strategy. One clear disadvantage of the model, however, is the implication that companies within an industry are automatically in competition with the other companies in the market, and that they can only gain an advantage in this way. Porter's basis is a classical understanding of the value-added chain, in which a company buys component parts from suppliers, assembles them and sells them on to its customers. The other players in the market, which produce the same or a similar amount of added value, are viewed as a threat to one's own profitability. The way markets actually work, however, shows that companies can also seek to gain an advantage via select cooperation with customers, suppliers or competitors (Hungenberg, 2006, 109 et seq.). This is where Nalebuff's and Brandenburger's Co-Opetition model starts off.

16.2 Nalebuff's and Brandenburger's Value Net

Nalebuff and Brandenburger (1996) want to emphasize that there are not only competitive but also cooperative relationships in the market, which are of equally great importance to achieving success in business. This combination of competition and cooperation—i.e., co-opetition—creates, in contrast to Porter's model, a slightly different model of market analysis. Nalebuff and Brandenburger speak not only of forces that threaten profitability, but also of a "Value Net", in which different agents can also create values together.

If we go back to Chapter 3's considerations of indirect network effects, we can use them in the Value Net—as opposed to Porter's model. An example for this are complementary goods such as hardware and software. More powerful hardware encourages customers to use more computer-intensive programs. More complex programs, in turn, require more powerful hardware. Windows XP simply runs better with an Intel Centrino processor than it does on a Pentium-run computer. The constellations do not have to be bilateral, though—they can have many sides. Let us consider the example of ProShare by Intel (Nalebuff & Brandenburger, 1996, 15). Intel's management was dissatisfied with the speed of the development of products using the processors to capacity. In order to encourage its customers to keep updating their equipment, Intel pushed forward one of the most CPU-intensive applications, namely video transmissions, and invested, in the mid-nineties, in a system for video conferences by the name ProShare (Intel, 2007a). Similarly to the situation for fax machines, which we considered above (Chapter 3), Intel was confronted with a significant problem in the starting phase: what is the use of a video conference system if there aren't enough people to hold a conference? It had to be Intel's mission to build up a market presence and to lower the cost of units. To do so, Intel tried to find other companies with similar interests. This turned out to be, on the one hand, telephone companies, who wanted to sell higher cable capacities. ProShare was a good way of promoting ISDN or, as today, DSL connections. Faster connections sold better if customers wanted to use certain applications. Thus some telephone companies subsidized ProShare in order to sell their packages (Nalebuff & Brandenburger, 1996, 16). As a further cooperation partner, Intel identified the computer manufacturer Compaq, who preinstalled ProShare in all of its computers destined for business purposes. Offering video conferences allowed Compaq a distinguishing feature vis-à-vis their competition. At the same time, ProShare's market presence was increased and the acquisition cost of the software for the end customers lowered significantly. All of the players mentioned had recognized their complementary relationships. Intel wanted to increase demand for higher CPU capacity, the telephone companies wanted to sell higher data transmission capacities and Compaq was looking for an advantage over its competitors. All three interests could be bundled in ProShare's package.

Intel's ProShare went on to become the market leader for PC-supported video conference systems. Further cooperations, as with Deutsche Telekom AG, BMW AG and Erasmus University in Rotterdam, as well as a development partnership

with the video conference provider PictureTel, were to follow (Intel, 2007b; WP, 1999).

The recent acquisition of the game developer Havok by Intel had the same motivation (Iwersen, 2007). Havok is a software developer world-famous for its programming of so-called physics engines, which produce physically accurate, photographic images of reality and are considered the best the gaming industry has to offer. Their great advantage from Intel's perspective: they require huge amounts of CPU capacity.

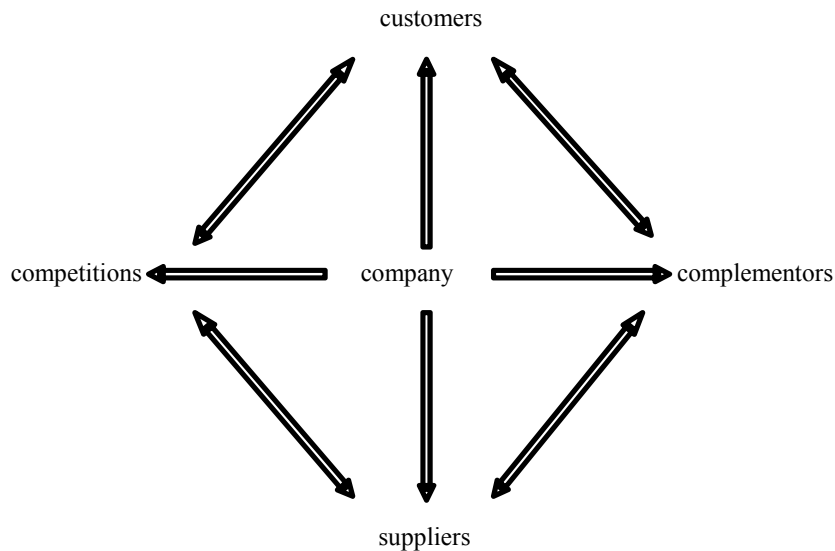


Figure 16.2: The Value Net's Basic Pattern According to Nalebuff and Brandenburger. Source: Nalebuff & Brandenburger, 1996, 30.

16.3 The Value Net's Elements

How can such complementary relationships be displayed in the Value Net? Like Porter, Nalebuff and Brandenburger (1996, 16) initially orient themselves, in the vertical direction, on the flow of goods from the suppliers through the observed company and on to the end consumer. Resources, such as materials or manpower, flow to the company from the suppliers' side, and products and services flow on to the customers from there. Money flows in the opposite direction. The suppliers are

paid for their services by the companies; for the customers, one must define by case. Traditionally, they pay for the license to use a company's choice of products. Particularly in the information market, though, there are often constellations where it is not the customers but third parties who pay and thus finance or at least subsidize the product. This is the case for ad-financed free TV: the channels finance their product from advertising revenue, and the customer pays not with money, but with attention.

In the horizontal direction, not only competitors are regarded, as in Porter, but also complementors. These are companies who through their offer add value to the offer of the company observed. Complementors—as opposed to suppliers—mostly perform their services at their own expense.

For the question of who a company's competitors are, Nalebuff and Brandenburger additionally try to overcome Porter's rigid industry differentiation. They allow all active players in the market to qualify as possible competitors. They say:

The more [...] one strives to solve customers' problems, the more the industry perspective loses meaning. As people think more in terms of solving their customers' problems, the industry perspective is becoming increasingly irrelevant.

The customers are interested in the end result, not in what industry the company that gives them what they want belongs to.

An example: if one considers two airlines, such as Lufthansa and British Airways, the enhanced perspective makes it clear that they compete not only within the industry, but also with industry outsiders, for instance, like Intel, which offers a substitute for air travel in the form of video conferences.

In order to account for both of these aspects, Nalebuff and Brandenburger explicitly draw on Game Theory. Game Theory (Neumann, 2007 [1944]) assumes that there is a structural similarity between parlor games and markets. The players try to maximize their own profit, but are dependent on the other players. They know this, and accommodate these interdependencies in their decision-making. Game Theory is used in strategic management to analyze the effects of one's own actions and/or those of one's competitors.

In this context, both competitors and complementors are regarded from two perspectives, the customers' and the suppliers'.

For the "player" competitor, it holds, from the customers' point of view on the one hand, and the suppliers' on the other (Nalebuff & Brandenburger, 1996, 18, 20):

A player is your competitor if customers value your product *less* when they have the other player's product than when they have your product alone.

A player is your competitor if it is *less* attractive for a supplier to provide resources to you when it's also supplying the other player than it's supplying you alone.

With complementors, the case is analogous. Nalebuff and Brandenburger (1996, 18 et seq.) define, again from two points of view:

A player is your complementor if customers value your product *more* when they have the other payer's product than when they have your product alone.

A player is your complementor if it is *more* attractive for a supplier to provide resources to you when it's also supplying the other player than it's supplying you alone.

Competition for customers and suppliers, this must be stressed again and again, often takes place beyond industry borders. Companies compete for financial resources, materials or manpower, by now often on a global scale.

The relationships between companies on the market can have many different faces. They can be competitive, as the one between Coca-Cola and Pepsi, or complementary with highly aligned interests, such as the one between Microsoft and Intel, who both profit reciprocally from the other's product innovations. Often, however, companies assume several roles at once, thus being competitor and complementor at the same time (Nalebuff & Brandenburger, 1996, 20). Airlines, for instance, compete for limited landing rights and airport space. At the same time, they are jointly interested in key aircraft suppliers making them attractive offers for next-generation airplanes. For Boeing or Airbus, it would be much cheaper to develop a plane for both airlines than to produce different versions. The principals could cooperatively contribute to the development costs, thus lowering the cost of units far more quickly, which would of course be of benefit to them.

Let us regard another value net, that of an institution of higher education (Nalebuff & Brandenburger, 1996, 23 et seq.). The **customers** of a university are its students. As they often do not pay for their own education, though, financiers enter the scene as further customers: parents, providers of scholarships, creditors. They all expect their investments to be profitable, i.e. that the graduates later get a job with adequate pay providing financial independence and enabling them to repay their debts. Donators are another customer group: they expect their donation to be rewarded in the form of influence or prestige. The awarding of a research assignment can also create a customer relationship.

The **suppliers** of a university are its employees, the academic staff, the administration etc. Furthermore, information suppliers such as publishers and database providers belong on this list.

The **competitors** of a university are, on the side of demand, other private or public purveyors of education competing for students, funds or research assignments. On the supply side, there is competition between the different schools, and also private enterprises, for personnel.

The **complementors** of a university are manifold. All institutes of education providing preparatory training belong on this list. The better this training, the more students will profit from higher education. Other complements are technical facili-

ties (computers, internet etc.), boarding and infrastructure. All environmental aspects influencing the university are to be deemed complementary, in short.

16.4 Value Nets for Information Goods

The Value Net is a good basic framework for capturing the players in a market and their competitive and complementary relationships. Now, the focus of our investigations is on information goods. As we learned in Chapter 3, information goods display four particular characteristics. Specifically, these are the character of public goods, the domination of fixed costs, information asymmetries as well as (direct and indirect) network effects.

These characteristics can be viewed as mechanisms effective on information markets. As we saw in Chapter 3, they contain the potential for market failure. In a value net for information markets, these mechanisms are to be given explicit consideration.

The network effects in particular play a prominent role for information goods. Here it is not only important whether the information good has a broad installed base today, but also whether the customers expect it to be widely used in the future. The **expectations** of market participants are the central factor (Katz & Shapiro, 1985, 425). In order to influence these, companies can send signals. These can be product previews, for example, meant to signal to the customer that it is worth their while to postpone their purchase, as a better offer will be available in the near future. For the value net, this means that not only customers must be given explicit consideration, but also their expectations.

In order for information markets to function—and the fact that they do is easily verifiable—special institutional regulations have developed over time, such as copyright, for example. Additionally, trading with digital information goods is based on a multitude of technological developments that make their exchange possible in the first place (Fritz, 2004, 86 et seq.). Information needs a data carrier to be stored (CD, DVD, hard drive), must be formatted in a certain way before they can be transmitted (MP3, MP4, HTML) and require a transmission path, which these days is mainly the internet with the appropriate protocol TCP/IP. For information to be protected, other technologies are required, such as CSS (Content Scrambling System) or digital watermarks. Institutions and technologies both influence players' courses of action in the value net, but they cannot be directly influenced by them. Laws and regulations take shape in political processes, which are often very drawn out. The situation for technologies is similar, if they exist as (public or de facto) standards. New technologies can of course be invented at any time, but on the one hand, a single invention does not change the entire technological environment, and on the other hand, an open process decides whether it will in fact assert itself on the market. In each value net, but for information markets in particular, institutions and technologies must thus be considered as environmental factors.

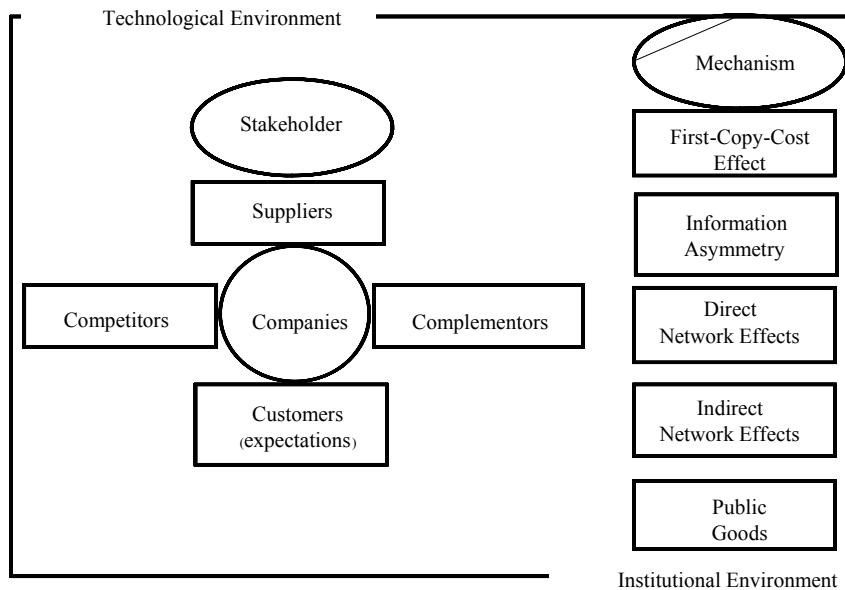


Figure 16.3: Enhanced Value Net for the Analysis of Information Markets.

16.5 Business and Business Field Strategies

Having established a value net, we must ask ourselves what the agents' scope of influence over the information markets is. How and where can they begin building up their business field, respectively their value net?

In each case, we are dealing with typical strategy questions. What is meant by strategy? From among the many possible definitions, we have taken the one by Bruce Henderson (1989, 3), the founder of Boston Consulting Group:

Strategy is a deliberate search for a plan of action that will develop a business's competitive advantage and compound it.

A discussion of strategy is normally held on several levels (e.g. Grant & Nippa, 2006; Hungenberg, 2006). On the top level, strategies for the entire company are being developed. Such (overall) business strategies deal with the company's field

of operation: what should be offered on which markets in which industries? Subordinate are the so-called business field strategies, which involve the company's course of action on single markets within the competition. Our further deliberations will focus exclusively on business field, or also competitive, strategies.

	Companies	Business Field
Environment Analysis	Analysis of the macro-environments , e.g. •Legal-political •Technological •Economical	Industry and Market Analyses , e.g. •Five Forces (Porter) •"The New Forces" (Downes/Mui) •Value Net (Nalebuff/Brandenburger)
Business Analysis	Financial Analyses, e.g. •Business value •Value drivers Portfolio Analyses, e.g. •Market growth / market share •Market appeal / Business field strength Competences across business fields	Financial analyses, e.g. •Revenue and cost structure •Result situation •ROI Business-field-specific competences

Figure 16.4: Objects and Methods of Strategic Analysis.

Each kind of strategy does not merely exist pre-made, but must be developed in-house. To do so, one generally delineates different phases in the process of strategic management (Remer, 2004, 25 et seq.) There is, both on the company and the business field level, an initial analysis phase, before strategy alternatives are developed, evaluated and selected.

Always featured in a strategic analysis are (e.g. Hungenberg, 2006; Welge & Al-Laham, 2003) the view to the company's and the business field's respective environment on the one hand and their interior on the other. Both levels and both perspectives are displayed in Figure 16.4.

This overview makes it pretty clear where the focus will be placed. Our unit of analysis is initially the individual business field, and particularly its environment analysis.

16.6 Competitive Advantages

In every strategy text book (e.g. Grant & Nippa, 2006; Hungenberg, 2006), strategic considerations on the business field level lead to the question: what is the basis on which companies achieve their competitive advantages? Here, too, the doyen of strategy, Michael Porter (1980), has exerted decisive influence. He shaped strategic management by stating that companies fundamentally possess two strategic alternatives for achieving competitive advantages: differentiation strategy and cost/price leadership strategy. Companies that work with the differentiation strategy offer their customers a performance advantage, allowing them to achieve a bonus vis-à-vis their competition. A cost/price leader, on the other hand, offers his customers a price rebate while furnishing merely adequate quality. Porter's approach, it must be noted, was also criticized. Practice has shown that companies must keep a close eye on both price and performance. The comprehensive installment of quality management in particular has led to the possibility of realizing high quality as well as relatively low costs at the same time, eliminating the restriction of having to choose one or the other (Grant & Nippa, 2006, 313). Providers of digital goods in particular have the option of overcoming the contrast between differentiation and cost orientation. They can quickly profit from unit cost reduction when unit quantities rise. At the same time, the customer relationship can be managed interactively online. Information providers can—other than in the traditional mass markets—practice customer-individual (one-to-one) marketing. Even in case of large quantities, such an individualization of the range of services is relatively easily achieved (Fritz, 2004, 171 et seq.). A customer-specific differentiation and reduction of costs can both be achieved at the same time in this way. The competitive advantage thus shifts to the competence of being able to make individual, personalized offers to one's customers (Albers, 2001, 16). We will take up this point later, in the course of our more in-depth elucidation of product and price differentiation.

The goal of our deliberations here is to work out—on the business level—strategic options for providers of information goods. In the following, we will introduce a set of (strategic) variables available to information providers in order to act in their business field. Porter's fundamental considerations on positioning persist for the traditional markets, but information goods require other competitive strategies than conventional products (Klodt, 2003, 108). Porter's strategy alternatives are not made obsolete, but can be implemented as new variants in information markets (Shapiro & Varian, 1999, 25).

16.7 Strategic Variables for Designing Value Nets

What specific strategic variables can information providers use to design their value net, or their business field, respectively? If we are precise, there is of course a huge difference here, since the value net is only a model of the business field. Hence, the design objectives relate to the value net only superficially, always con-

cerning, in the end, the actual business field behind. For our purposes, both terms can be used synonymously.

The starting point of our deliberations is the seminal book “Information Rules” by Carl Shapiro and Hal R. Varian (1999 [1998]). In their “Strategic Guide to the Network Economy”, the authors offer multiple starting points that are of huge significance for information providers’ strategy development. Their work has strongly influenced strategy discussion, particularly from the software industry’s point of view. There is, however, a lack of systematics, e.g. there is no model that serves as the basis of Shapiro’s and Varian’s considerations. As a consequence, it does not become clear which strategic variables have been selected for what reason and what their significance is.

Here the work of van de Kaa et al. (2007) helps us: they investigated 103 publications on standardization under the viewpoint of which factors have been named and how important they were deemed in order to win a fight for standardization. They came up with the result of 31 factors in all, to be placed in five categories: superior design, mechanisms, stakeholders, dominant agent and strategy.

After Suarez, standardization in the industry for information and communication technologies is to be viewed as a process consisting of five phases. At the beginning, there is product development (Phase One) and technological feasibility (Phase Two), which is followed by the development of the market by one or several competitors fighting to create an installed base in Phase Three. In the fourth decision phase, network effects begin to operate and to influence the customers’ decision-making. In the last phase, a standard has been established and is stabilized via the pre-existing network effects as well as switching costs.

These threads can now be very easily combined with one another. According to Suarez (2004, 283), the strategic behavior of a company is decisive for market success. It is the key to influencing stakeholders (e.g. the installed (customer) base) and the mechanisms (e.g. network effects) at play on information markets. If the strategic variables mentioned by Shapiro and Varian (1999) are then squared with those by van de Kaa et al. (2007), we can work out a total of seven strategic variables apart from product quality, which always plays an important role. They are:

- Timing of market entry,
- Pricing,
- Compatibility management (standardization),
- Complement management,
- Copy protection management,
- Signaling,
- Lock-in management.

These seven aspects are strategic variables because they are “manageable”, i.e. under the entrepreneurial influence. Such decision variables, or action parameters, can be used by companies in such a way that targets such as market share, brand awareness or profit can be reached.

In this way, a frame of reference (Grochla, 1978, 62 et seq.) containing factors and relations relevant for our investigation of information providers' competitive strategies can be constructed.

The strategic variables directly and strongly affect the stakeholders, who in turn affect the mechanisms. There are weaker relations between the strategic variables and the mechanisms, as well as for reachback.

In the following chapters, we will describe the strategic variables one by one and in detail, and demonstrate their correlations with stakeholders, mechanisms and other variables.

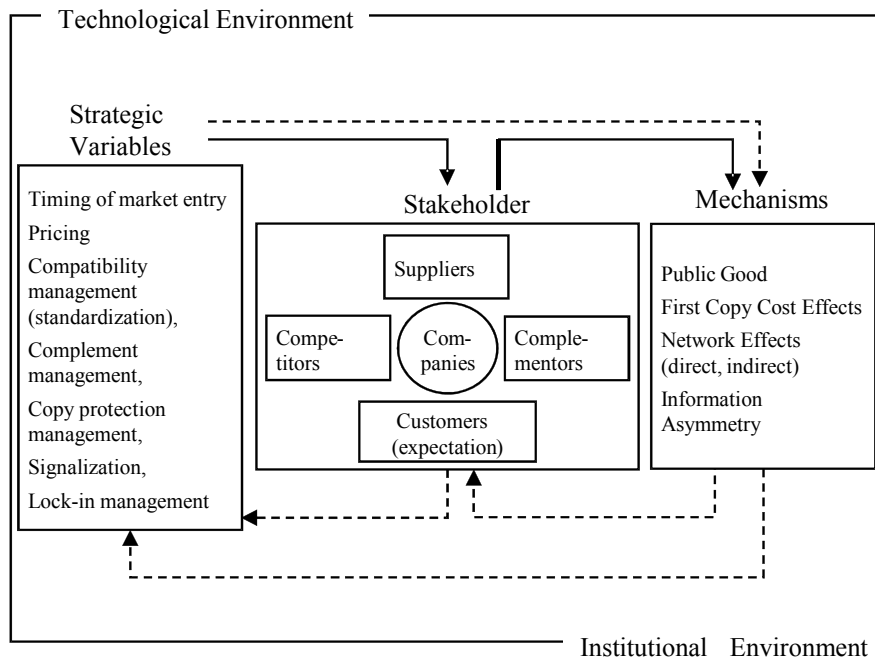


Figure 16.5: Frame of Reference for the Analysis of Information Markets.

16.8 Conclusion

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16.9 Bibliography

- Albers, S. (2001). Besonderheiten des Marketings mit interaktiven Medien. Albers, S., Clement, M., Peters, K., & Skiera, B. (eds.), *Marketing mit interaktiven Medien. Strategien zum Markterfolg* (pp. 11-23). 3. Aufl. Frankfurt am Main: IMK (Kommunikation heute und morgen, 31).
- Backhaus, K. (2007). *Industriegütermarketing*. 8th, fully revised ed. München: Vahlen (Vahlens Handbücher der Wirtschafts- und Sozialwissenschaften).
- Downes, L., & Mui, C. (1998). *Unleashing the Killer App. Digital Strategies for Market Dominance*. Boston, Mass: Harvard Business School Press.
- Fritz, W. (2004). *Internet-Marketing und Electronic Commerce. Grundlagen - Rahmenbedingungen - Instrumente*. 3rd ed. Wiesbaden: Gabler (Gabler-Lehrbuch).
- Grant, R. M., & Nippa, M. (2006). *Strategisches Management. Analyse, Entwicklung und Implementierung von Unternehmensstrategien*. 5th ed. München: Pearson Studium (wi - wirtschaft).
- Grochla, E. (1978). *Einführung in die Organisationstheorie*. Stuttgart: Poeschel (Sammlung Poeschel, 93).
- Henderson, B. D. (1989). The Origin of Strategy. *Harvard Business Review*, November - December, 139-143.
- Hungenberg, H. (2006). *Strategisches Management in Unternehmen. Ziele - Prozesse - Verfahren*. 4th ed. Wiesbaden: Gabler (Lehrbuch).
- Intel (2007a). Intel(R) ProShare(R) Products - Index. (Online).
- Intel (2007b). Die Intel Geschichte. (Online).
- Iwersen, S. (2007). Spieler sind bessere Kunden. *Handelsblatt*, 180, 09/18/2007, 12.
- Katz, M. L., & Shapiro, C. (1985). Network externalities, competition, and compatibility. *American Economic Review*, 75(3), 424-440.
- Klodt, H. (2003). Wettbewerbsstrategien für Informationsgüter. Schäfer, W., & Berg, H. (eds.), *Konjunktur, Wachstum und Wirtschaftspolitik im Zeichen der New Economy* (pp. 107-123). Berlin: Duncker & Humblot.
- Nalebuff, B.J., & Brandenburger, A.M. (1996). *Co-opetition*. New York, NY: Doubleday.
- Neumann, J. v. (2007 [1944]). *Theory of Games and Economic Behavior*. Princeton, NJ.: Princeton Univ. Press (Princeton Classic Edition).
- Porter, M. E. (2004 [1980]): *Competitive strategy. Techniques for analyzing industries and competitors*. New York, NY: Free Press.
- Remer, A. (2004). *Management. System und Konzepte*. 2nd ed. Bayreuth: REA-Verl. Managementforschung (Schriften zu Organisation und Personal, 16).
- Shapiro, C., & Varian, H. R. (1999 [1998]). *Information Rules. A Strategic Guide to the Network Economy*. [repr.]. Boston, MA: Harvard Business School Press.
- Suarez, F.F. (2004). Battles for technological dominance: an integrative framework. *Research Policy*, 34(2), 271-286.
- Tirole, J. (1999). *Industrieökonomik*. 2nd ed. München: Oldenbourg.

- van Kaa, G. de; Vries, H. J. de; van Heck, E., & van den Ende, J. (2007). The Emergence of Standards: a Meta-analysis. 40th Annual Hawaii International Conference on System Sciences.
- Welge, M. K., & Al-Laham, A. (2003). *Strategisches Management*. 4th ed. Wiesbaden: Gabler (Lehrbuch).
- WP (1999). Zusammenarbeit bei Videoconferencing. *funkschau*, 5, 15. (Online).