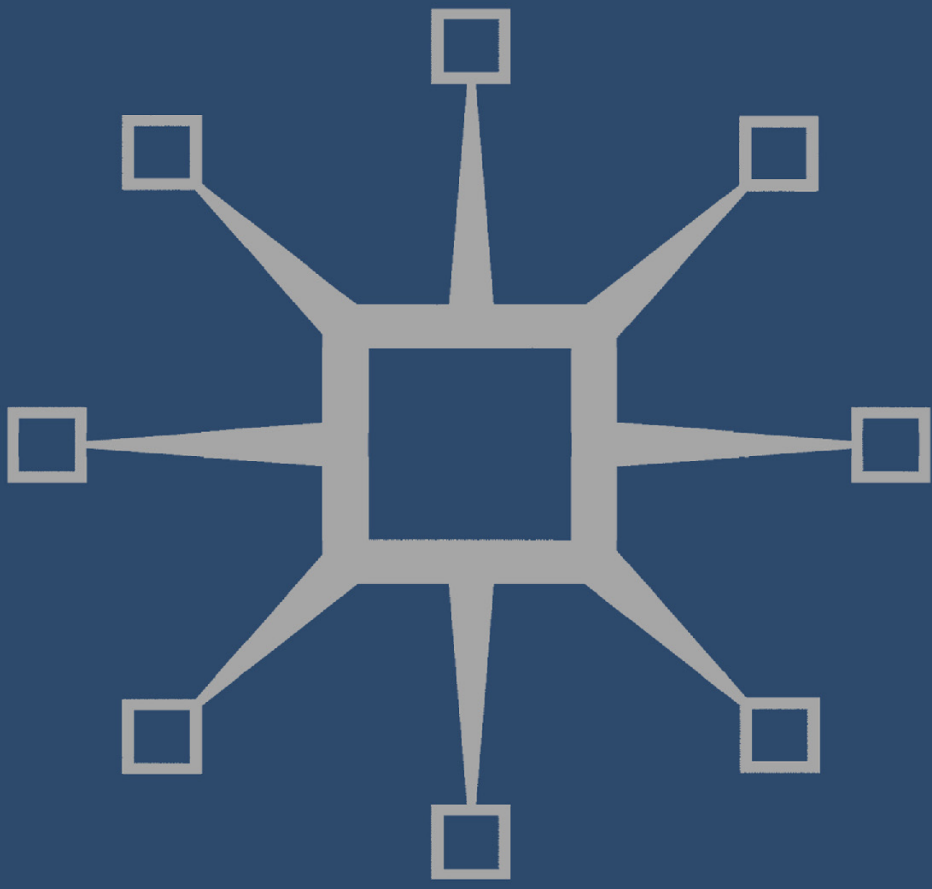
palgrave
macmillan

Counter Strategies in Global Markets

Olaf Ploetner



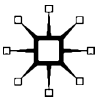
Counter Strategies in Global Markets

This page intentionally left blank

Counter Strategies in Global Markets

Olaf Ploetner

palgrave
macmillan



First published 2012 by
PALGRAVE MACMILLAN

Palgrave Macmillan in the UK is an imprint of Macmillan Publishers Limited, registered in England, company number 785998, of Houndmills, Basingstoke, Hampshire RG21 6XS.

Palgrave Macmillan in the US is a division of St Martin's Press LLC, 175 Fifth Avenue, New York, NY 10010.

Palgrave Macmillan is the global academic imprint of the above companies and has companies and representatives throughout the world.

Palgrave® and Macmillan® are registered trademarks in the United States, the United Kingdom, Europe and other countries.

ISBN 978-1-349-33695-1 ISBN 978-0-230-36295-6 (eBook)
DOI 10.1057/9780230362956

This book is printed on paper suitable for recycling and made from fully managed and sustained forest sources. Logging, pulping and manufacturing processes are expected to conform to the environmental regulations of the country of origin.

A catalogue record for this book is available from the British Library.

A catalog record for this book is available from the Library of Congress.

10 9 8 7 6 5 4 3 2 1
21 20 19 18 17 16 15 14 13 12

Printed and bound in Great Britain by
CPI Antony Rowe, Chippenham and Eastbourne

CONTENTS

This page intentionally left blank

Figures

This page intentionally left blank

PREFACE AND ACKNOWLEDGMENTS

The world is moving at a rapid pace. Political changes have affected the new global reorganization of economic power relationships, accompanied by an unexpected financial crisis and astonishing growth spurts. Innovations and discoveries incite competition and influence the existing social order. For many individuals, the new media is altering not only their world view but also their self-image and vocabulary.

Yet, I am not talking about the current international situation, but rather the phenomena that occurred during the first half of the sixteenth century. After the discovery of America, the southern portion of the continent was conquered by conquistadors – centuries-old regimes, such as the Inca Empire, were decimated. The discovery of gunpowder and the captured silver and gold treasures from the new territories in the West were leveraged by Emperor Karl V to wage war against France and the Ottoman Empire in order to gain supremacy in Europe. His campaign was financed to a large degree by the Fugger family, whose members had been steadily rising in society as merchants – much like the Medici family in Italy – and exploited their political influence by means of their considerable financial might. However, even this formidable power could not prevent the onset of one of the first-known financial inflation crises in Europe. The Reformation was simultaneously gaining influence and altering social classification systems in countries that had previously been devoted to the Catholic Church. The focal point was the teachings of Martin Luther, who provided the less educated with an understanding of the dogmas of the ruling religion through his German translation of the Bible. The technical transformation came in the form of the printing press, which had already been invented in China, but only through its discovery by a man named Johannes

Gutenberg was it used for the greater societal good in Europe. Even the way society viewed the physical world was to change drastically during this time. In 1543, Nicolaus Copernicus proved in his work *De Revolutionibus Orbium Coelestium* (On the Revolutions of the Heavenly Spheres) that the earth revolved around the sun and that this earth was merely a background player in the universe.

Be that as it may, the phenomena of change described above could just as easily be applied to the end of the nineteenth century, the era in which the United States afforded immigrating Europeans financial and social opportunities, which was followed by an upswing in industrial innovations that changed the United States into an economic power. Countless innovations spurred the Industrial Revolution on the European continent. The steamboat and railway intensified international trade; the telephone and telegraph irrevocably altered communication. Cities in industrial nations were growing at unprecedented rates, and Karl Marx acquired an increasing number of followers for his idea that the working class ought to share in political decision-making processes.

Suffice it to say, the phenomena of change described above could also just as easily be applied to more recent world history: the changes in the former Eastern bloc and Communist China; the economic rise of BRIC countries; bank crises and the globalized financial markets; the upsurge in sociopolitical influence of the Internet and worldwide expansion of the English language; the innovations of nanotechnology; the latest developments in genetic research; and the rising societal awareness of protecting the environment.

These parallels with the past ought to underscore two ideas. Firstly, there is no rationale for portraying any epoch as unique. The lament of some of our contemporaries that everything today is more difficult, confounding, foreign, and fast-paced than in prior decades ignores the challenges of

previous generations and the problems of our future. Secondly, economic players in particular should realize that changes today will undoubtedly have palpable impacts on their future success. Those who choose to neglect or do not grasp this truth do themselves a great disservice.

This book addresses contemporary changes and the options available for reacting to them. The focus is on global shifts in the competition structure of technology-based markets, the competitive strategies of Western corporations, and how to deal with them. The statements made are in no way based solely on the opinions of the author. On the contrary, they are the product of conversations with concerned managers, who provided both insights into their businesses and shared their respective views. Of the more than 100 in-depth interviews conducted over the past three years that helped in shaping this book, many conversations offered a particular intensity and had far-reaching influence on the ideas that are presented here.

I would especially like to express my gratitude to Marc Beckmann, Roman Bilmayer, Hildemar Boehm, Mei-Wei Cheng, Markus Dohm, Friedrich Hecker, Joerg Herrmann, Bernhard Kohl, Carsten Liesener, Theo Maas, Sunil Mathur, Johannes Milde, Tom Miller, Hartmut Mueller, Joachim Schoenbeck, Hans-Juergen Thaus, and Felix Wagner. Furthermore, I would like to sincerely thank my colleagues Mario Rese, Martin Kupp, Wang Xuyi, and Michael Ehret for their professional suggestions, as well as my longstanding academic mentors, Derek Abell and Robert Spekman. With respect to editorial assistance and graphic design, I am especially grateful to Gabriele Weber-Jarić, Jeff Reich, Robert Furlong, Inka Warscheid, and Cherline Daniel. Finally, I would like to thank my wife, Eva, who supported me throughout the writing of this book and provided her compassion, encouragement, and constant good humor.

CHAPTER 1

The new competition

ZPMC

In November 1992, the Shanghai Port Machinery Company (ZPMC) was established. The initiator was 59-year-old Guan Tongxian, who headed up the company until 2010. ZPMC aimed to establish itself in the market offering large-scale harbor container cranes, a sector that was traditionally dominated by European companies such as Liebherr or Demag, as well as some North American and Japanese suppliers. Nine years after it was founded, ZPMC had reached the position of global market leader in this business; in 2007, its market share was already estimated to be more than 75 percent. Up to this point, the company had earned profits above industry standard that could not be sustained during the crisis of 2009/2010. Like many companies in the industrial goods sector, ZPMC posted losses in 2009 and 2010. As the company has been listed on the stock exchange in Shanghai since its founding, its figures are publicly available. However, the main owner of the corporation is – via several investment companies – the Chinese state. The Chinese government wanted to strengthen its program "Revitalizing the Great China" with the establishment of ZPMC. Given the increasing international exchange of goods, which is largely handled by ship, growth opportunities in this industry looked promising.

When ZPMC began operations, its managers used to visit ports around the world. These delegations wanted to get

precise information about the plants, processes, and problems of their potential buyers. During these trips, initial personal contacts were established and have been maintained up to today. At the same time, ZPMC began to produce parts for container cranes. The ZPMC managers had learned that the established manufacturers of container cranes demanded very high prices, even for simple spare parts. ZPMC decided to benefit from this by copying them and thus offering its customers considerable cost-benefits while strengthening the technical skills in its own company.

These skills were to be further expanded in the coming years. Under the management of Guan Tongxian, a technology center was established, where the existing technical know-how was collected and developed systematically. While the aim in the first years was mainly to fulfill the international technical standards when building container cranes, independent product development was the focus at later stages. To this end, the designers of ZPMC worked closely with renowned universities such as Northern Illinois University, University of Queensland, and Wuhan University of Technology, among others. ZPMC was also supported by foreign experts who were often retired managers of successful companies in the industry. ZPMC itself had no age restrictions for its employees and hired specialists after their retirement age. To maintain the know-how developed in the company, ZPMC tried to retain employees by offering them above-average social benefits.

In 1994, ZPMC won its biggest order to date. It was the delivery of three complete cranes for the port in Miami, Florida. For the shipment from Shanghai to Miami, ZPMC was supposed to pay a transport company US$ 1.5 million – a price the ZPMC management found unacceptable. So ZPMC invested US$ 2 million in the conversion of a former coal vessel and performed the transport itself. Subsequently, ZPMC built ships that could transport up to nine fully assembled cranes over the oceans (see Figure 1.1). For a while, ZPMC was the sole provider able to supply fully

Figure 1.1 ZPMC transport vessel with assembled cranes
Source: Hans-Joachim Weiß, Bremerhaven

assembled container cranes. It eliminated time-consuming assembly work in the harbors and allowed port authorities to get on with the business of unloading and loading ships.

In the following period, ZPMC increasingly tried to further reduce its dependency on its suppliers. Even regarding crane elements such as couplings, brakes, drives, outdoor lifts, or control systems, the company was no longer willing to subject itself to the "monopolies of Western companies" and started to copy these components as well. The cost-savings reached nearly 85 percent. At the same time, ZPMC developed new products and increased its know-how as to the installation of cranes in close cooperation with its customers. This included the option for the customer to monitor and control the ZPMC teams during crane installation; in return for these activities, the customer received a discount regarding the project price.

When the management of ZPMC was convinced that it was able to produce all vital crane elements itself, they offered

their customers lifelong guarantees on all parts, which was a unique offer in the industry at that time. In addition, the competitive position of ZPMC was strengthened by the product innovations of the technology center. Of special significance was the double container crane produced in 2003 – the first one that could move two containers simultaneously. This doubled efficiency and halved the time for loading and unloading ships. In 2006, a new crane development was implemented whereby three containers could be moved at the same time. The number of patents applied for by ZPMC increased rapidly; in 2010, this figure was 243. In 2009, the research and development costs corresponded to 3.7 percent of sales and were therefore in line with the industry standard. But salaries were significantly below industry standards, namely, only 15–25 percent of Western levels. However, for Chinese workers, they were regarded as above average. ZPMC was able to hire thousands of the country's most-skilled engineers.

In 2008, ZPMC decided to enter into several other product areas of the maritime heavy industry. Since then, offshore platforms for oil and gas drilling, special ships for laying pipelines, and offshore wind parks have also been built by the company. In addition, ZPMC has entered the business area of major steel constructions and was awarded in 2006 the contract to build the new Bay Bridge spanning San Francisco Bay in California. According to the San Francisco Public Press, the American buyer may save up to US$ 400 million with this project by giving the order to ZPMC instead of to other suppliers.

For a Western reader, the case of ZPMC confirms assumptions about the aggressive market penetration of the new competitors from China. To achieve a global market share of 75 percent in only 15 years in an area dominated by renowned companies is an amazing feat. If the management boards of these companies had been asked about their projections for market development in the

mid-1990s, they would probably have regarded today's situation as unimaginable. Of course, in hindsight we always know better, but it nevertheless serves as a cautionary tale for those managers in sectors where the competitive structures have not (yet) changed much.

Contrary to many management decisions in the West, ZPMC has tried to verticalize its own value-added activities as much as possible. After C. K. Prahalad and Gary Hamel introduced their concept of core competencies in contemporary business thinking in the early 1990s, activities have been increasingly outsourced, with the justification that they are not part of the company's core competencies. Business best-sellers such as *The World is Flat* by Thomas L. Friedman in 2005 give the impression that successful companies cannot withstand this trend. But ZPMC is pursuing a very different approach. Instead of focusing on a few value-added activities, it is driven by the objective of being able to do everything itself in order to be as independent as possible from suppliers.

What is also of interest is the handling of seniority at ZPMC. In Western technology firms, one can hardly find examples where a manager founds a large corporation at the age of 59 and still manages it at the age of 77. In the Western hemisphere, 59 is an age at which board members usually need to consider retirement. Also, the inclusion of older managers – whether they are from the company itself or hired from competitors – is rare. In Asian companies, on the other hand, seniority is generally met with more respect.

A short note on the governance structure of ZPMC: the model whereby a company is listed on the stock exchange while the state is the majority stakeholder is not new. In light of the critical debate arising in the aftermath of the recent financial crisis over states' participation in banks and other companies, it is, however, remarkable how this model has succeeded for ZPMC. On the one hand, the company must bow to the pressures of the capital market and the public

due to the obligation to publish its financials. On the other hand, it can be assumed that the close capital-based connection to the state has benefits for ZPMC, whether it is the ability to obtain state approvals, the speed at which bureaucratic obstacles can be overcome for patent applications, or the impossibility of a hostile takeover.

For German technology firms, in particular, it will hardly come as a surprise that ZPMC is trying to hire China's best engineers. ZPMC's cooperation with universities, the relatively attractive salaries, and the offer of special social benefits are also typical for Germany's successful companies, as is the proximity to customers. Understanding processes and problems of customers and thereby establishing long-term contacts is normal on markets for capital goods. Only the willingness to be instructed and overseen by customers is unusual and can be put down to ZPMC's lack of competence in its early years.

Of course, it is not surprising that ZPMC can accommodate its international customers very well when it comes to price. This is due to the comparatively low wages mentioned above. For a certain development task, ZPMC could deploy three qualified Chinese engineers and still have a cost advantage compared to a German company employing a single engineer for the same task. When it comes to less qualified employees, the wage difference when compared to their German counterparts is even higher, which is the reason why numerous Chinese companies will find the purchase of automation machinery quite unattractive.

Finally, some words on what may seem shocking from a Western perspective: yes, ZPMC copied product parts of other companies, particularly in its early years. In doing so, ZPMC confirms the most frequently and hotly debated accusation against Chinese market entrants. Guan Tongxian, the ZPMC CEO for the first 18 years, was quite frank about it. "We just get the best products from abroad.

We imitate, assimilate, absorb, and innovate them to become the products of our own brand." This means that ZPMC entered the market with, at least partly, copied products at low prices. Due to its low costs, ZPMC has been profitable and able to invest in its own technical abilities whereby products are continuously being improved. By now, ZPMC has achieved such a high level of know-how that it can develop its own new solutions and convince the market by offering quality and innovative products.

The Western managers enraged by this should know that this approach is by no means a Chinese invention. In fact, it is a method that was used by German companies that are quite renowned today.

Made in Germany

German products, particularly technical ones, are known for their excellent design and high quality standards. This was not always the case. Far from it! The many small, loosely associated German states that joined together in 1871 to form the first German Empire were wholly focused on agriculture. They lagged far behind other Western European states in terms of industrialization. They had neither a common currency nor a uniform system of weights and measures. Nor did they have any common financial or economic system to speak of. Standardized and reasonably stable trading policies only started to emerge in 1834 with the formation of the *Deutsche Zollverein,* the German Customs Union. This was reflected, above all, in the improved infrastructure, particularly in the establishment of the railway network. However, the process we now know of as industrialization got going very slowly in Germany around 1840 – roughly 50 years after the Industrial Revolution in the United Kingdom.

In the 1870s, the United Kingdom had long set the benchmark for modern industrial manufacture and forged a

monopolistic supremacy for British industry. Its powerful position was reinforced by export bans for specific equipment, such as spinning machines, and emigration bans for mechanical engineers and skilled workers. Having picked up on industrialization so late, the Germans turned to industrial espionage to gain access to these new technical developments and to tap into related business deals and profits. Even high-profile politicians like Carl August von Hardenberg, Heinrich F.K. vom und zum Stein, Christian P.W. Beuth, and the painter and architect Karl Friedrich Schinkel embarked on "study trips" to the United Kingdom. There they toured the industrial cities, looked around the factories, studied the mechanical equipment, and sketched the machines to be copied in Germany. With the same goal in mind, German students were also sent to the United Kingdom, supported by generous research grants. Despite the export ban, they made drawings of British machines or brought them to Prussia by shipping them to addresses elsewhere. One of Schinkel's diary entries written on a trip to the United Kingdom with Beuth records the mix of admiration and longing they felt toward what they saw.

> We then visited a white lead factory with a high shot-tower, which provided an excellent view of the surrounding area. The rollers used to cut the white lead from the lead were continuously sprayed with water to prevent harmful dust emissions. (. . .) On taking our leave, we presented Mr. Strutt, who had been so accommodating, with a large bronze medal imprinted with Blücher's image as a memento. We went on alone to Mr. Fox's workshop and saw his incredible lathes and the famous planing machine. (. . .) We then visited an oven manufacturer, toured a shop selling artwork made of fluorite and bought a few pieces from there. The owner showed us his workshop, which was fitted with excellent machines for grinding and sawing. In the evening, we retired to our lodgings to write up our notes . . .

As another means of reducing its industrial and economic deficit, Germany also headhunted for industrial experts from abroad. Prussia made a start in 1815 by enticing brothers John and James Cockerill from the Netherlands to Berlin with the offer of establishing their own wool-spinning mill and mechanical engineering facility. They were presented with a suitable building, but had to set up the factory at their own expense. The agreement was that, in return for training the German workforce, the property and building would pass to the Cockerill brothers after ten years. This is indeed what happened, and the Prussian government was obviously pleased with the results.

Yet the Prussian machines and the goods they produced were not able to achieve the quality that they aspired to overnight. In 1876, Professor Franz Reuleaux, a German judge at the World Exhibition in Philadelphia, described Germany's exhibits as "cheap and poor quality." This was around the time when Germany had started to replace its standard exports of sugar, potatoes, and needlework with saws, knives, and files – at much lower prices than the goods produced by the United Kingdom. The problem was that Germany used low-cost cast iron instead of top-quality cast steel. To give these fakes some credibility, names were simply stamped on them to give the impression that they came from Sheffield, England, the stronghold of high-quality cutting tools at the time.

When 11 countries met in March 1883 to sign the Paris Convention – an agreement on patent and trademark laws – Germany decided not to attend the meeting, let alone be one of the signatories. Consequently, in August 1887 Britain decided to revise its Merchandise Marks Act, stipulating that all imported goods be marked with the name of the country of origin. For a time afterward, *Made in Germany* stood for cheap products and forgeries. This only changed once German engineers, scientists, and entrepreneurs had learned how to design and produce top-quality products

themselves. Take the first optical microscope designed by Ernst Abbe and Carl Zeiss in 1873, for example. As early as 1879, Zeiss was already exporting half of its microscopes and had set up branches in Russia, the United Kingdom, and Austria.

For a while, German products were still offered at lower prices and with better delivery conditions than their British counterparts, so the negative connotations of *Made in Germany* gradually became a positive factor, and eventually even a seal of quality. In Germany, new universal banks provided capital for up-and-coming companies, and the number of companies with more than 1000 employees tripled. By 1914, before the start of World War I, the country had become one of the world's leading exporters. This was quite a transformation from the mid-nineteenth century, when Germany consisted of fragmented states that were backward, mainly agricultural and, for the most part, downright anti-industrial. Since then, the seal of quality *Made in Germany* has recovered from two world wars and has played an important part in laying the foundation for the German *Wirtschaftswunder* (economic miracle) of the 1950s and 1960s. German technology companies still benefit from this seal of quality today, which adds to the country's reputation for high-quality engineering.

And then the industry is gone

However, not all good product ideas from Germany were successfully implemented in the end. This does not mean that they were stolen by foreign competitors, but that their marketing potential at home was not recognized. The list of missed innovation successes in Germany is long, particularly in recent history. In 1941, Konrad Kruse designed the first electromechanical calculator, thereby turning the digital functional principle into a product. But business with computers was mainly done by American companies, such as IBM. In 1956, a German engineer called Rudolf

Hell developed the predecessor of the fax machine, but its successful marketing was done 20 years later by Japanese companies. Siemens held the patent rights but had no further interest in this matter. The billions made with the audio format MP3 – which was developed in the 1990s, among other things, by Karlheinz Brandenburg at the Fraunhofer Institut in Germany – was also a result of foreign companies exploiting the technology.

But even if *Made in Germany* inventions found their way into industrial production and were excellently implemented in Germany, they did not always achieve sustainable market success. Companies that once dominated entire sectors with their technological expertise have disappeared or have been sidelined. Loewe, whose engineers achieved the first fully electronic TV broadcast, continues to sell TV sets, but its global market share has dwindled. Its former competitor Grundig has in the meantime been bought by the Turkish Koç Group. Leica has disappeared – it set new standards for the photo industry in 1925 with its small image camera. Allgemeine Elektricitäts-Gesellschaft (AEG), which once brought to market the three-phase motor and the first tape recorder, saw demand for its products drop so low that the company had to be dissolved in 1996. Only the rights to the brand name AEG were worth anything; today, they belong to a foreign financial investor. The demise of AEG was already feared by its founder, Emil Rathenau, at the start of the twentieth century when he warned of "a flood of products that are produced in the Far East for little money."

In recent decades, Asian companies have often been successful in markets where Western technology firms have specialized, that is, with machinery as well as electronics and the car industry. One example of the rise of Asian companies can be seen in developments within the truck industry, where only Daimler has survived as one of the leading companies from Europe and North America over the last 15 years. All the other suppliers are Asian (see Figure 1.2).

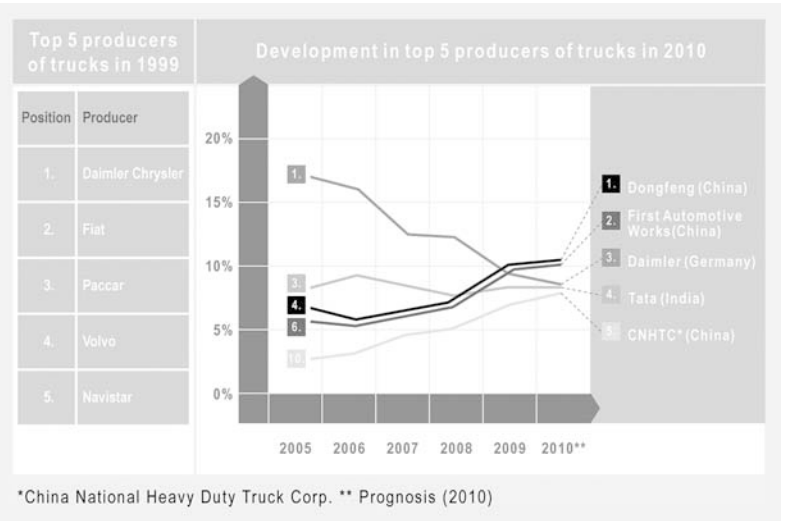


Figure 1.2 Development of suppliers in the truck industry
Source: OICA. Production Statistics. http://oica.net/category/production-statistics/. 05/20/2011

After World War II, new competitors for Western companies predominantly originated from Japan: Toyota, Mitsubishi, and Sony are the most prominent examples. Today, competitors mainly come from China and India. Economically, China is the most important of the so-called BRIC countries (Brazil, Russia, India, and China), where 40 percent of the world's population live. It is estimated that in 25 years their total gross domestic product (GDP) will be larger than that in today's G8 states, even though these countries do not currently have the strongest growth. According to the International Monetary Fund, countries such as Qatar and Paraguay are ahead of them in this respect. However, considering their size, the BRIC economies are of considerable significance in the global economy. Mexico, Indonesia, South Korea, and Turkey should also be mentioned in this context, as they, too, can be characterized by their strong growth and have globally significant GDP (see Figure 1.3).

Gross Domestic Products 2010–2050 (in US $ billions)						
Rank	Country	2010	2020	2030	2040	2050
1	United States	14,657	17,978	22,817	29,823	38,514
2	Japan	5,458	5,224	5,814	6,042	6,677
3	Germany	3,315	3,519	3,761	4,388	5,024
4	China	5,878	12,630	25,610	45,022	70,710
5	United Kingdom	2,247	3,101	3,595	4,344	5,133
6	France	2,582	2,815	3,306	3,892	4,592
7	Italy	2,055	2,224	2,391	2,559	2,950
8	Canada	1,574	1,700	2,061	2,569	3,149
9	Brazil	2,090	2,194	3,720	6,631	11,366
10	Russia	1,465	2,554	4,265	6,320	8,580
11	India	1,537	2,848	6,683	16,510	37,668
12	South Korea	1,007	1,508	2,241	3,089	4,083
13	Mexico	1,039	1,742	3,068	5,471	9,340
14	Turkey	741	740	1,279	2,300	3,943
15	Indonesia	706	752	1,479	3,286	7,010

Figure 1.3 Forecast of the development of GDP

Source: Goldman Sachs Global Economics, Commodities and Strategy Team (2007). Brics and Beyond, http://www2.goldmansachs.com/ideas/brics/BRICs-and-Beyond.html. 06/20/2011, and International Monetary Fund (2011). World Economic Outlook. http://www.imf.org/external/pubs/ft/weo/2011/01/weodata/download.aspx. 05/20/2011

Goldman Sachs assumes that China and India will concentrate their growth efforts on industrial goods and services, while Russia and Brazil will focus on marketing commodities and agricultural produce. Given the political interest in the technology sectors in China and India, their huge and fast-growing domestic markets, and the rapid increase in qualified engineers in both countries, it is hardly a surprise that the new competitors of Western technology companies come from these two countries.

Western suppliers may see this global economic development as a threat, but it also offers major opportunities. New potential sales arise for export companies, which, in Germany, make up more than one-third of economic output. Although the goods exported by Germany in 2009 were worth €816 billion, the country recently lost its title as world export champion to China. Still, the German export rate is remarkable if we consider the size of the country's population compared to China and its GDP. Even in the crisis year of 2009, Germany managed to generate a significant trade balance surplus, although trade volume dropped in all 27 EU nations. There was only one country with which trading increased, and that was China.

But let us stay with Germany as an example of the condition of mature markets: the country's high export rate is mainly due to technology-based goods. The car industry – including suppliers, machinery, and capital goods – is the area with the strongest sales. In this sector, German companies have even been able to improve their competitive situation in recent years: Volkswagen has become the world's second biggest car manufacturer when calculating sales. Siemens is the global market leader in healthcare technology, offshore wind parks, and medium-voltage switches. With its micromechanical sensors, Bosch is the world's biggest supplier to the car industry. Even greater market dominance is held by medium-sized German enterprises such as Trumpf for industrial laser systems, Hauni for machines in the tobacco industry, and Krones with its bottle-filling machines for the food and beverage industry. So while some established technology companies have failed, others have managed to succeed. The latter will be looked at in greater detail below, especially companies that have been successful in the global markets for quite some time. As several studies have shown – such as the 2005 study by Robert R. Wiggins and Timothy W. Ruefli – these companies are all the more remarkable because it has become even more difficult to maintain a leading market position. However, the competitive strength of German companies

does not always go hand-in-hand with high profitability. With regard to the current key performance indicators of capital markets, such as return on capital employed, extraordinary results are neither being achieved within the car industry, nor in machinery and capital goods. However, these are solid companies that pursued *sustainability* before it became a buzzword.

Academic standards and practical relevance

The aim of this book is to provide more insight regarding the most recent development in global competitive strategy. To this end, successful and less successful examples of corporate practice in the areas of machinery and capital goods are being used, systematized, and linked to theoretical findings. Even if this book presents cause-and-effect connections and offers practical advice, these should not be misunderstood as finite rules. Nobody will find here the seven golden strategy principles of global market leaders or the five steps of strategic success. This is based on the assumption that when it comes to strategy, there are no eternal rules

- whose validity has been sufficiently proven,
- whose general applicability makes them relevant for a large number of companies, *and*
- whose strong practical relevance provides solutions for specific problems in a company.

In this respect, the following explanations differ from those in a host of popular management books such as *In Search of Excellence* by Thomas Peters and Robert Watermann or *From Good to Great* by Jim Collins. These authors claim that their statements are generally valid and justify this with empirical studies that follow a similar methodological pattern: first, successful companies are identified, whereby the success indicators follow the perspective of the capital market. The managers are then asked about their company's success factors. Finally, on the basis of an examination of

a large number of companies, similarities in answers are filtered out and supposedly generally applicable statements are derived.

The initial problem with this approach has to do with the selection of the samples, as it only shows examples of successful companies but not what makes them different from less successful ones. This would be like asking only gold medal winners about their training programs. Their answers would tell us how much they train but not what differentiates them from other top athletes.

Even if we surveyed the managers of successful and less successful companies – as Nitin Nohria, Bruce Roberson, and William Joyce did in *What Really Works* – the connection between cause and effect or the relation between independent and dependent variables usually remains unclear. For example, studies may show that successful companies have particularly skilled workers, whereas unsuccessful ones do not. But such a correlation does not have to prove that skilled workers per se will create business success. It is not only that the companies' results depend on many factors that have to be isolated by their impacts. It could be that cause and effect works vice versa, namely that the company's economic success has attracted skilled workers.

Another problem with such results is the so-called halo effect, which may occur when interviewing the managers. The halo effect refers to errors in assessment and perception due to certain properties outshining others. A simple example is the attractive person whom we consider to be pleasant due to his or her looks. This phenomenon certainly plays a role here, as financial success can easily outshine other properties of a company. Or to put it differently: if a company achieves excellent financial results, managers have the tendency to consider all management decisions to have been correct, regardless of whether this refers to personnel management, competitive strategy, or customer care. This

applies in particular with regard to our own decisions. It is like the soccer player who scored three goals and considers himself flawless, even though he has made all kinds of mistakes during the soccer match. In 2007, Phil Rosenzweig wrote *The Halo Effect: . . . and the Eight Other Business Delusions That Deceive Managers* and brought the results of numerous examinations of this kind into question.

But problems of validity lose significance if you keep your statements as general as possible. If Alfred Marcus in *Big Winners and Big Losers* comes to the conclusion after a comprehensive analysis of numerous companies that a company must keep up with the speed of market change, the validity of this statement seems obvious. To which extent it helps managers to solve specific problems is a matter of debate. The same goes for results that are published in a strictly academic context. The validity of these statements is usually guaranteed, but not their practical relevance. Frequently, arguments are made as part of models in which the complexities of the real world are reduced to such an extent that it makes it impossible for managers to discover what might be useful for them.

The claim of this book is different. It wants to show recent strategic developments to generate ideas and results that can be applied to practice. It focuses on the competitive strategies of established technology companies in globally shifting markets. In Chapter 2, the conceptual basics of competitive strategy are presented, and three ways showing their practical implementation are introduced. Two of these, namely "no-frills technology" and "complex service solutions," are closely analyzed in Chapters 3 and 4, respectively. In the final chapter, we try to see how these two approaches may be combined with traditional competitive strategies and show the problems associated with this. But as all considerations presented here refer to business-to-business (B2B) markets for technology-based goods and services, the characteristics of these markets should be outlined first.

The fascination of technology

The power of state-of-the-art technology is fascinating. We are amazed that in Dubai a skyscraper was built more than 800 meters high, that more than 30 billion bits can be housed on only 6 square centimeters, and that planes reach nearly 10 times the speed of sound. The achievements in the machinery industry are less spectacular, but also include top performance: machines that fill more than 65,000 plastic bottles per hour; tunnel-boring machines that drill 50 meters a day into solid rock at a diameter of 10 meters; or bucket-wheel excavators of more than 200 meters in length and nearly 100 meters high that excavate up to 240,000 tons of coal per day.

Technology products in the sense understood here are highly complex. Engineers are continually seeking to improve their goods, which in the end makes them more complicated, and the number of individual components is endless. The nuclear submarine of the French navy that entered service in 2008 is said to consist of more than one million individual parts. The services in technology-based B2B are also highly complex: if a company like Hochtief builds an airport and then operates it itself, this involves countless activities that must be organized by time, place, responsibility, and cost, among other things.

Building submarines or running airports are extreme examples, but many other technology products have levels of complexity that are generally greater than those of consumer goods. The developments in information and communications technology or electronics have resulted in quantum leaps. Consequently, the complexity of these products has increased. A car in the premium class now has more than 70 digital control units, which make up more than one-third of overall costs; for machine tools this cost share is above 60 percent. The amount of new materials has multiplied thanks to nanotechnology. These are used in

complex technology products on B2B markets, for example, in the aerospace and aviation industries. Many of these are cross-sector technologies that may impact numerous areas of a technical product. In this context, Thomas Endres, CEO of Airbus, complained that it now takes years to get an overview of the technologies used in a contemporary jet and that there are ever fewer employees who have this overview.

On the one hand, the increasing levels of complexity in technology-based products present major challenges for the providers. On the other hand, it is precisely this complexity that has protected the established technology companies for so long against new market entrants. This is likely one of the key reasons why Chinese and Indian companies were only recently able to enter these markets, in contrast to the toy, soap, or textile industries, wherein established producers have been faced with competitors from these countries for decades. Another reason why global competition in technology-based markets has been relatively stable for a long time has to do with the costs of these goods. High technical complexity results in expensive products. Actually, the costs are not only high but predominantly fixed, which means they do not change with the quantity produced. Expensive equipment is required as well as qualified employees; depreciation of equipment occurs and salaries must be paid even if production is temporarily down. The same goes for research and development, whereby laboratories must be financed, licenses bought, and specialists' salaries paid. For new competitors, these high fixed costs are market-entry barriers. Founding a new company requires considerable investments and therefore risk, which makes capital investors reluctant to invest, especially if profit margins are as small as those in the areas of machinery and capital goods.

The customers of these technical goods are companies or institutions, which is why we speak of B2B markets, which

do not address end consumers, as in business-to-consumer (B2C) markets. B2B customers buy solutions to be able to provide solutions themselves and sell these to their customers. As a result, B2B customers are active on a value-added basis, which has a major impact on the demands made of their suppliers. Such customers want to know before they buy to what extent the B2B product will improve their value-adding processes, whether the quality of their own products will thus be improved, or whether their production processes will become cheaper and faster. As the managers who are responsible for purchase decisions are not spending their own money but that of their employers, they are under pressure to justify their expenses and decisions and have to minimize risks and costs. For that reason, they will define as precisely as possible what a product should provide, which properties it should have, and conduct comprehensive price analyses. In addition, they often want to be able to understand in which way a product will meet their specifications so that they have the highest possible certainty that the product will provide what was promised.

These high information demands of customers result in high demands on the supplier's sales managers. They must not only understand the technical natures of these complex products but also be able to explain these to their customers. To do this, they have to know the benefits of their products from their customer's perspective and be aware of the value chain at the customer's company. They must also have basic legal knowledge, as the legal complexity in B2B markets is higher than that for B2C goods and may mean dealing with contracts that are hundreds of pages long. In sum, these managers need to have technical, commercial, legal, and social competencies. Some of them will be intimidated by this, whereas others will embrace the variety and would not dream of switching jobs with a B2C colleague; maybe especially so as B2B markets involve large sums of money. This can also be an incentive.

Key statements

- The world is currently seeing its strongest growth in China and India, where economic performance is growing hand in hand with a high increase in demand for technical products and the establishment of new providers in these markets.
- As with German companies 150 years ago, the market entry of new competitors is often started by offering cheaper and lower quality – sometimes copied – products.
- However, by promoting research and development activities, some of these companies can, after a certain period of time, offer products of a high enough quality that challenge the market positions of established competitors.
- Customers in B2B markets have high information demands, want to keep costs and risks as flat as possible, and are under pressure to justify their buying decisions. To understand customer requirements, the suppliers' sales managers should be aware of the value chain at the customer's company.

CHAPTER 2

On war and strategies

'Knowledge must become capability' (Carl von Clausewitz, 1832)

The way we talk about the fight for market share, price wars, and discounting battles suggests that military metaphors are ideal for explaining management strategies. Even the term *strategy* is a military one. It is derived from the Greek word *strategos*, meaning a military leader or general. The French general and war historian Jacques-Antoine-Hippolyte, Comte de Guibert introduced the term *stratégie* into contemporary parlance in the eighteenth century. His work entitled *Défense du Système de Guerre Moderne* described Prussia's military tactics. The term subsequently became better known thanks to the Prussian general Carl von Clausewitz. In 1806, he fought in the Napoleonic Wars as a Prussian staff captain and adjutant. Following the twin battles of Jena and Auerstedt on October 14, 1806, he spent a year in France as a prisoner of war. During this time, in his *Historische Briefe über die Kriegsereignisse im Oktober 1806*, he analyzed both the Prussian army's defeat and Napoleon's tactics. When Clausewitz returned home in 1809, the Prussian general Gerhard von Scharnhorst recruited him, and one year later made him his chief clerk. Clausewitz was also a tutor, instructing Prussia's princes in general staff service and tactics. In 1815, as chief of staff in a Prussian unit under Field Marshal Gebhardt von Blücher, he fought in the final Anglo-Prussian campaign against Napoleon I, which ended with Napoleon's defeat at Waterloo (1815). Clausewitz served under General

Figure 2.1 Carl von Clausewitz, *Vom Kriege* (On War)
Source: Rowohlt Verlag, Reinbek

August von Gneisenau until 1818. He subsequently took up the position of director of the *Allgemeine Kriegsschule* in Berlin. In 1821, he joined the Prussian army's general staff. A cholera epidemic led to his death in 1831.

Clausewitz's legacy was his unfinished standard military reference work, entitled *Vom Kriege* (On War) (see Figure 2.1), which his widow Marie von Clausewitz published posthumously in 1832. It is a comprehensive study of the combat options for a mass army of the kind seen in France for the first time since Napoleon. Clausewitz maintained that an army is not a faceless crowd of people blindly following orders. It is a group of individuals, "the most insignificant of whom can cause a delay or some other irregularity." Clausewitz sees these irregularities – which are just as important as the weather during a battle – as the "frictions" that make the art of warfare difficult. As a result of

these frictions, Clausewitz believed that it was not possible to plan campaigns down to the last detail. Instead, officers repeatedly needed to adapt to changing circumstances. In his opinion, it was not even possible to solve this problem by collecting a mass of information. In his experience, most wartime communication was contradictory, incorrect, or at the very least highly unreliable.

For this reason, Clausewitz did not provide any clear stipulations on developing a strategy. He believed that this required mental agility and the ability to identify a variety of options for action, think these through, and evaluate them correctly by demonstrating exceptional intellectual acuity. Sometimes he put himself in the position of a tactician with inferior resources who could emerge victorious from military conflicts by selecting unusual guerrilla warfare methods. The Spanish army achieved this feat in its war with Napoleon's French troops between 1808 and 1814. Another approach, which Clausewitz called the "strategy of attrition," involved wearing down the enemy by forcing it to stay on the defensive for long periods of time. This was the strategy Napoleon had planned at the start of his Russia campaign. Clausewitz was the first to categorize specific types of fighting. These were essentially subdivided into defensive and offensive fighting. He classified the relevant sub-categories accordingly. These, too, were exemplary in their detail – from attacks on entrenched camps and troops in the mountains, marshes, or woods to offensives during floods and against an enemy army on its base. He described the counter strategies and the characteristics of defensive fighting just as meticulously.

Discussing the findings of Clausewitz and other military strategists – such as Sun Tzu or Musashi in Asia – in the context of economic problems has become popular in recent years. Managers may even gain some insight or other, but this should not be overvalued. There is no direct comparison between business and military actions. The fact that we

do not normally face death in our business lives – and do not even need to contemplate it, irrespective of how short-sighted our strategic planning is – is in itself sufficient to refute any such claim. Another difference is that wars end at some point, whereas competition in the market economy is ongoing.

From Chandler to Porter and Kim

The economic historian Alfred Chandler played a key role in introducing the concept of strategy into economics in the 1960s. In his book entitled *Strategy and Structure – Chapters in the History of the American Industrial Enterprise* and with his well-known premise, "structure follows strategy," he referred to the fact that an organization's structure and processes depend on what a company is looking to achieve on the market. The American mathematician and economist Harry Igor Ansoff is responsible for a further milestone in the corporate strategy debate. More than 40 years ago, in his work entitled *Corporate Strategy*, he explained the potential synergies within companies, the advantages and disadvantages of vertical integration, and how competitive advantages arise. He was, however, best known for his simple structuring of companies' growth options. If a supplier's products no longer enable them to grow in their existing markets, Ansoff first recommends expanding into new markets and then marketing new products with existing customers. He sees diversification – that is, launching new products in new markets – as the most difficult option.

It is, however, Michael Porter who has had the most lasting impact on concepts relating to competitive strategies. As an industrial economist, he realized that a company's success initially depends to a great extent on the specific characteristics of a particular sector. In his 1980 book entitled *Competitive Strategy*, he coins the term "five forces"

in reference to the five key external competitive forces that determine a company's business success. These include the strength of existing competitors, threats from new competitors and replacement products, and the power of customers and suppliers. An analysis of these factors provides a suitable basis for devising a company's competitive strategy in a particular area of business. According to Porter, a company can achieve higher profits than its competitors in a specific sector if it has competitive advantages. First, though, the customer must recognize the advantage when purchasing a product. From a conceptual, theoretical perspective, a customer benefit must satisfy the following three criteria:

- the customer must recognize it,
- it must be important to the customer, and
- it must be hard for the competition to copy.

Given that suppliers look to make a profit, though, they cannot create the customer benefit by lowering product prices to such an extent that they no longer cover their costs. Although this would be attractive for customers, the supplier would not have a competitive advantage. On the contrary, it would disappear from the competition in the long term.

Taking the above into account, this book focuses on the concept of a business unit's competitive advantage and a company's resultant "competitive strategy." The key question is which strategic options a supplier should select to achieve sustainable competitive advantages on a particular market. Porter has created a conceptual basis for this as well. He distinguishes between the generic approaches of the niche strategy, the differentiation strategy, and the cost-leadership strategy. The latter enables a supplier to offer customers price benefits without making losses. In principle, however, there is no automatic link between cost leadership and low prices. A favorable cost position simply gives a supplier greater room for maneuver on prices. In other words,

it can lower prices and still remain profitable if the competitive situation so requires. As long as sufficient demand still exists for its products at higher prices, though, the supplier will not use this option. I use the term "product" in a very broad sense here. It covers the entire package of services that a supplier markets, including conventional services and benefits in kind.

There can be several reasons for a better cost position. These can include locational factors, for example, if wage-intensive production takes place where labor costs are lowest. Economies of scale are a further factor. They enable companies to negotiate better terms of purchase for higher production volumes and improve machine-capacity utilization. Learning-curve effects (i.e., learning from experience when repeating activities) can also result in a better cost position. Last but not least, more efficient organization of internal processes can also deliver cost-benefits. Dell is a frequently cited example in this respect. In the 1990s, it succeeded in structuring procurement and sales processes more cost effectively than its competitors by using Internet technology and state-of-the-art logistics systems. Dell passed on some of these cost-benefits to its customers in the form of lower prices, which boosted sales. This, in turn, enabled Dell to benefit from economies of scale. This example clearly demonstrates that a cost-leadership strategy can also be based on innovations.

Porter's second strategy – differentiation – relates to the quality of a service. In this case, the customer opts for a supplier's product because it has a characteristic that no other competitor offers. Differentiating properties may be functional in nature – the magnifying power of a Carl Zeiss microscope, for example. They can also be based on a product's appearance or on a corporate brand's reputation, as in the case of Apple. The time dimension – that is to say a supplier's time to market – has also become particularly important in this respect. Zara is a much-cited example

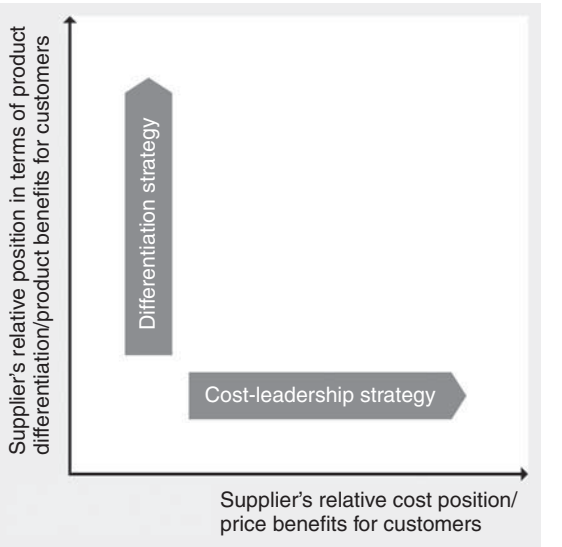


Figure 2.2 Differentiation and cost-leadership strategies according to Porter
Source: Compiled by the author (according to Michael Porter (1980))

in the consumer goods sector. It immediately copies the designs premiered at the major fashion shows for its budget clothing lines and distributes them to its branches worldwide. Other fashion houses take at least half a year to get to this stage.

The abovementioned strategies of cost leadership and differentiation can be depicted in a diagram with two axes (see Figure 2.2). A supplier's position is always relative to its competitors. Consequently, both the supplier itself and the reaction of its competitors influence its position. If a company's unit costs remain stable but the other competitors improve their costs, the company's position worsens and moves "west."

As with virtually all matrices of this kind, the optimum position is in the "north-east" – that is, where a supplier offers both cost and quality benefits. In 1987, Xavier Gilbert and Paul Strebel proposed the *outpacing* approach to get

there. This approach involves alternating competitive strategies. Once a company reaches a specific quality level, it then works on improving its costs and once again focuses on optimizing product quality. Since the strategic focus on quality and costs includes some contradictory elements, though, such an approach is not without its problems. We will return to this in Chapter 5.

Porter also pointed out the limitations of this approach when introducing the concept of the *productivity frontier* in 1996. This frontier can be illustrated by linking both axes, which in an ideal model will turn into a 90-degree curve (see Figure 2.3). Once a company reaches the frontier, trade-off effects exist between the two strategies. Based on this logic, having reached the productivity frontier in its particular market segment, a supplier cannot improve costs without compromising on quality or must accept a worsening of its cost position if it wishes to improve quality.

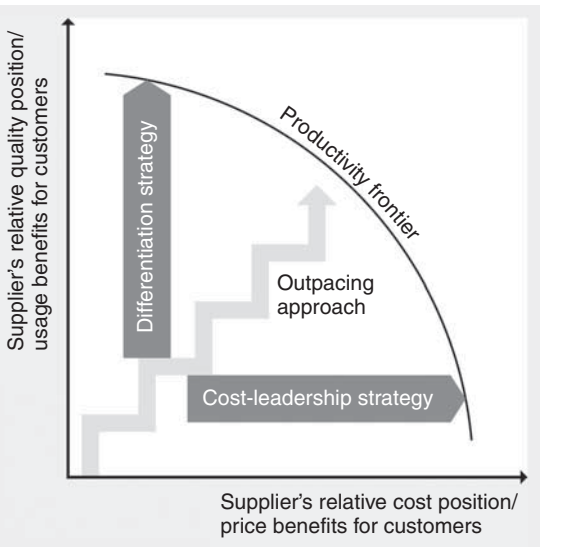


Figure 2.3 Outpacing and productivity frontier approaches
Source: Compiled by the author (according to Michael Porter (1996))

More recently, the economist W. Chan Kim has made a name for himself by overcoming the contradiction Porter described, at least in conceptual terms. Together with his colleague Renée Mauborgne, he published the book entitled *Blue Ocean Strategy* in 2005, which became a bestseller in management circles. Kim and Mauborgne looked at companies that had attained a leading position on saturated markets by questioning their existing business models and adopting new approaches. Cirque du Soleil was one of their examples. In the 1980s, it offered customers a new, entertaining circus experience while at the same time achieving a better cost position than traditional circus organizers through strategies such as dispensing with big, expensive performances involving animals. According to Kim, suppliers did not need to match or be slightly ahead of the competition in terms of costs and quality. Instead, he recommended avoiding competition by offering something significantly different and thus creating a new demand.

Essentially, though, the idea behind *Blue Ocean Strategy* was nothing particularly new. At the end of the day, it simply boils down to what we refer to as innovation. Less well-know examples include the Hanseatic League's logistical process organization in the twelfth century, mail-order companies in the nineteenth century, and package holidays in the twentieth century. The term *innovation* used to be restricted to the product itself, but in the 1940s economist Joseph Schumpeter widened this narrow interpretation. He saw innovation as both a technical and organizational phenomenon. The same interpretation applies today. Innovative as a company like Ikea is, it did not actually invent furniture, nor did Amazon invent the book or Cirque du Soleil, the circus. What they did do was achieve great success in their respective markets by making innovative changes to their business models and processes.

The sustainability of these successes depends on how long the resultant competitive advantage can be maintained.

With process innovations in particular, competitors will immediately try to copy the new developments because they are not subject to government regulations such as patent protection or licenses. It is not by sheer chance that Cirque du Soleil's competitive advantage now no longer lies in offering a unique experience for its customers but rather in its size and the associated impact on costs. The company has now gone global and generates sales of more than US$ 800 million. This brings us back to a cost leader's competitive advantage and to Porter's abovementioned strategies.

Now we come to Porter's third approach. This is known as the niche strategy. It relates to how broad-based or focused a company's market cultivation is. *Focused* in this context means concentrating on a specific market segment, while *broad-based* means targeting all customer segments in a given market. The four-field matrix in Figure 2.4 illustrates this approach.

According to Porter, a supplier opting for focused market cultivation can, in principle, combine differentiation and cost-leadership strategies. This choice is, however, irrelevant if we see focused market cultivation (niche strategy) as an alternative to these two approaches. In this case, the manufacturer does not have any direct competitors because

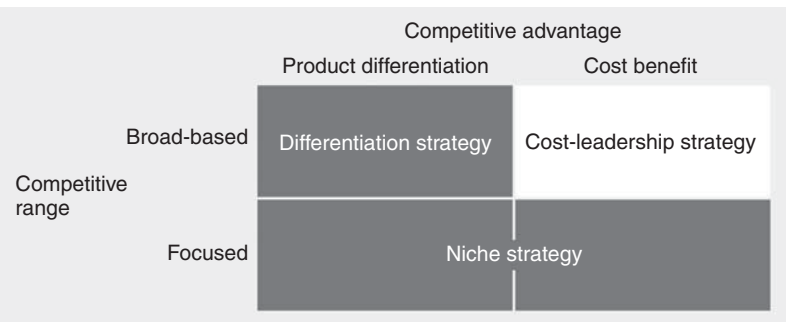


Figure 2.4 Matrix illustrating Porter's generic strategic approaches

Source: Compiled by the author (according to Michael Porter (1980))

its products cover the niche customers' very specific needs that other suppliers cannot satisfy. In the consumer goods sector, such quasi-monopolistic supplier positions apply to products that enjoy cult status with certain customers or are regarded as collectors' items. Examples include Käthe Kruse dolls and Viking toy cars. There are also numerous examples of the niche strategy in the pharmaceuticals sector, where some drugs on the market are only prescribed for a few people worldwide. One such drug is Mepact from IDM Pharma for people suffering from osteosarcoma, a rare bone cancer.

Companies that successfully follow a niche strategy enjoy a leading position in their market sector due to a lack of relevant competitors. Hermann Simon confirms this in his book *Hidden Champions of the Twenty-First Century*, which attests to the market leadership of a number of largely unknown SMEs. The 2008 book by Fritz Kroeger, Andrej Vizjak, and Michael Moriarty, entitled *Beating the Consolidation Endgame – Nine Strategies for Winning in Niches,* sees niche suppliers in a different light, though. The authors looked at the same companies as Simon but depicted them as relatively small market players in their competition analyses.

This apparent contradiction is explained by taking into account the way the market in question is demarcated. The narrower the defined market, the larger a company can appear to be in it. In an analysis of the automotive market, for example, Porsche is a small supplier compared to Toyota or Ford. If, however, the market is restricted to high-quality sports cars, Porsche is one of the largest suppliers compared to competitors such as Ferrari or Aston Martin. Incidentally, choosing the right market demarcation is very important given the pressure for a company to be or become number one – or at least number two – in a market. To create the right impression, it is easier for a manager to change the market demarcation criteria than his business unit's competitive strength.

Let us look at market demarcation based on the interpretation of European antitrust legislation. According to this legislation, the decisive criterion is a product's substitutability and/or the existence of cross-price elasticities. The process looks at the way customers react to a supplier increasing its prices by 5–10 percent, while all other potential competitors' product portfolios and prices remain the same. If these competitors are able to sell more of their products as a result, they are regarded as part of the relevant market. If the price increase has no impact on how many products they sell, however, they are not. If Porsche raised its prices, for example, and Ford's sales figures were unaffected, this would indicate that the two suppliers were not part of the same market. If the demand for Ferraris rose instead, this brand would be seen as part of the same market as Porsche.

In terms of systematization, Porter's approaches provide a good basis for the following chapters, which deal with Western technology companies' current and future implementation of these strategies on B2B markets. This is a dynamic process because changes to the market, technical, and political environments repeatedly force companies to ask themselves which markets they are operating on and how they can achieve competitive advantages.

Advanced premium goods

Before we turn to the new ways of implementing the above-mentioned competitive strategies in Chapters 3 and 4, let us first take a look at the current situation based on the example of some leading German technology exporters. Their situation is typical of their Western competitors, and what applies to a company like Siemens also applies to General Electric, ABB, or Alstom. Germany has a number of large technology companies, including Volkswagen, Siemens, Daimler, Bosch, and BASF. More important for the German economy, though, are companies with sales

of between €50 million and €1 billion. The abovementioned *Hidden Champions* brought some of these small- and medium-sized companies sudden worldwide visibility – such as Baader (fish-processing technology), Herrenknecht (tunnel-boring machines), or Putzmeister (concrete pumps). The German companies that *Hidden Champions* focuses on recorded average sales of €324 million. Each company has a workforce of just over 2000 and most operate on B2B markets.

Three aspects have defined German technology companies' competitive strategies over recent decades. First, they pursue a differentiation strategy and/or aim for quality leadership. A cost-leadership strategy is unusual, and a price-leadership strategy even more so. Simon showed in his analysis of Germany's hidden champions that these companies' prices were significantly higher than those of their competitors. The managers questioned saw this as their biggest competitive disadvantage. This is a result of underlying factors in the German economy because a large proportion of the staff of these small- and medium-sized companies work in Germany, where wages are high. However, the companies readily accept the competitive disadvantage and are even proud of their prices. This is fully in line with the attitude adopted by differentiation strategists. Rather than seeking to stand out by offering low prices, these suppliers use high prices to underline the quality of their products.

Second, German technology companies focus their quality efforts on material goods, in the narrower sense of the term. Although they have also worked on improving their delivery times and maintenance service in recent years, these aspects are seen more as extras. The focus remains on the product technology. Referring once again to the analysis of hidden champions in Germany, the managers questioned indicated that product quality was the main competitive advantage for their portfolios.

Third, these companies have extended their quality leadership by making gradual improvements rather than trying to change competitive structures with revolutionary innovations. This ties in with the differentiation between *incremental* and *radical* innovations that William Abernathy introduced in 1978 and with the separation of *sustaining* and *disruptive* innovations that Clayton M. Christensen highlighted in 1997. Incremental and sustaining innovations improve an existing product based on established skills. Radical and disruptive innovations find new ways of solving customer problems and often call into question a company's perceived core skills. Many Western technology companies entered the market with a disruptive innovation – for example, Siemens when it invented the dynamo or Bosch with its engine spark plugs. Thanks to their engineers' perfectionism, these companies' engineering departments later primarily focused on improving existing technical products. This does not normally create any new demand, as Kim and Mauborgne suggest in *Blue Ocean Strategy*. Since many German technology companies have been around for some time, this also ties in with Christensen's research results. These results show that most disruptive innovations originate from start-up companies.

Based on the above characteristics, we will refer to the products of traditional Western technology companies as advanced premium goods. These focus on the physical product that has competitive advantages because of its technology leadership and the top quality of its other properties. advanced premium goods are generally successful on markets that offer products from a large number of competitors. In this case, suppliers adopt a differentiation strategy. Examples include premium models from German automakers Mercedes and BMW, cell phones from Apple, IT network elements from Cisco, and high-speed trains from Alstom. Some advanced premium goods suppliers, though, also adopt a niche strategy. König & Bauer Gruppe AG in Switzerland, for example, has a 90 percent share

of the market for high-security presses for printing bank notes. It has no serious competitors in its segment. The same goes for Gerriets, a German manufacturer of electric curtain systems for large stages worldwide.

Advanced premium goods suppliers' growth is based on the expansion of product-related services such as repair and maintenance or, in line with the Ansoff matrix, on the option of product development. This involves unlocking new product areas that also focus on advanced premium goods and therefore require no strategic changes at the company. One example of this is GEA, a world-leading supplier of industrial air-conditioning equipment. GEA recently acquired WTT, a manufacturer of high-quality plate heat exchangers that are also used in air-conditioning systems.

New strategic challenges

Two trends highlight the challenges facing advanced premium goods suppliers. The first is the global development of demand, and the second is changing competitive structures. Neither takes place overnight. As a result, neither forces companies to make rapid adjustments. They are established, long-term developments that give the management team sufficient time to adapt.

Global demand is linked to changes in the GNP of the national economies referred to in Chapter 1, especially China and India. The strong growth in emerging markets and developing countries is based in particular on the increased spending power of people whose income are still significantly below the average in industrialized countries. These new customers have an increasing amount of money, but they put price before quality when buying products. The relatively low prices the new customer groups are prepared to pay impact the supplier companies that are looking to tap into these growth markets. These companies' purchasing decisions reflect their customers' quality and

price requirements. In many cases, they expect their suppliers to offer prices 70–80 percent lower than those for existing products. Technology companies with advanced premium goods aimed at quality-oriented customers do not satisfy this demand, either as suppliers or as manufacturers. The demand in emerging markets and developing countries is growing far more strongly among customers with relatively low spending power than in the premium segment. Consequently, the market share of advanced premium goods will fall. This will weaken the global competitive position of the companies manufacturing these goods.

New suppliers from emerging markets and developing countries, on the other hand, see these developments in their domestic markets as an opportunity to grow. In terms of competitive strategy, they normally use process innovations that create cost-benefits to gain a foothold in the market. In some cases, their only "innovation" is to have cheap labor carry out production processes for which established companies use expensive machinery. The new suppliers use these cost-benefits to meet – or exceed – customers' price expectations. The quality of these new products, the speed of delivery, the advice available, and the repair service offered are normally poor, though – at least to start with. New suppliers often copy products or parts of these products. Although they look like the original at first glance, their stability and service life are inferior. New suppliers initially base their concept on creating cost-benefits and are not in competition with established advanced premium goods suppliers.

They do, however, use their profits from the new growth markets to close the quality gap. In other words, they adopt the strategic approach of outpacing. Toyota adopted this approach many years ago. The first Toyotas imported to Europe in the 1970s were the basic and compact Corolla and Carina (see Figure 2.5). Established suppliers and mid-range customers made fun of these cars due to their

Figure 2.5 The first Toyota Corolla in Germany (left) and the Toyota Lexus today (right)
Source: Toyota

unattractive appearance and low prices. Just 15 years later, the situation had changed. Western managers descended on Japan in droves to learn how to produce high-quality cars efficiently. By this point, Toyota had already improved the quality of its vehicles to such an extent that large numbers of customers in Europe and the United States were opting for its cars. Starting in the small car segment, this development subsequently extended to mid-range models and, ultimately, to premium vehicles and delivery trucks. Despite the damage to its image in recent years, Toyota has become one of the world's most valuable automotive brands. In 2010, it was in fifth place in the Fortune Global 500.

This success story is now serving as an example for Indian automakers such as Tata Motors and Chinese manufacturers such as Great Wall Motors, Geely International, and Shanghai Automotive Industry Corporation (SAIC). Last year, SAIC sold far more cars than BMW. In China especially, there are many more examples of the outpacing strategy being applied successfully. In addition to ZPMC and Huawei, both of which have rapidly implemented this approach, it is also worth mentioning Suntech. This company has taken over from Q-Cells in Germany as the world's leading solar cell manufacturer. Investments in research and development

activities are a further indicator of the effort that companies in emerging markets and developing countries are making to improve product quality. Investments have grown particularly strongly in China – by an average of 23 percent since 2000 (see Figure 2.6). This increase applies not only in absolute terms but also in relation to GNP. With an estimated R&D investment at 2 percent of GNP, China has not yet reached Germany's investment level of 2.7 percent. Yet it has already overtaken countries such as the United Kingdom.

In 2009 – for many companies a year of crisis – Huawei raised their investment in research and development from 8.4 to 8.9 percent of their annual turnover, which had even increased during this critical year. In comparison, most German technology companies had to considerably reduce these investments in 2009, even if not to the same extent

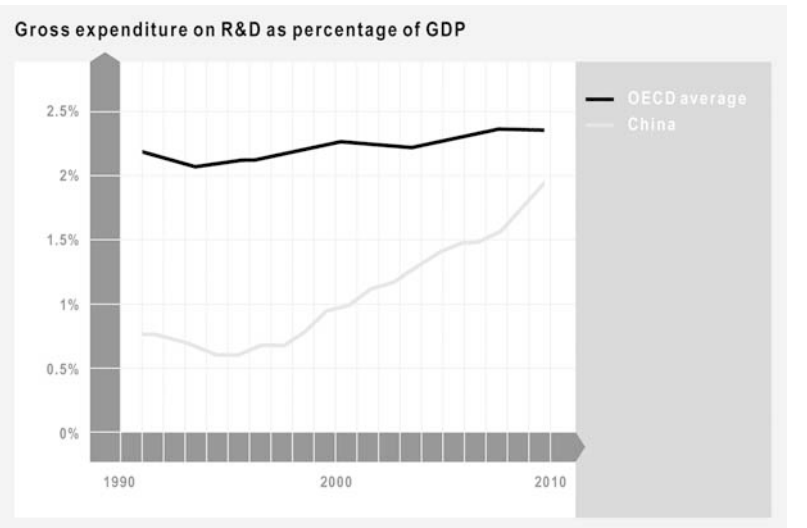


Figure 2.6 Expenditure on research and development activities as a percentage of GDP

Source: "Gross expenditure on R&D, China" from OECD (2010). OECD Science, Technology and Industry Outlook 2010, OECD Publishing, http://dx.doi.org/10.1787/ sti_outlook-2010-en

as their turnover decrease. A study by Booz & Company shows that the European R&D budgets overall were cut by 0.2 percent in 2009; in the United States even by 3.8 percent. Hewlett-Packard illustrates this trend quite strongly: since 2005, its investment in research and development has continuously been reduced, so that by 2009 it had come down to 2.5 percent of HP's annual turnover.

The amount spent on research and development also has an impact on the number of patent applications. China once again plays a prominent role here, with the biggest increase in patent applications of any country. In Germany, just as in other European countries, the number of patent applications has decreased. The authors of a 2010 study by the Thomas Reuters media group predict that China will have more patent applications than any other country in 2011 (see Figure 2.7).

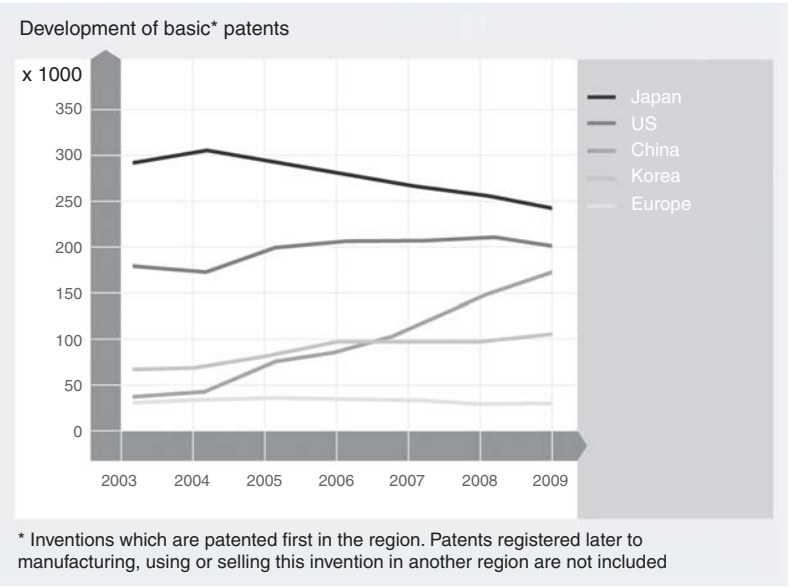


Figure 2.7 Development of national patent applications
Source: IP Solutions business of Thomson Reuters (2011). Patented in China. http://ip.thomsonreuters.com/chinapatents2010/China_Report_0810.pdf. 05/20/2011

Nevertheless, the quantity of patents cannot be equated with their quality. The high bonuses Chinese companies currently pay their employees for patent applications produce innovations that are not necessarily viable. Thanks to its improved products, however, it is clear that China has outgrown the role of cheap supplier and imitator. It, too, can now win over customers with higher quality requirements. Other companies in emerging markets and developing countries will follow the successful example of ZPMC, Huawei, and Suntech and achieve a product quality that makes them serious competitors for established advanced premium goods suppliers. These companies will then no longer serve only segments with limited spending power in their domestic markets, but also Western technology companies' established customers. They will be particularly successful where high-end customers do not feel any sense of loyalty toward their existing Western suppliers and acquire a taste for cheaper products. We will return to these risks in subsequent chapters.

Some new competitors are taking a shortcut to higher quality by buying established Western technology companies. Geely's takeover of Volvo is a good example of how a producer from the new markets – in this case a Chinese automaker – can advance to become a prominent company. Another example is Lenovo's acquisition of IBM's PC business. There have also been takeovers at a number of small- and medium-sized technology companies in recent years that have gone largely unnoticed by the general public. One example in Germany is the Shenyang Machine Tool Corporation's takeover of Schiess GmbH, a manufacturer of large boring and milling machines with a 150-year history. The same fate befell Waldrich Coburg, the world market leader in this area and Schiess GmbH's direct competitor. The buyer in this case was the Chinese mechanical engineering company Beijing No. 1 Machine Tool Plant.

The ChinaVenture Group, a Beijing-based investment consulting firm, calculates that China invested some $82 billion in foreign takeovers in 2010.

Although China's economic growth is the most striking, the abovementioned trend also extends to other developing countries and emerging markets. Here, too, companies are using cost-benefits to successfully target new growth segments. They are improving the quality of their products through ongoing investment and are quite prepared to take over Western high-end suppliers in the process. In India, for example, Suzlon boosted its wind turbine business in 2007 by taking over Repower, a leading German wind turbine manufacturer. Tata Motors' takeover of Jaguar Land Rover in 2008 attracted great media attention. For the Tata Group, however, this US$ 2.3 billion acquisition was a relatively small transaction, at least compared to its takeover of Corus. The Indian company paid US$ 12.2 billion for the British steelmaker in 2007. We could also add examples from Brazil, Mexico, Turkey, and Russia to this list of companies that are enjoying strong global expansion.

In reference to China and Russia in particular, the West is quick to point out that state support facilitates their companies' growth. This may well be true in some cases, but it is primarily these companies' above-average profitability that gives them the financial resources for investments. A 2011 study by the Boston Consulting Group highlights this point (see Figure 2.8). It focused on 100 companies from rapidly developing economies that have established themselves as competitors of Western companies on the world's markets. The study shows that, between 2000 and 2009, the sales of these "global challengers" grew on average at three times the rate of their "global peers" from industrialized countries. Their profits were also more than 50 percent higher.

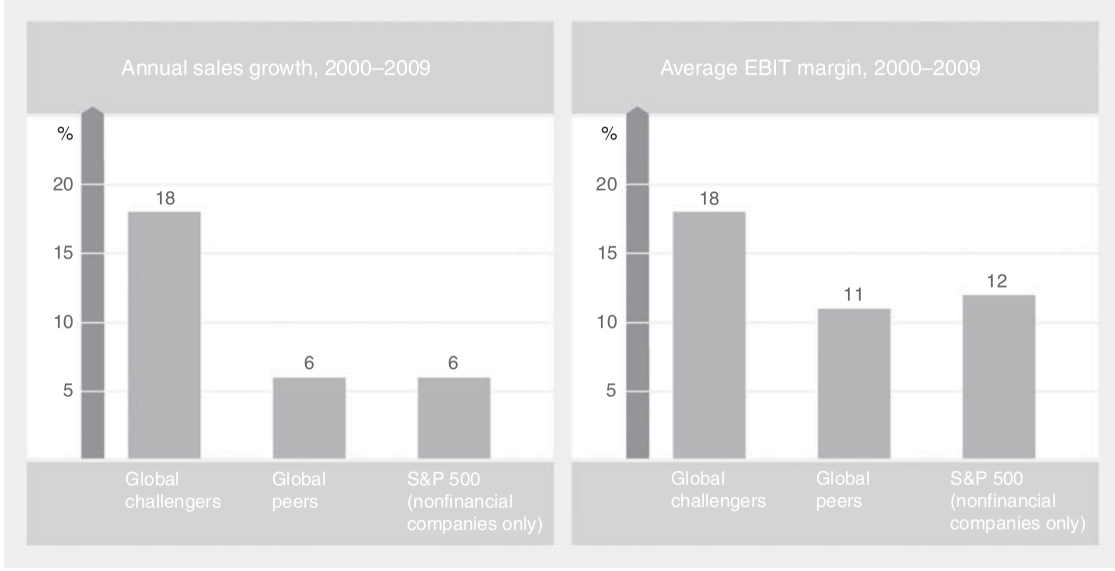


Figure 2.8 Sales and profits of global challengers and global peers between 2000 and 2009

Source: The Boston Consulting Group (2011). Companies on the Move. http://www.bcg.com/documents/file70055.pdf. 05/20/2011

Ways to resolve the dilemma

Porter's generic strategies provide a suitable basis for identifying possible competitive strategies for overcoming the abovementioned challenges. As far as the supplier of advanced premium goods is concerned, there are two main options:

1. To compete with the new low-cost suppliers for cost leadership. This means offering products that do not match the quality of their established products but can compete with the new suppliers from emerging markets and developing countries on price thanks to more economical cost structures. We call this approach no-frills technology (NFT).
2. To continue to pursue the strategy of quality leadership but switching the focus from material goods to complex services. The high level of complexity is particularly important because the associated skills are more difficult for competitors to copy. We will call this option complex service solutions (CSS).

Both NFT and CSS are currently atypical approaches at Western technology companies. They will, however, become more important in the future, and there are already examples of companies with experience in these approaches. Some of these companies will be used in Chapters 3 and 4 to take a closer look at the opportunities and pitfalls of both methods.

All this does not mean that suppliers with a traditional strategy based on advanced premium goods can no longer be successful. In niche markets involving a great deal of research – such as the manufacture of molecular microscopes or key optical components for wafer steppers (machines for the production of tiny wafers) – a company like Carl Zeiss will be able to maintain its leading position for quite some time without any major strategic

adjustments. Other technology companies, though, are seeing their competitive advantages disappear on globalized markets. The following chapters are aimed at them.

Key statements

- The focus of competitive strategy is on obtaining competitive advantages. Based on Porter's generic strategic options, suppliers can stand out in a market either by offering cost-benefits or through quality-related differentiation.
- A large number of Western technology companies occupy a leading position in their markets by offering advanced premium goods that combine advanced technology with high product quality.
- Customer groups from rapidly developing economies that are not willing to pay for premium products are driving the strongest economic growth worldwide.
- New competitors from rapidly developing economies are serving these groups; some of them will address customers in the premium segments later.
- NFT and CSS are two competitive strategies that enable Western technology companies to meet the challenges of current market developments.

CHAPTER 3

No-frills technology

Siemens Cerberus ECO

Siemens Building Technologies (SBT) entered the building technology market in 1998. Since then the company has specialized in products for building comfort, electronic security, and fire safety. They are available as both standalone items and complete solutions for major building complexes such as airports and power plants. The Fire Safety & Security Products division generated sales of approximately €6.3 billion in 2007 and just met the Group target of 14–16 percent for return on capital employed. The product portfolio of this division includes fire alarms and smoke detectors that can be mounted on ceilings and walls, information and water management systems, and management panels that incorporate information from all areas of a building. In emergencies, central contingency measures can be initiated from these points. SBT has established a product range in this area under the brand name Sinteso – it is the acknowledged leading system solution in terms of quality in business-to-business markets. Sales activities focus on Western Europe and the United States. Up until a few years ago, the company also received orders from institutions in other countries, including institutions in China. In these cases, responsibility for sales lay with local companies established by Siemens as cross-divisional units in more than 190 countries worldwide. These local companies were also responsible for providing after-sales service for fire detection products. Sinteso generated the lion's share of its profits

from these services, particularly maintenance, repair, and the spare parts business.

For decades, SBT's main competitors on this market were American companies such as General Electric, UTC, and Honeywell. From 2000 onward, however, the market situation changed. Economic growth in the BRIC countries led to the construction of a large number of new industrial and commercial buildings, particularly in China. The resulting growth in demand for building technology led to the development of regional suppliers as competitors. One such rival was the then independent Chinese manufacturer GST. Although the products of these local manufacturers were inferior in terms of technology and quality, they nonetheless met national safety regulations. What is more, they were up to 50–60 percent cheaper. Naturally, SBT started to worry that in just a few years these new local competitors would grow into companies that – after an initial phase of regional concentration – would expand into the international markets.

In 2007, the SBT management team decided to do something to combat the threat that this development posed to their business. The plan was to launch a new product line in China that could compete with regional suppliers in terms of price and performance. It was with this aim in mind that SBT founded a business unit in Beijing, China. Local engineers who were familiar with the specific Chinese requirements were hired to develop the products. Only in the very beginning were these Chinese employees supported by more experienced colleagues from the European headquarters in Zug, Switzerland. After that, responsibility for developing a product range in line with the local market requirements remained with the colleagues in China. The same setup was also applied later to production and the entire product management, including marketing.

The new Chinese product range was designed to meet only basic local requirements. The smoke detectors could detect

fire, trigger alarms, and initiate extinguishing measures. Compared to Sinteso products, however, the Chinese management panel offered only a limited overview of the various rooms in a building and false alarms could not always be avoided. In contrast to the Sinteso system, expanding the Chinese equivalent also required a large amount of time, effort, and money. These differences to the Sinteso products were due in part to the ambitious cost targets set for the new Chinese product range. They also represented, however, a conscious decision to create quality differentiation between these products and establish Sinteso as a provider of premium solutions.

In coming up with a designation for the new product line, SBT drew on the name of a well-known Swiss company that SBT had taken over a few years earlier – Cerberus AG. The marketing strategists at SBT discovered that Cerberus was a brand known outside Europe that enjoyed a good reputation. Therefore, they branded the new products for the Chinese market as Siemens Cerberus ECO. This was how the business entity originated; today it has around 400 employees.

Having decided to limit the sale of Cerberus ECO products to China in the first instance, the SBT management team chose not to employ the existing direct sales force via its national company, Siemens China Ltd. in Beijing. This decision was based on the fact that the Cerberus ECO products were to be sold primarily in cities in the western provinces of China, an area in which Siemens China Ltd. had little representation. Instead, SBT preferred to use the more extensive sales channels of small Chinese distributors and value-added partners (VAPs) to address installers serving general contractors in the building business (see Figure 3.1). SBT held product training courses for the employees of the distributors and VAPs, providing information on sales, maintenance, and repair.

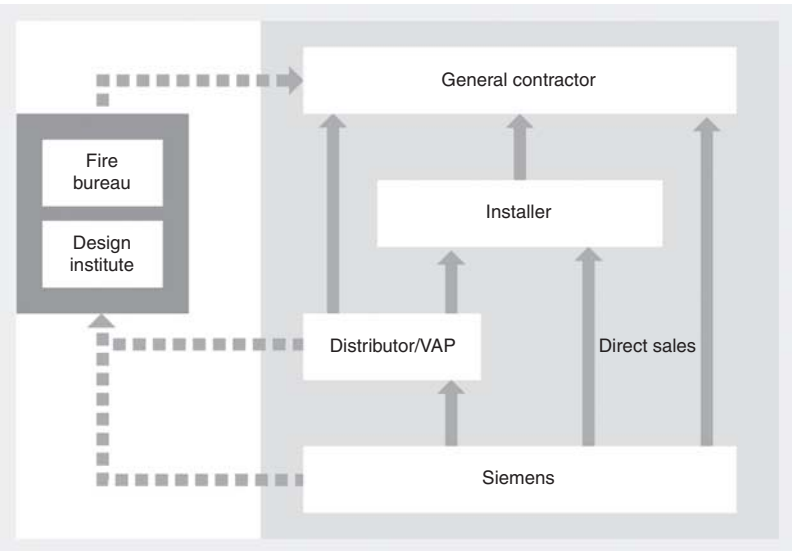


Figure 3.1 Distribution structure for Cerberus ECO in China
Source: Compiled by the author (according to Siemens AG)

The Cerberus ECO business met initial expectations in terms of both revenue and results. At the end of 2010, around 250,000 fire detectors were sold in China. Nevertheless, there were some pricing issues that had to be resolved in the first few years. The prices customers were willing to pay had to be aligned with the market position of the new brand, as well as with the profit expectations of SBT and its Chinese sales partners. Ultimately, the strategy proved such a success that SBT started to consider whether it made sense to market these Chinese fire detection products in other countries, too. This idea gained momentum in the spring of 2010 when SBT's US competitor UTC announced that it was taking over the Chinese manufacturer GST. In 2010, SBT started selling Cerberus ECO products in Indonesia and Vietnam. In 2010, plans to launch the range in Brazil and Russia were also being considered.

At first glance, the development of the Cerberus business may not seem as spectacular as the development of ZPMC illustrated in Chapter 1. This may be because the global

success of an all-Chinese technology company like ZPMC is still considered unusual today. It may also be because of the extraordinary speed at which ZPMC captured such a high market share. From a strategic perspective, however, the market launch of Cerberus ECO is more remarkable than the case of ZPMC. Essentially, the latter is merely another successful implementation of a tried-and-tested competitive strategy that has existed for centuries. By contrast, the strategy followed by SBT with its Cerberus ECO product line was guided by far fewer examples.

This is partly because, in the past, Western technology companies have tended to react to the rise of Asian competitors with a mixture of arrogance and helplessness. They laughed at the supposedly inferior quality of the products, while seeming to accept the above-average growth recorded by the new competitors as inevitable. The Cerberus ECO case documents a different response. It shows how Western technology companies, such as Siemens, have abandoned their defensive stance and are instead challenging the new competitors in areas where they supposedly have their biggest competitive edge, namely through their cost advantages and by developing products more suited to the demands of these markets. In this case, Siemens – or SBT – has veered away from the concept of setting itself apart from the competition through high-quality, sophisticated technology. Rather than giving up its premium products, SBT decided to take a two-pronged approach and launched cost-effective no-frills products on the market at the same time. By moving into this area of business, SBT is going head-to-head with companies that, from a Western perspective, are traditionally seen as having an unbeatable cost position.

In order to take this step, the company had to scrutinize other key principles in its existing business model. As a result, the after-sales services business was entrusted to Chinese distributors in the Cerberus ECO case. This was a remarkable step, because it was in this area in particular that

the Sinteso premium business recorded high profits. With the Cerberus ECO products, on the other hand, the profit had to be generated through initial sales. Given the low prices that Cerberus ECO customers tended to be willing to pay, this posed a challenge. To counter the cost pressures and to meet the specific demands of the Chinese market, even product development and marketing-related product management activities were relocated to China. In this way, Chinese colleagues took over value-added processes that many Western technology companies had traditionally provided from their home countries. What is more, the marketing activities for the Cerberus ECO products did not draw on the existing resources of the local Siemens company. Instead, Siemens SBT developed new partnerships with external distributors who were trained at SBT's expense. This dual strategy meant that these new partners and the sales force of the Chinese Siemens branch dealing in Sinteso products might actually target the same customers. Such cases did indeed occur in the beginning.

Nevertheless, despite the initial difficulties, the Cerberus ECO case was judged a successful pilot project for Siemens AG. A series of similar no-frills technology (NFT) projects followed. In 2010 alone, a further 100 projects with a similar competitive strategy were launched within the corporation under the internal title SMART (simple, maintenance-friendly, affordable, reliable, timely to market). Although the SMART projects affect different areas of technology within the Group, China and India represent two regional focal points.

The business-to-consumer analogy

The concept of premium product suppliers using less-sophisticated products to appeal to customer groups with a lower willingness to pay is not new. In the consumer goods industry, many companies market parallel brands

within a single category to cater to the distinct regional and social profiles of their consumers. In the diaper market, for example, Procter & Gamble offers not only the expensive Pampers brand but also the cheaper Luvs. In Germany, ice cream manufactured by Unilever is marketed both under the premium brand name Langnese and as a dealer's brand in discount supermarket chain Lidl. Many banks have launched Internet-based subsidiaries to appeal primarily to younger clients, a segment for which the high fees of consultancy services are simply not worthwhile. By taking over Norisbank, Deutsche Bank has built up a brand specifically designed to attract those customers who have fewer funds at their disposal. In addition, work is currently under way to position the recently acquired Postbank between Norisbank and the premium brand Deutsche Bank. In the wake of the success of Ryanair, easyJet, and similar companies in using low fares to attract new customer groups in Europe, Lufthansa founded its own no-frills European airline in the form of German Wings. The Accor hotel group is one example of a particularly comprehensive strategy for using segment-specific brands to attract a very diverse range of customers. Its portfolio covers the full spectrum, ranging from the luxurious Sofitel hotels to low-budget options such as Etap and Formule 1 (see Figure 3.2).

As well as being of general interest, these examples offer key insights to managers in other industries. That said, they cannot really be translated to the B2B sector described earlier, where there are two key differences. In the first instance, we are dealing with markets in which clients enjoy a high degree of market transparency. They are better informed about suppliers and their products than B2C customers. While very few Deutsche Bank customers are aware that the company also operates Norisbank, it is unrealistic to think that a manufacturer of graphic paper machines like Voith Paper would be able to conceal a cheaper second brand from its pool of around 300 potential customers worldwide. Secondly, for customer and supplier alike, technology plays

Figure 3.2 Multi-brand positioning in the Accor Group
Source: Accor Group. Brand portfolio. http://www.accor.com/en/brands/brand-portfolio.html. 05/09/2011 (all rights reserved to Accor)

a key role in B2B products. The technical design of the products not only serves as a competitive advantage and cost driver but also represents the supplier's core identity.

Old technology

Regarding technology-driven B2B markets, there are basically three options to meet low-cost requirements. We call them old technology, de-featured premium products, and frugal engineering. The strategy of using older product versions to appeal to new customer segments can be pursued in two ways. On the one hand, production can be re-launched. On the other hand, existing products can be remarketed. The latter involves trading in used products, a sector that seldom features in media reports or scientific studies. Nonetheless, the relevance of this market has grown because of the numerous new production companies in Asia's growth markets. In the mechanical engineering sector alone, global sales volumes for second- or third-hand equipment are currently estimated to be over €100 billion annually. The RESALE Trade Fair is a good indicator of the dynamism that exists within this sector, with over

Figure 3.3 RESALE Trade Fair website

Source: RESALE:BIZ. Marketplace for used machinery. http://www.resale.biz/index.php. 10/10/2010

10,000 experts from more than 100 countries visiting the 2010 event held in Karlsruhe, Germany (see Figure 3.3).

According to event organizers, many prospective customers come from emerging and developing countries. They choose to visit the largest show of its kind in the world because it is where the buyers can find machines that – due to their reduced cost and simpler technical design – are better suited to the requirements in their home countries than brand new products. Previously, it was the dealers who dominated the used products market. Now, that mantle is increasingly being passed on to the manufacturers themselves. Over the past few years, one of the leading global manufacturers of high-quality machine tools, Gildemeister, has used its subsidiary DMG to expand its marketing activities in the used equipment sector. The DMG portfolio now features over 300 lathes and milling machines, with customers able to stay updated via the online platform Twitter.

Figure 3.4 Short-nose truck from Mercedes
Source: E-Mags Media GmbH. Mercedes Trucks: Schwere Sterne. http://www.mercedes-fans.de/klassik/klassik_artikel/id=1109/start=2. 12/01/2010

Nonetheless, re-launching the production of older, less technologically complex and more affordable machines is still the route most manufacturers choose to take when it comes to catering to up-and-coming markets in Asia, Africa, and South America. A good example in the heavy vehicle sector is the legendary short-nose truck from Mercedes, still considered to be the epitome of toughness in truck design (Figure 3.4).

Introduced in Western Europe in the 1950s, these trucks were subsequently removed from the market there in the 1970s. While new models were being launched on Western markets, modified versions of the truck continued to be produced in developing and emerging countries until the end of the last century. This classic truck, with its robust technical design, still turns up occasionally in these regions.

As in other sectors, older truck models are often manufactured in cooperation with a partner company in the respective target markets. As early as the start of the 1960s, Tata in India was already manufacturing Mercedes trucks. It later marketed only slightly modified versions of these models under its own name. In this type of collaboration, the premium product supplier provides pre-manufactured

components as completely knocked-down (CKD) parts sets for subsequent assembly. In some cases, the partner company is also granted a license to manufacture the parts. MAN – one of Mercedes' competitors in the truck market – awarded licenses to leading Chinese heavy goods vehicle manufacturers for several hundred million euros for cabins, motors, and axles. MAN also acquired 25 percent of Sinotruck's shares, forming what was at that time a unique relationship between a major Chinese firm and a Western company.

Mechanical and plant engineering company SMS Meer, on the other hand, opted not to enter into this type of partnership. Since October 2010, the production of mature technology machinery has been located in China in a factory completely owned by SMS Meer. This brings considerable cost-benefits for the company and enables them to enter the Chinese market of customers who cannot afford the latest high-tech machines from Germany. They are considered particularly reliable precisely because their technical design has been tried and tested over many years.

Another global market manufacturer of machines came up with an alternative use for its old plant in Asia. In the 1990s, they executed technology transfer agreements with several Chinese companies, giving them the necessary know-how to independently manufacture and market the previous generation of their machines. From 2001 onward, this Western company stopped manufacturing the older machines for customers outside the Chinese market, and transferred their production and sales operations completely to its Chinese partners. No direct payment was received in return. Instead, an agreement was reached with the relevant Chinese state authorities, who promised to order a certain number of the more expensive, higher performance machines of the Western machinery supplier. This promise was kept.

One other approach is to deliberately opt out of keeping pace with technological progress altogether in terms

of product design. In 2010, Ron Adner and Daniel Snow published a feature on this *bold retreat strategy* in *Harvard Business Review*. They offered the pithy example of clock and watch manufacturers who, at the beginning of the 1970s, decided not to embrace the march of technology in the form of quartz and digital models. Instead, they continued to produce mechanical timepieces. For some of them, such as A. Lange & Soehne and Piaget, this product positioning continues to prove extremely profitable to this day. There is, however, no known example of a *bold retreat* among Western quality leaders in technology-oriented B2B markets. This approach would conflict with the self-image of those companies. What is more, there would be little to gain if a company such as Siemens or Bombardier were to launch steam locomotives on today's railroad market, particularly because the decision to purchase such goods does not involve the same emotional investment as the acquisition of a B2C product.

De-featured premiums

In addition to the sale of old technologies, the B2B market also offers a second opportunity for implementing an NFT product concept: de-featured premiums. At first glance, this appears a sensible and obvious approach. A quality leader reduces the performance features of current products and sells the pared-down version at a lower price. Taking another example from the B2C sector, Cartier is just one of a number of companies that brings new models onto the market each year. The casings are normally made of solid gold. For customers who cannot afford such a piece, however, Cartier also offers models that are gold-plated or made of steel. These cost up to 60 percent less. B2B customers who buy technical products in BRIC countries expect this difference in price levels. Putting the de-featured premiums concept into practice for B2B products is, however, more complex than simply deciding whether to gold-plate a watch or not.

The price reduction process is relatively straightforward when it comes to parts that do not define the technical core of the product. That is why manufacturers of high-quality railway trains, such as Bombardier, Siemens, and Alstom, are able to fit lower grade seats and floor coverings in car interiors. Certain performance features can also be pared back in the after-sales sector. Indeed, for some time now it has been standard practice for technology companies to offer differing levels of service. The speed at which replacement parts are supplied and the length of guarantee periods are only two examples. Yet one question remains: For the product as a whole, can this type of de-featuring generate adequate cost and price reductions for NFT?

The healthcare sector of Siemens AG in China, for example, manufactures the ESSENZA range of superconducting magnetic resonance imaging (MRI) machines (see Figure 3.5). They are based largely on the technology used in the latest Siemens premium products; at first glance, the Chinese machines look similar.

At the same time, the price and costs involved are far lower than those of the premium products. In order to

Figure 3.5 Siemens Magnetom Standard (left) and Siemens Magnetom ESSENZA (right)
Source: Siemens AG

stay within the narrow cost parameters, the focus in China is to realize savings not only on external features like the plastic housing but also on core technical elements. The long fixed spine arrays required for spinal examinations, for example, have been shortened and fixed to the machine to save space. In addition, the three separate computing units usually fitted to a superconducting MRI were reduced to two. However, certain functions of the third system had to be integrated into the two remaining ones. This required a new design. Even though the machines' features are more limited, development work was still required on the core technical elements to guarantee their functionality. This – and the associated approval process – took almost four years.

As this example illustrates, it is often the case that the de-featuring of high-tech products is not achieved simply by removing certain elements, but by finding an alternative means of fulfilling the technical function of a specific product component. As with product innovations, this also involves development costs. Moreover, potential savings in procurement and production costs must be offset against the costs generated by restructuring activities and the increased level of complexity. This can occur if, for example, the product quality of items from new suppliers must be examined. These cost increases can affect all stages of the value-added process, including less immediately obvious overhead expenses in purchasing, warehousing, and after-sales services.

Of course, the technical functions of some premium products simply cannot be modified. For reasons of stability, heat-resistant materials like those used in gas turbines cannot be reduced arbitrarily or replaced by cheaper versions. In contrast to the example of the Cartier watches, cutting back on complex technical components does not always go hand-in-hand with cost reduction. If a product differs from a premium model only in its pared-down functionality,

there is also the risk that it will not ultimately fulfill the requirements of NFT customers.

Presta – part of ThyssenKrupp AG and a leading supplier of car steering systems – experienced this for itself. Given the rapid growth of car manufacturing in China, Presta decided to set up a local production facility for de-featured premiums in 1999. The only differences between these and the models made in Germany were certain material properties and design modifications. For Presta, the new location alone brought cost-benefits, allowing the company to eliminate import duties and the long transport distances between Europe and Asia. The steering system made in China soon attracted customers. Yet these ultimately proved to be only the Chinese subsidiaries of Western automotive companies. Exclusively Chinese manufacturers such as BYD were simply not interested in the Presta systems. It was only in 2004 that Presta began attracting domestic Chinese customers. They did so by developing products that were specifically geared toward the needs of Chinese automakers and by ensuring greater supply flexibility.

Other technology companies have had similar experiences. These cases demonstrate that a specific set of requirements has evolved among new customers in developing and emerging countries. At the same time, their growing economic strength is putting established Western suppliers under increasing pressure to fulfill new customer expectations. For these companies, it may be necessary to fundamentally challenge existing product concepts in favor of a new path defined by frugal engineering.

Frugal engineering

Frugal engineering – and the associated terms *frugal innovation* and *reverse innovation* – have been in circulation in relevant literature for approximately two years. In fact, these

terms describe strategies that have been around in practice even longer. The Cerberus ECO case is just one of many examples of frugal engineering. At General Electric, for example, this approach was already in place prior to 2008; and the Japanese Daikin Industries, producer of home air conditioners, have joined the low-cost club as well. The basic principle is to design products as simply and cost-effectively as possible, and to meet the specific demands of the relevant target markets. This does, however, require market research – an unfamiliar activity for traditional technology companies. Normally, such companies base their demand analyses on comprehensive customer communication. Customer input and suggestions from the company's own sales and after-sales staff provide research and development departments with key ideas on how to revise existing products and how to develop new ones. In contrast, innovative NFT is designed to appeal to segments that are not yet among the company's existing customers.

If companies such as Siemens or General Electric are keen to share in the high-growth potential for medical equipment in China and India, then it makes little sense to carry out demand analyses only in large hospitals and clinics. More important are the rural doctors and representatives of small, often mobile medical centers who care for the majority of the population. These companies must take note of a range of key factors, including financial means, education, and training standards, willingness to embrace innovations, typical patient treatment profiles, and the availability of hygienic working conditions. This is the only way to create NFT products that differ from the premium models. General Electric, for instance, has enjoyed great success with portable ultrasound equipment designed to suit the needs of the widely scattered medical centers in India's provincial regions.

When it comes to innovations in the NFT sector, it seems obvious that the best location is one where developers

are familiar with the customer's language and culture, and where market conditions are most suitable. That is a key reason why a number of Western technology companies have intensified their R&D resources in the BRIC countries over the past few years. Siemens now employs over 16,000 engineers in China and India alone. In 2000, General Electric opened its largest medical research center worldwide in Bangalore, and was employing a workforce of 4000 there by 2010. In the early stages, the NFT development projects undertaken there were receiving support from the headquarters in the West. As in the case of Cerberus ECO, however, overall responsibility is also increasingly being shifted to the local developers. As with Cerberus, this type of situation is giving rise to internal conflicts among other Western manufacturers of premium products, too.

The same applies in cases where the premium supplier does not itself develop NFT, but instead acquires a company that already has products for the NFT markets; often, this means a small or medium-sized enterprise that is based in one of the BRIC countries and has successfully established itself there. From a market perspective, the NFT products made by these small- and medium-sized companies are not innovations. However, they are new to the company acquiring them, which creates a similar set of internal challenges. This is particularly true when the processes, regulations, and culture of the two companies Differ greatly. They must nonetheless be aligned to a certain degree.

If the autonomy of the acquired company – including production conditions, general etiquette, reporting structures – is curtailed too strongly, employees will generally become less motivated. This also cancels out any potential cost advantage gained through the acquisition. This, in turn, threatens the competitive strength of the newly acquired NFT. On the other hand, too much autonomy is equally risky. From the day of the acquisition, the premium product supplier bears the responsibility for the company it

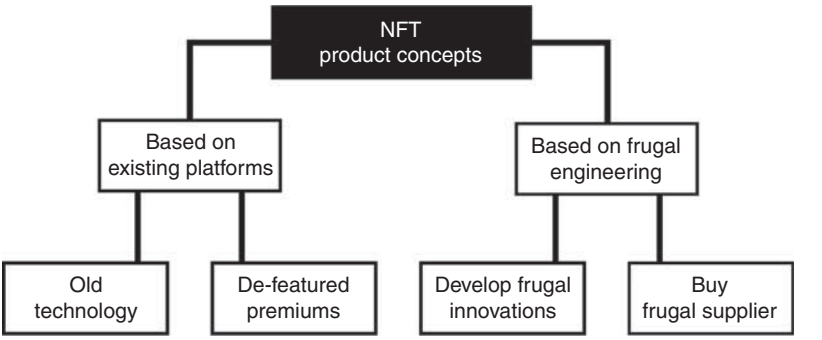


Figure 3.6 NFT product concepts for suppliers of premium products

has acquired. That responsibility includes potential financial losses and regulatory breaches that could damage the company's reputation or even result in legal action. In this respect, a certain fundamental tension exists between the traditional business division and the new unit with future responsibility for the NFT operations of the acquiring company.

Compared to the first two alternatives of old technology and de-featured premiums, frugal engineering seems to be the option that involves the greatest outlays and offers the lowest cost synergies. It is also the most likely to lead to tensions within the company as a whole. This may be the reason why many Western technology companies have so far shied away from this particular path. On the other hand, it nonetheless appears to be the most promising strategy for properly fulfilling the needs of new growth markets. For an overview of the NFT product concepts, see Figure 3.6.

The difficulty of differentiation

In launching NFT, quality leaders seek to target growth markets. Companies consider NFT to be an extension of their existing product portfolio. Hardly any company will

dare to give up its premium segments to focus exclusively on customer groups characterized by lower willingness to pay. Usually, two product sectors are nonetheless marketed in parallel. If one of the sectors regards the other as a threat, this may result in the types of tensions discussed above. The NFT sector sees traditional business unit influence and the restriction of autonomy as the main threats. On the other hand, premium sector players fear that NFT will hurt their image, and that it will lead to price erosion and product cannibalization.

Naturally, this type of departmental egotism is undesirable from the perspective of the company as a whole. Instead, company controllers expect to see cost synergies in cases where two product lines resolve similar issues for customers. They see this as an opportunity to unlock cost advantages that are simply not open to premium-only or NFT-only product manufacturers. Such cost synergies are obvious for old technologies and de-featured premiums, but less so for frugal engineering. In market terms, it is important that customers see the price differences between NFT and premium goods reflected in the product and its features. This insight is relevant to NFT, but it also draws on general marketing knowledge for the purpose of product differentiation. A cheaper model must appeal to customers who spend less. At the same time, it must also fail to meet the expectations of premium customers. See the Accor strategy demonstrated in Figure 3.7 as an example.

The consumer goods industry offers several well-known examples of the problems involved in simultaneously marketing top-end and more affordable products. One of them is from Procter & Gamble at the start of the 1990s, when it faced the prospect of increased competition from aggressively priced dealer's brands on the diaper market. The company planned to respond to these lower priced competitors using the existing Luvs brand combined with a significant price reduction. However, the differences

Figure 3.7 Accor luxury hotel Sofitel (left) and Accor low-budget hotel Etap (right)
Source: ESMT CS

between Luvs and the Pampers brand – marketed as a premium product – were too small. In the end, this divergence resulted in declining sales for Pampers and a drop in profits across the entire product segment. Procter & Gamble subsequently took steps to make the differences between the two product lines more distinct and removed quality features such as handles on packaging from Luvs products. From then on, the Pampers brand was the first to feature any new innovations. Pampers products became less bulky; Luvs did not. Similarly, the Pampers – not the Luvs – fit was adapted to better accommodate the shape of babies' bodies and the Pampers material was modified to be gentler on the skin.

Another example – this time from the mechanical engineering industry – is Krones AG, a *hidden champion* based in Neutraubling in southeast Germany. The company is a world leader in beverage bottling equipment (see Figure 3.8). Similar to Siemens Building Technologies, Krones became aware some years ago of an increasing number of new suppliers in the industry. These companies catered primarily to the lower end of the market in rapidly growing BRIC countries. The Krones executive board assumed that sooner or later these companies would intensify competitive pressure on their high-quality products and decided to tackle this trend head-on. In 2002, Krones acquired a share in the Italian bottling company

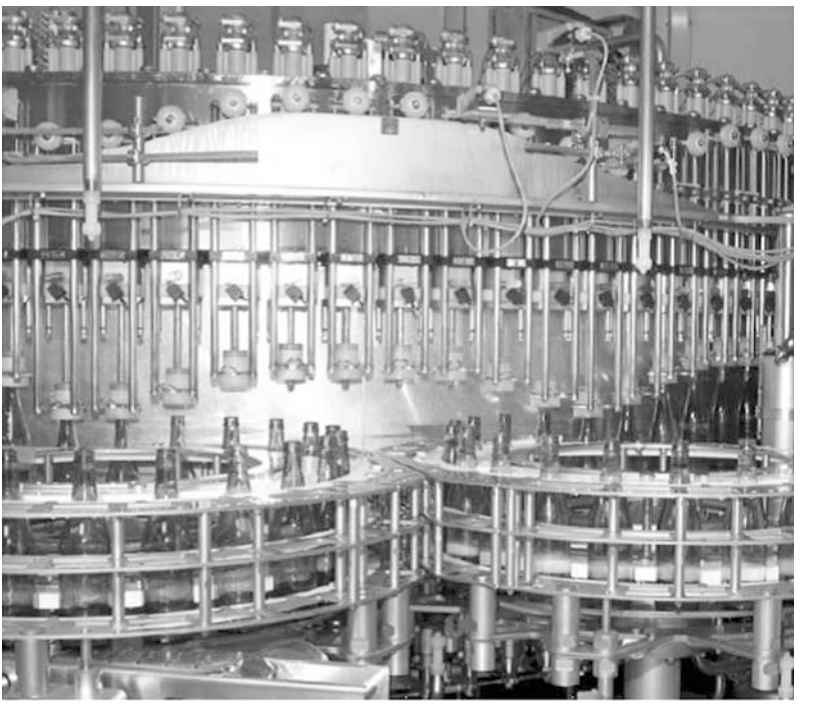


Figure 3.8 Krones bottling machine
Source: Krones AG. AbfüllSensometic VPGL. http://www.krones.com/de/service/9089.htm. 10/18/2010

Kosme. For decades, Kosme's machines had been far below the standards of Krones' equipment in terms of quality, costs, and price. Krones planned to use these "just enough" products to respond to demand in new growth segments. However, the Krones management felt it first needed to make certain changes to Kosme processes and products and sent its trusted German Krones managers to Italy. During this period, it was very difficult to push through any ideas originating from the Kosme team. In fact, some of the new processes implemented at Kosme conflicted with the company's cost-oriented philosophy.

What is more, many members of the newly merged sales and service teams found it difficult to adapt to the expanded product portfolio. This led to confusion among several of

their customers. Some thought that the merger would enable them to buy Krones quality at Kosme prices. The sales team responsible for both product lines did actually offer this option to some customers, creating additional internal tensions and external consternation. Overall, the acquisition initially failed to bring the desired results.

In the wake of this experience, the management team introduced corrective measures. The Krones managers' influence on product development at Kosme was reduced. The team in Italy regained responsibility for its own actions. Now there was once again clear differentiation between the two product lines. Separate sales operations for Italy and Germany were reintroduced. Rather than submit to the price pressure of potential Krones customers as a result of the Kosme portfolio, the Krones sales team began using the less expensive Italian machines to open up new, less affluent market segments. A member of the executive board described the divergence between the two product lines: "With Kosme, we're building a Mini, not a pint-sized BMW." Although Kosme machines cost around 10 percent more than those from other low-price suppliers in Asia, the price is still within an acceptable range for customers in BRIC countries.

The following rule of thumb applies when two product lines are offered simultaneously: the greater the difference in quality, the greater the difference in price. In the case of NFT, the price is determined by the customer's low willingness to pay. That means there needs to be a corresponding difference between the quality and/or performance of NFT and premium products. Customers use a number of variables to assess the quality of a technical product. These include material quality, product lifespan, fault tolerance, warranty, safety standards, range of potential applications, and general appearance.

KHS adopted an even more ambitious approach to break into the NFT markets. After Krones, KHS and Sidel compete worldwide for the lead in the bottling equipment

industry. In view of the strategic approach taken by market leader Krones, in 2006 KHS took over a mechanical engineering company in Shantou, China. Located in Guangdong Province, the town is a 40-minute flight from Hong Kong. Operating on a relatively independent basis, over 800 Chinese employees now work at the site designing, producing, and marketing bottling machines for the country's booming beer industry. Many of its customers are medium- to large-sized enterprises that cannot afford imported premium machines from Western suppliers. Previously, their needs were met by an increasing number of regional mechanical engineering companies, including Lehui and the Nanjing Light Industrial Machinery Group. The situation has since changed. In 2009, KHS operations in China supplied 70 percent of new machinery for filling reusable glass beer bottles. The machines' configurability and constituent parts match the standards of the local brewers' demand, and the equipment manufactured in Shantou can be sold in China for significantly lower prices than the European-made models – and at a higher profit, too. Low-cost synergies and a high degree of autonomy exist between the two KHS product sectors. For those in charge, this has been a key criterion in their market success. In this case, the level of autonomy has less to do with departmental egotism than customer-oriented differentiation.

In practice, companies will always attempt to achieve cost synergies when implementing NFT concepts. At first glance, the planned impact on volume might even seem to make this a wise option. However, the cases discussed here show that major differences must exist between the premium and NFT products. The greater the differences, the less beneficial it is to link the two sectors or adapt them to one another. That, in turn, means lower cost synergies potential.

Ways out of the service trap

In principle, the points discussed above can be extrapolated to apply to services as well as goods. Here, too, there must be

clear differences in price and quality between NFT products and the existing premium portfolio. Let us start by taking an example from the B2C sector. The first aircraft used by Freddie Laker for his no-frills flights were decommissioned machines from the British Overseas Airways Corporation (BOAC), the predecessor of British Airways. In 1977, Laker Airways became the first company to offer budget flights for long-haul routes. The initial Skytrain flights went from London to the United States; tickets were extremely cheap, costing less than £60 in some cases. Passengers did, however, have to pay for any extras, including in-flight catering. In the 1990s, it was companies like easyJet and Ryanair in Europe and Southwest in North America that really shook up the aviation industry with their low prices. Within the international airports in Germany, the no-frills airlines gained a 24.1 percent market share in only four years.

To date, there are no high-profile examples of premium and NFT products co-existing among B2B technology service suppliers. On the whole, companies in the business consultancy, certification and inspection, engineering, and project management sectors have not deemed this necessary. Although there are some examples in the IT sector, they have not brought such radical market structure changes as in the airline industry. That said, few technology companies would not offer services alongside premium sector technical goods. In fact, such services are generally more profitable than the goods themselves. Over the last few decades, there have been repeated examples of business models designed primarily to generate profits in the after-sales services sector. The elevator industry is just one of them. In the past, big-name manufacturers such as Otis, Schindler, ThyssenKrupp, and Kone have sold their elevators at either a low margin or below cost. It is the profits generated from subsequent maintenance and repair work that are truly attractive. Similar business models can be found in the mechanical and plant engineering and IT industries. Here, most of the money is made from system

modifications and upgrades carried out after the initial purchase decision. The same is true for the automotive sector, where the replacement-parts business achieves margins that are simply unimaginable for the sale of an actual vehicle.

Above all, the high profitability of after-sales services is based on suppliers' monopolistic market structures. One way of doing this is to specify that a product's guarantee becomes void if the customer does not buy replacement parts or maintenance services from the original equipment manufacturer (OEM) or a properly authorized third party. Alternatively, the product's compatibility with other system components may be compromised if the next generation of software is not installed. This approach is particularly effective and profitable in cases where legislation grants the supplier exclusive rights to carry out maintenance and repairs. Examples include products where public safety comes into play, such as aircraft and power plants. These are subject to national regulations that govern market access for spare parts suppliers. Similarly, companies can increase the technical complexity of a product to make it difficult or too expensive for other suppliers to meet the necessary maintenance and repair requirements. Therefore, manufacturers may opt to replace mechanical elements with electronic components, for instance. These components require special devices to analyze any functional issues. OEMs refer to companies that attempt to compete using cheaper repair solutions as pirates.

The Cerberus ECO case demonstrates that business models focused on after-sales services simply do not work in NFT markets. In China, for example, the sheer vastness of the provinces and the low penetration of technology-based B2B products are reason enough for a company not to employ its own service teams. Premium product service staff are not an option either: their hourly rates and travel expenses would push labor costs too high.

The NFT customers' lack of financial resources, however, is only the tip of the iceberg. In fact, NFT customers essentially want to opt out of existing business models for after-sales services. They do not accept the argument that, by failing to purchase replacement parts or repair and maintenance services from the OEM, they may lose product guarantee services, experience downtimes, and risk declines in operational reliability. Something that undoubtedly feeds into this situation is the availability of cheap labor in emerging and developing countries. This means that for some companies, machine downtime can potentially be compensated for with human labor. Even more crucial is the fact that NFT customers do not want to be dependent on suppliers. They prefer to have either their own employees carry out the repairs or to source maintenance services and replacement parts to lower priced third parties. Consequently, they opt to buy technologies that will not exceed their employees' competencies. That is why NFT bottling machines feature proportionally more mechanical components and fewer complex electronic control systems. Indeed, this was one of the secrets behind the legendary success of the Mercedes short-nose truck. Each driver could repair it, even if they were thousands of kilometers away from the nearest Mercedes service center.

All these issues may make some traditional technology companies feel even more threatened by the growth of NFT markets. Others, however, may see an opportunity to experience a business model that is not focused on the profitability of after-sales services. In any event, the existing model often irritates customers. They feel they are being taken advantage of. It also leaves suppliers vulnerable. This can happen if a new competitor overcomes the technical or legal aspects that tie a customer to that particular product manufacturer. Without the burden of manufacturing costs for the low-profit core product, competitors can afford to offer cheaper after-sales services and can generate greater profits. Major companies in the elevator industry often face this problem.

Former employees go into business for themselves and give existing customers alternative access to service expertise.

In the billion-dollar business of large-scale gas and steam turbines, General Electric, Siemens, and Alstom have already witnessed changes in after-sales services. The sheer technological complexity of today's state-of-the-art turbines means that repairs are largely beyond the abilities of power plant operators. Moreover, operators are even less able to accurately assess the risks of turbine failure and the costs of maintenance work. This is why output-oriented price models have been enforced successfully in this particular premium sector. In line with the motto *power by the hour*, remuneration is linked directly to the power generated by the turbine. In the field of the older, simpler gas and steam turbines, pirates have already launched attacks on traditional manufacturers' service operations. The established suppliers have been compelled to form groups of companies to cater to the service market for less complex turbines. At Siemens, this unit is known as Turbocare, the name of a former pirate company taken over by Siemens in 2002. In contrast to premium turbine service teams, Turbocare has no development department of its own. It has only a small number of sales staff, works instead with small local sub-suppliers, and has dispensed with the rule of providing support only for turbines that its own company produces. Instead, Turbocare also offers an after-sales service for turbines from other manufacturers.

Lamborghini sales staff for Skoda?

Just as a shift in mindset is required for the after-sales sector, premium suppliers must be prepared to open new trails in the sales and marketing sector, too. To return to a familiar example, any move to merge the sales operations of Cerberus ECO and Sinteso would be counterproductive. When a company opts for frugal engineering, it means that the differences between the pared-down product

and the premium product must be reflected in sales and marketing operations. This aspect is often underestimated in technology-oriented companies, which tend to focus on functional and design aspects instead. Remember that Krones, too, initially underestimated the problem of merging sales operations with Kosme. It only separated relevant organizational functions later on.

The first risk involved with inadequate differentiation at the sales and marketing stage is that the premium product's image may suffer. Image is particularly important in the consumer goods industry. For instance, it would be unthinkable for Volkswagen to employ the same sales resources for Lamborghini and Skoda (see Figure 3.9). Lamborghini's elegant image, for example, is created by the location and design of the showroom, the promotional materials, and the sales staff. This image would suffer were the product to be presented in the same environment as the less expensive Skoda.

On the B2B markets, however, additional factors support the separation of sales and marketing operations for NFT

Figure 3.9 Lamborghini (left) and Skoda (right) at the International Motor Show in Frankfurt

Source: Hartenberg, Michael (2009). Motorshow Essen – Lamborghini. http://www.fotocommunity.de/pc/pc/cat/4654/display/23302621. 04/19/2011 (left) and Schütt, Christian (2005). Skoda Messe-Stand, Essen Motor Show 2007. www.schuett.info/bmw/bild.php?bild=news/2007/ems/skoda/skoda_stand_9953-b.jpg. 04/20/2011

and premium products. The latter are technically complex, which means they require guidance and explanation and offer customization potential. Accordingly, staff members must be able to analyze customers' requirements and advise them on specific product features. That requires time and expertise, both of which drive up sales costs. In contrast, NFT products are expected to be simple, understandable, and cheap. They offer few, if any, customization options. Instead, they are highly standardized. This means that there is barely any need for comprehensive customer support, which is why it makes no sense to apply costly premium product direct sales strategies to NFT. NFT sales staff must focus on sales, not consultation. This might mean deploying sales teams with widely varying levels of remuneration, backed up by online marketing activities. It might also involve working together with trade partners. As with Cerberus ECO, indirect sales strategies make sense if the target markets are located in regions where the supplier has not yet established a presence, but has trade partners there who are familiar with the local conditions.

There is, however, one potential disadvantage of the indirect sales channel. The OEM is no longer in control of the customer acquisition process. This becomes significant if both product lines are offered to the same customer and if there is a risk that a premium product might be cannibalized. Ultimately, this is not the fault of inadequate sales management, but rather an issue of insufficient product differentiation. Product lines that fulfill different sets of requirements should not be forced to compete with one another. To put it another way, customers must see that only one of the available solutions is suitable for their needs. Either the features of the NFT product fall short of their expectations or the price of the premium product is too high.

It may be that there is already enough differentiation between the two products to avoid direct competition. Even so, it is important that those in charge of sales and

marketing for NFT and premium products coordinate their respective acquisition strategies. This prevents internal competition. More importantly, however, it ensures a mutual exchange of information on the latest market developments. This can be enhanced by incentive schemes that reward any support lent to the other unit. Yet even this cannot always prevent rivalry and friction. Often, such problems may be due solely to cultural differences that are not necessarily restricted to national or regional characteristics. According to a very simple marketing typology by Jagdish Sheth of the Goizueta Business School, sales people are either hunters or farmers. In that case, the sales-oriented hunters are more suited for NFT, whereas premium product marketing is better managed by farmers who are focused on establishing relationships.

The conflict between these groups and the risk of cannibalization should not be overestimated, though. The acquisition of Skoda gave Volkswagen a product that occupied a market position not dissimilar to that of its VW brand. The risk of cannibalization seemed clear. Yet, the chairman of the board of management, Ferdinand Piëch, justified his decision with a simple piece of logic. He said he preferred to cannibalize VW with the company's own products rather than to leave it up to competitors.

The battle for the brand

The debate over whether to market NFT under an established premium brand or a second brand can be surprisingly passionate. Emotions run particularly high when the established brand has close links with the company's history. Potential damage to the premium name is usually the main argument against integrating NFT. Behind it lies the fear that the image of a brand associated with high performance, technological innovation, durability, aesthetics, and similar positive values could suffer. This brand stretch has the potential to destroy goodwill on the market. Naturally,

this is even truer if the NFT fails to live up to its quality specifications. This generates negative media attention.

Interestingly, such issues occur most often where the company plans to use frugal engineering. The risk of damage to the brand's reputation is considered lower if the company offers old technology or de-featured premiums instead. The reasons for these divergent opinions are obvious. Old or pared-down products are still very much part of the company's tradition. They have direct links with the latest premium products. In contrast, new frugal products conflict with the company's traditional self-image. They do not settle well with premium sector advocates. Psychological dynamics play a role here, too. Although there has been little research in this area to date, the dynamics undoubtedly revolve around terms like pride and dignity. The remote location selected for NFT product development and production also fuels such discussions. Ultimately, this also relates back to the fear of losing fundamental power structures that have become paradigmatic.

There are equally viable arguments that support the use of a premium brand in NFT products. Premium products are familiar, and they have an established reputation. This could make it easier for NFT products under the same name to break into new customer segments. After all, establishing a brand new market takes time, money, and effort. The proponents of the second brand approach cite BMW and Mini as successful examples of this strategy. Their opponents draw on a different example from the same industry. They point out that VW markets cars ranging from the Phaeton to the Fox under the same brand worldwide. Yet they can appeal to different target groups and fulfill different quality and price requirements. In fact, what the VW example demonstrates is that the branding process can also take on a series of hybrid forms. This is worth considering when introducing NFT. As long as there is a clearly defined relationship between the two brands, it may be possible to use several brand names

Commercial vehicles	Volkswagen Nutzfahrzeuge 100%	Scania 49.29%	MAN 28.67%		
Premium	Bentley 100%	Bugatti 100%	Lamborghini 100%	Porsche 49.9%	
Volume	VW 100%	Audi 99.55%	SEAT 100%	Škoda 100%	Suzuki 19.89%

Figure 3.10 Overview: brands of Volkswagen Corporation
Source: Compiled by the author (according to Volkswagen AG)

in parallel. At present, Volkswagen Corporation has over ten brands in various product families with their individual brand environments, VW itself being only one of them. Brands like Golf – as a sub-brand of VW – even has its own sub-environment, including the GTI, a model promoted as a sportier option for Golf drivers (Figure 3.10).

Cerberus ECO represents a similar, multi-tiered approach. While Siemens also uses its corporate brand for NFT, the addition of Cerberus ECO reassures customers who are aware of the clear differentiation between this product line and the premium portfolio. The same applies to the MRI equipment from Siemens, where the corporate brand still precedes the name ESSENZA. KHS follows the approach of stretching its current brand and uses the same brand name for all of its machines. Krones, on the other hand, has opted for a second brand under the name of Kosme. MAN's truck business shows there can even be combined ways of dealing with this issue. For their NFT trucks in India, they use the brand MAN Force, while in other Asian and African countries these vehicles are branded as MAN only. In general we can identify three branding options if a company that traditionally markets advanced premium goods aims at introducing NFT products (see Figure 3.11).

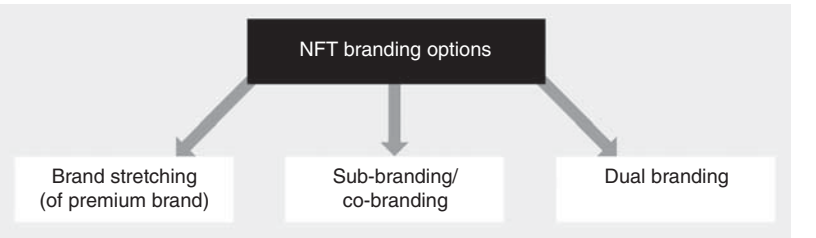


Figure 3.11 Branding options for introducing NFT

To assess these various strategies, we must first clarify the purpose of branding. Historically speaking, brands were established mainly in the consumer goods sector. They gave customers promises about a product's performance. Without these promises, the sometimes considerable differences in quality among beverage or cigarette products, for example, might not be obvious. For brands such as Coca-Cola and Marlboro, building the brand went hand-in-hand with efforts to offer customers a comparably reliable product, no matter where or when they bought it.

Because of an increase in product individualization, the brand benefit is less important in the technology sector. B2B customers also usually have greater product knowledge than end consumers. B2B customers know how technical goods perform. Occasionally, customers and suppliers have the same amount of training and industry experience behind them. When customers have this level of knowledge, it limits its brand effectiveness. It also prevents situations like the case of Deutsche Bank and Norisbank, where very few customers are aware of the relationship between the institutions. But if a premium supplier plans to launch NFT in technology-oriented B2B markets, word soon spreads.

Nonetheless, the high degree of market transparency that customers enjoy is not necessarily an argument against a second brand. In fact, suppliers can use it to differentiate even more clearly between product lines. Generally speaking, the better the customer can assess the quality of a

product, the less important the brand's role in sales success. For that reason, we should consider technology companies' product portfolios separately. The brand's significance varies depending on certain factors. These include the product's complexity, the target customer's knowledge, and quality assurance costs and opportunities. Basically, however, the brand is less important in B2B markets than the technology companies' heated discussions might have us believe.

Genuine low costs

Low costs are key to a successful entry into NFT markets. Cost requirements are based on how much customers are willing to pay. A 60 percent difference in price between an NFT and a premium product is by no means unusual. Therefore, conventional cost-cutting strategies alone are not enough. What is needed is a quantum leap in cutting the cost of sales. For established premium suppliers who plan to use frugal engineering to gain a foothold in the NFT market, this may prove to be the greatest challenge of all.

The points discussed so far give an initial indication of how dramatic cuts can be achieved for key cost drivers. Establishing product development teams in the NFT target markets can help to lower costs. This is because wages are still low in BRIC countries. Over the past few years, wages paid to qualified technical staff have increased far faster in China and India than in Western Europe or North America. The costs, however, still differ by a factor of 5–10 – even for development engineers. But sometimes, as with capital goods, labor costs make up just 10–15 percent of the cost of a product. In this case, companies cannot achieve the desired quantum leap simply by cutting costs in these areas.

Interestingly, this is why Bosch chose to relocate the development of cost-effective ABS car braking systems to its branch in Japan, a high-wage country. The move took place

in 2008, when the team in Japan was already working on developing less complex braking systems for motorcycles. Consequently, Bosch decided that its Japanese colleagues would be the ideal choice to design a cheaper product for the four-wheel vehicle market. After all, product design has a far greater influence on costs than production location. The design determines the type of materials used and purchase volumes required. It also defines the investment required and the degree of training that employees need for subsequent production operations. The degree of product and production process standardization is also a crucial cost factor. As stated earlier, there is one thing that usually sets premium products apart in the technology sector: they are largely designed to meet the customer's specific requirements. Different features can be configured on demand. This allows customers to select the right combination for their needs. Yet, this greater degree of individualization generates high complexity costs. In the mechanical engineering sector, these can account for up to a quarter of the sales costs. This must be avoided when dealing with NFT.

Standardization in the NFT sector primarily involves the technical components that form the product core. These determine the majority of the material and manufacturing costs. The motto here is *one size fits all*. The most prominent example for this approach is Ford's T-Model at the beginning of the last century. The low prices were based on mass production and standardization of the cars. The latter is often illustrated by the famous quote of Henry Ford that these cars could have any color, as long as they were black.

Suppliers can, of course, make exceptions to the standardization concept for product elements that have little effect on material and manufacturing costs. The head of the NFT division of KHS in China, for example, is more open to certain special requests from customers than his premium product colleagues in Germany: "If one of our customers wants their machine to come in green, then we'll paint them

green. We won't even charge extra." The economic viability of this approach is based on the availability of staff and low labor costs in China. Prices for NFT machines in China are already low. Even so, the costs for a simple external paint job are still so negligible – compared to the price of the machine – that KHS can cover them without any major financial loss. As a result, the company uses this service to highlight its customer orientation.

Reduced product complexity and high standardization are just two ways to minimize NFT costs. Companies also use a whole range of other strategies to cut manufacturing costs. Suppliers are one example. As long as they meet the necessary quality standards, suppliers are selected from companies that are also active in the low-price segment. More components can be passed on to these external suppliers than in the premium sector. This is because of their simpler technical design and the fact that they do not involve any know-how that might interest competitors. This is a particularly viable option if the effect on volume makes a supplier's prices cheaper than an NFT supplier's production costs.

As with material costs, companies must find new ways to cut manufacturing costs. The NFT production facilities of KHS in China provide us with a good example. For the first time in its history, the company purchased used machines to set up the plant. Managers in supplier companies usually find that NFT demands a very specific mindset – one that has been lost across many industrialized Western nations since the economic boom of the 1950s. In India, it is known as *jugaad* – the ability to make the most of limited resources. Against this background, companies adopt certain overhead strategies that have little to do with the standards of premium suppliers. Complicated decision-making processes, comprehensive reporting, and ambitious HR administration are simply not an option for NFT. It is important to note that this can also push worthwhile structures like

occupational safety regulations to the wayside. The lack of plush offices for company management, canteens with extensive menus, and glossy corporate brochures is less problematic. A no-frills approach to production also means no frills when it comes to internal structures.

Despite these efforts, NFT still may not meet its cost of sales target. This could be due to the costing mechanisms used in most Western B2B companies. They assign a company's overhead in proportion to the direct product costs using percentage costing rates. As a result, the costs of central divisions also feed into the calculation used to determine NFT product cost of sales. The outlay involved in basic research, boardroom budgets, marketing, controlling, and administrative costs for a premium supplier's headquarters can reach an impressive scale. If these costs are apportioned across the various divisions in the usual way, they will also affect NFT products. This will soon put an end to low prices for these goods. If competing suppliers on the NFT market do not have to include these charges in their cost structures, the competitiveness of the company's own NFT products may be impacted.

One way companies can deal with this problem is by altering their costing mechanisms. For instance, they can remove NFT sectors from the allocation mechanism currently employed for central overhead costs. In this case, the NFT sector would only be charged for those services that headquarters specifically provides for that area. This might include the right to use the premium brand, for example. Market rates could then be used as the price basis. In terms of cost accounting, the NFT sector would be treated as an external institution. This applies even if the NFT sector belongs entirely to the premium supplier. Central controlling departments, however, are not keen to allow sector-specific exceptions to the usual costing structures. If nothing else, they pave the way for other areas to request further exceptions. Plus, other corporate groups would take

a particularly critical view if they have to bear the extra costs for the headquarter overheads NFT groups do not have to pay. In general, exceptions to costing rules can create disunity within a company and make the accounting process more complex. However, in the case of NFT they might be necessary; Krones, for example, has changed its established costing system to accommodate their NFT products.

Reverse glocalization

Introducing NFT does not have a strong impact on a company's organizational structure as long as the concepts implemented are based on old technology or de-featured premiums. Certain tried-and-tested approaches are available. They safeguard successes in these areas and help seamlessly integrate them into the overall business organization. The situation is different if – as in the case of frugal engineering – the aim is to bring new products onto the market. In this case, the products must not dovetail too closely with the premium sector. The operational unit has to relocate to be as close as possible to the customer. This calls for a high level of NFT sector autonomy. Still, there are benefits in working with other company units as a whole. This is particularly true when successful NFT products on one specific national market are of interest to other countries as well.

MRI products developed in China by Siemens Healthcare, for example, were slow in achieving Chinese market sales targets. However, demand was surprisingly high in the United States – a market no one had originally considered. Cost pressures in the healthcare sector had forced hospitals in the United States to rethink their procurement policies. The cheaper models from China had a more limited range of uses than the premium equipment from Germany. Nonetheless, they still fulfilled some of the same applications at a comparable standard. As a result, smaller

hospitals opted for these less expensive Chinese-made models. Meanwhile, larger institutions saw them as an opportunity to acquire a second machine. The equipment also appealed to physicians in North America with larger practices. Previously, it would have been out of the question for them to acquire this type of superconducting MRI device.

General Electric offers similar examples in this field. In 2009, they inspired CEO Jeffrey Immelt, Vijay Govindarajan and Chris Trimble from the Tuck Business School to write an article entitled *How GE Is Disrupting Itself*. In it, Immelt, Govindarajan, and Trimble introduced the term *reverse innovation*. Previously, Western technology companies developed innovations on their own home turf before marketing modified versions in other countries. Now, this process is also operating in reverse. Basically, innovations produced in countries like India and China are now making their way to the West. This gives companies potential for further growth. At the same time, however, it also increases organizational complexity. This certainly does not make it any easier to utilize economies of scale. The more international and diverse companies become, the greater the level of market- and technical expertise. But it also becomes more difficult to achieve synergies between different units. This is more than just a cost issue, however. Among other things, it is about transferring know-how from one unit to another. This know-how can cover anything from customers, suppliers, and employees to technical procedures, processes, and products. Hierarchical structures may prevent the company from accumulating this knowledge centrally before passing it to other units. In that case, alternative coordination strategies must be identified.

In theory, solutions can be found in the form of polycentric network structures (see Figure 3.12). In networks of this type, an interdependent relationship exists between the units or nodes. They do, however, make their decisions on a largely autonomous basis. There is no central control unit as

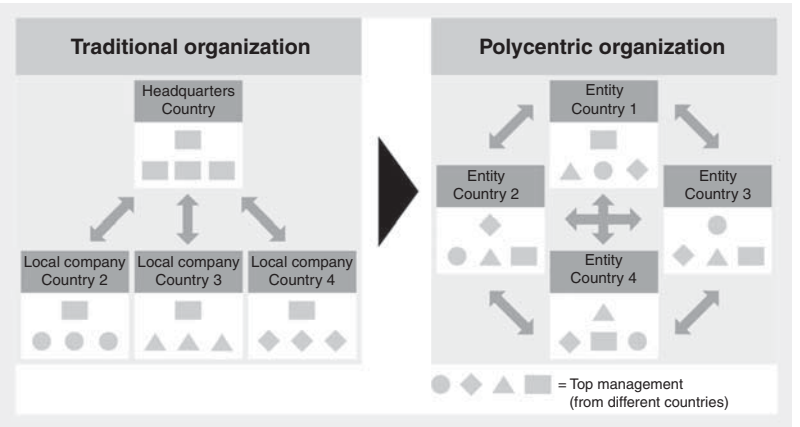


Figure 3.12 Polycentric organizational structures

in a traditional headquarters. Instead, decision-making centers are distributed across key regional markets worldwide. They also change their roles and responsibilities. Negotiations between decision-making units represent the central coordination tool. These bi- or multilateral consultation processes are used to carefully control the allocation of company resources, including money, know-how, and staff. Organizational units can thus adapt quickly and efficiently to changing market conditions without being impeded by administrative machinery. These processes are reinforced by a corporate culture. The set of cultural values ensures a cooperative relationship. It also supports the overall goal of sustainable success. So much for theory. As to reality, one could argue that the theoretical ideal of polycentric network structures has yet to be implemented in practice. If so, this is partially due to factors that are present in everyday working environments but are seldom translated into models. After all, those factors may not be clubbable, including things like egotism, personal vanity, and departmental envy needing to be checked and controlled.

Nonetheless, there are certain activities in practice that reveal polycentric tendencies. More and more, Western technology companies are relocating R&D operations to

BRIC countries. Companies like Siemens and General Electric are establishing technological centers of competence there. Cisco Systems has also opened a second headquarters in Bangalore. Particularly in the NFT sector, these domestic centers are increasingly being given responsibility for global product management. As the group responsible for Cerberus ECO in China, Siemens decided to make its products available in Russia, too. The company duly carried out the necessary adjustments and set the list price and discount ranges. This was, of course, done in consultation with the SBT managers in the Russian office and SBT headquarters in Switzerland. And if there were objections at headquarters to this type of expansion, the management there would intervene. In other words, the power to make the final decision still lies with headquarters in Zug. Nonetheless, Western technology companies pursuing an NFT expansion strategy are making organizational structure changes. This comes as a direct result of power slowly shifting to BRIC countries. The greater the economic success of these units, the stronger this trend will become.

Key statements

- To address new customer segments with low willingness to pay in rapidly developing economies offering frugal innovations is more promising than exporting out-dated technology.
- In case of frugal engineering, product development and product management should be located nearby the new customers and not the existing headquarters.
- In NFT markets, business models whose profitability is based on after-sales services have to be questioned.
- Different sales channels and sales teams should be appointed for NFT products and advanced premium goods, but the coordination of target accounts and crossover incentives has to be considered.
- To produce NFT, the standards/processes/habits of manufacturing advanced premium goods have to be

changed; conventional rules for allocating corporate overhead costs should be redefined.

- As to the naming of NFT products, brand stretching, sub-branding, and dual branding, can be valid options for which successful examples can be found on B2B markets; customer knowledge about the market is an important driver for this decision.
- Introducing NFT with frugal innovations pushes a supplier of advanced premium goods to decentralize/globalize its organizational structures.

CHAPTER 4

Complex service solutions

Voith Paper

Voith Paper, the world leader in the manufacture of paper machines, introduced a program across all business units to increase efficiency in 2008. This also affected the graphic paper machine business unit, the most profitable product group. Yet, managers of this entity resisted the typical path *toward* cost reduction, because it would have led to layoffs among the hundred employees in sales, sales support, and project management. Instead, managers planned to generate increased revenues with these very same employees and to use their know-how to market complex services.

Voith Paper has been a manufacturer of graphic paper machines for over 100 years. Some of these machines are 400 meters long and can produce up to 2000 meters of high-quality paper per minute at a width of more than 9 meters (see Figure 4.1). Its electricity consumption is equivalent to that of a city with a population of 100,000. Production disruptions generate enormous costs. As long as Voith machines run without malfunction, paper manufacturers usually do not change a machine or a production process. Thanks to their high-quality products, the firm Voith Paper has an excellent reputation.

The price of one such machine can be as high as €300 million. When an acquisition is being considered, paper producers bring in consultants to conduct a needs analysis. The results of this analysis include production processes,

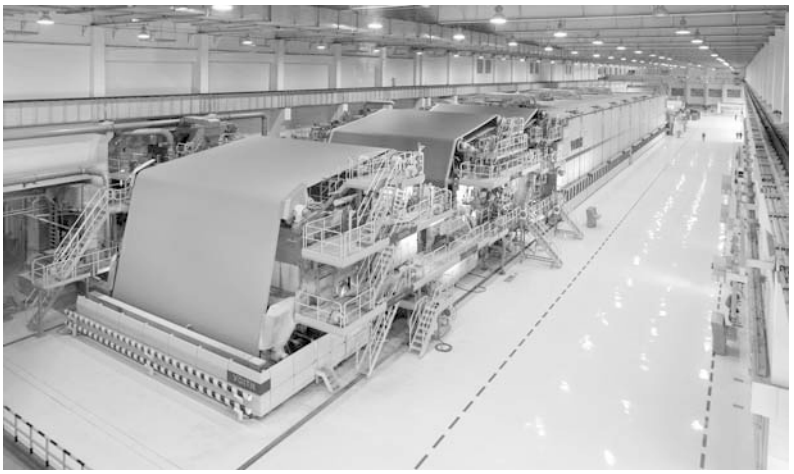


Figure 4.1 A machine of Voith Paper
Source: Voith AG. Neuanlagen. www.voithpaper.de/neuanlagen.htm. 01/20/2011

the building layout in which the machine will be housed, the necessary human resources, and much more. In addition, a comprehensive set of specifications is identified. As in other technology-oriented B2B markets, suppliers are required to provide a comprehensive set of detailed proposal documents to demonstrate how these specifications meet customer requirements. Proposals can run into the thousands of pages. It goes without saying that this type of request for quotation (RFQ) represents an enormous amount of time and effort for suppliers. As a rule, processing takes an average of 100–200 man-days. This also means that the Voith Paper sales team members who prepared these proposals must demonstrate a great degree of technical competence. This knowledge is not limited to their machines. In addition, they must constantly be aware of future technological developments based on years of process collaboration with their customers. They must also be well-informed of the functionality of competitors' machines. Proposal generation is based on this expert knowledge. Yet it was not paid for as a service until 2008. This was because Voith Paper customers, like many other customers in the B2B market, shared the

opinion that the opportunity to win a contract adequately compensated suppliers for generating proposals.

There are approximately 300 paper production companies worldwide that can afford the acquisition of such a paper machine. Two-thirds of that demand is covered in equal portions by Voith Paper and the Finnish competitor Metso Paper. Both companies deliver only one to two large machines per year, respectively. Yet in 2008, they processed 10–15 comprehensive RFQs annually. Some orders were lost to competitors, but customers frequently delayed the purchase of a paper machine or gave up on the project altogether. Ultimately, Voith Paper put a stop to this kind of waste of company resources. At a customer conference in 2008, the sales manager announced that from then on, proposals for prospective customers would only be produced in lieu of payment on an at-cost basis. The price for these services would be counted against the price of an eventual purchase. In explaining this measure to customers, Voith Paper said that the annual cost of producing proposals had, until now, been calculated as a sales cost and had therefore ultimately been carried by a small handful of actual buyers. This course of action was unfair because it allowed prospective buyers, who had either overestimated their resources or abandoned projects altogether, to pass related proposal costs on to paying customers. For the vast majority of customers, the new decision of Voith Paper made sense. In 2009, Voith Paper improved its hit rate from 10 to 30 percent and there were no revenue losses. Shortly afterward, the main competitor, Metso, followed Voith Paper's example. For serious prospective customers, undertaking a procurement project without one of the two market and technology leaders represented a risk. This observation is all the more true because the price for a proposal – in comparison to the level of investment when buying a machine – was relatively trivial. Furthermore, in the event of an actual purchase of a machine, the customer's cost for the proposal was reimbursed.

Because Voith Paper had fewer RFQs to process after 2008, technical sales specialists had more time for new activities. This was put to use in two different areas: first, Voith Paper offers consulting services for the needs assessment phase. Before that service was implemented, clients had brought in external technical consultants. Voith Paper specialists had a considerable advantage over these consultants because they had access to their in-house research and development and were better informed on current as well as future technological developments. Additionally, their day rates were lower because their activities were ultimately delivered at cost. Of course, there were customers who feared that Voith Paper would misuse its consulting to force customers to purchase its own machines. Voith Paper countered this skepticism by being particularly open and by involving its customers' employees closely in the Voith Paper consulting teams.

In addition, Voith Paper had introduced a new consulting product. This product identified potential efficiency improvements over the course of an energy and quality audit of existing technical facilities, regardless of the manufacturer. In these cases, too, Voith Paper experts could use their know-how to analyze customer production processes – to generate customer-specific recommendations and to calculate their economic impact on customers. By the first year, the demand for this kind of customer consulting was so great that the sales division did not have to implement any of the previously planned cost-reduction measures. Since 2008, sales employees who once exclusively performed cost-center activities were now producing direct revenue with innovative audit services. In this process, they also naturally strengthened their relationships to the corporate clients they served.

Voith Paper's newly gained services business may not be earth-shattering from a revenue perspective. What appears most interesting at first glance is the fact that Voith Paper

was in a position to demand payment for generating comprehensive proposal documents in the marketplace. Many sales managers in B2B markets would like to do the very same thing. Technically complicated products and customer-specific requirements make producing a proposal extraordinarily resource-intensive. In addition, the time and expense of producing proposals drives up sales costs and weakens employee motivation when all of their efforts turn out to be for nothing. That Voith Paper succeeded in being compensated for a service that, until now, had been provided for free may also have been because its main competitor followed suit. The primary reason, however, was clear communication vis-à-vis customers. Voith Paper's experience demonstrates that customers are completely prepared to accept new rules as long as they are thoroughly explained and offer clear advantages.

From a competition strategy perspective however, the new market and customers for Voith Paper's consulting services are of greater interest, particularly in the areas of energy and quality audits. Voith Paper discovered a business that gave it a competitive advantage over new competitors who were forcing their way onto the market. In addition to technological and customer process know-how, another factor also played a central role. Because of its long corporate history, Voith Paper enjoyed a reputation on the market as a trustworthy partner. Such a reputation can be crucial for several reasons, including situations in which customers seek to improve weak points – the very kind of information that they do not want to share with their competitors and customers. An inferior paper topography leading to print faults would be the type of finding during a quality audit that Voith Paper would treat confidentially.

The advantages that Voith Paper offered with its quality and energy audits could not easily be replicated by competitors. Yet the demand for these types of audits is relatively high. Even when energy efficiency is improved by a few

percentage points, a paper manufacturer can save considerable amounts of money. Voith Paper's new revenues from consulting offerings were less significant than the business generated in the area of machine sales. By actually moving forward to develop and successfully launch these kinds of services on the market, however, Voith Paper was pointing toward the future. It is definitely a success story and can serve as a model for companies whose goods-based core business has fallen under mounting competitive pressure and a firm's high prices for maintenance and repair service become less accepted in the market. As a result, complex service solutions (CSS) as developed by Voith Paper will gain importance at other technology companies, too.

Growth opportunities through services

According to the German Federal Statistical Office, services in Germany have generated approximately 70 percent of the country's gross domestic product (see Figure 4.2). The remaining 30 percent comes from manufactured goods and agriculture production. It is from this classification breakdown that we see the most familiar characteristic of services: unlike products or tangible goods, services are considered to be intangible.

In other Western countries – France and Italy to name only two – the service share of the overall economy has been increasing in recent years, too. Yet the data do not correctly reflect the value creation that is created by workers in an overall economy. Instead, these statistics are generated by the simplified categorization of entire companies. If a mechanical engineering company's payroll is processed by its own employees, for example, the economic value of that service is statistically attributed to the sector of durable goods. If the company decides to outsource the function of this particular department, however, and if individuals performing this work are employed by a services firm like

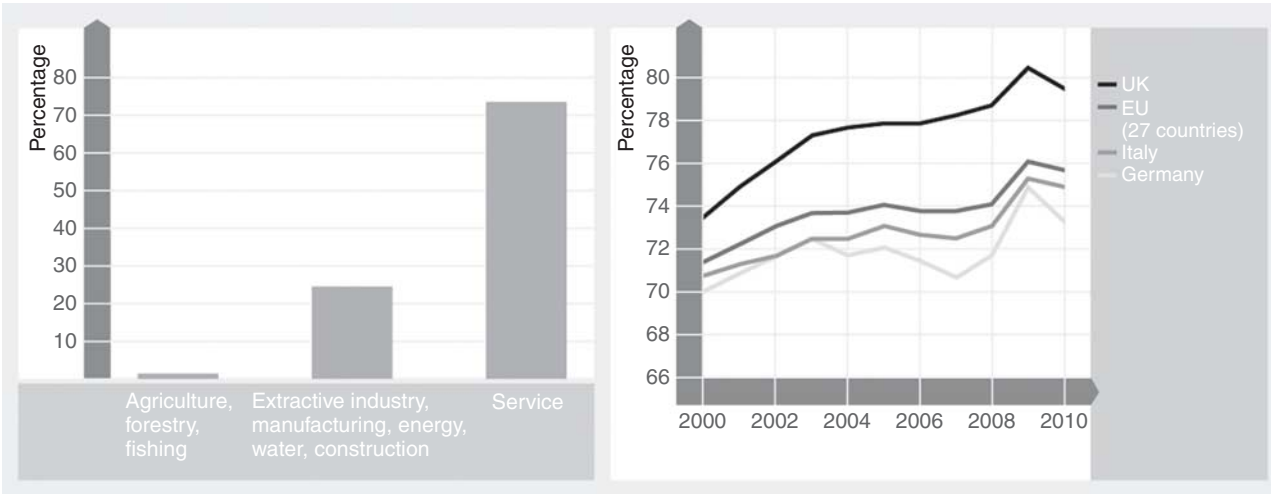


Figure 4.2 Share of services in Germany (left) and development of service share in Europe (right) according to the German Federal Statistical Office and Eurostat

Source: Statistisches Bundesamt, Wiesbaden 2011

Accenture, then the value of these services is statistically attributed to the service sector. In such cases, trend growth of the service sector would have been cited even though the actual work employees were performing had not changed.

Parallel to the economic growth forecasts, many Western firms are considering business goals that include expanding service businesses. This holds particularly true for firms that traditionally manufacture advanced premium goods. One example is the European firm EADS. In addition to the company's well-known Airbus passenger aircraft, it also produces helicopters, defense technology, and satellites. In its *Vision 2020*, CEO Louis Gallois announced in 2007 that the company would in effect triple the size allocation of its service business over the coming year to €20 billion.

There are four main reasons why the top managers of technology firms set such goals. First, high growth rates are predicted for the service sector. This is reflected in forecasts of the German Federal Statistical Office as well as in the analysis of many internal corporate planning groups. Second, many companies are convinced that services can earn higher profits than goods. The financial success appears even bigger if it is measured by capital-based ratios like return on capital employed because the service business is usually less capital-intensive than the goods-based business. Third, services promise a constant revenue stream, while businesses with high-value goods in B2B markets are more cyclical. Fourth, it is assumed that services are more difficult to copy and therefore offer more protection from competitors.

These expectations are nonetheless frequently linked to a definition of services that is, for our context, too narrowly formulated. The assumption that services offer attractive margins has often proven to be misguided, due to a one-sided focus on only those services that are actually highly profitable. For firms like EADS, this holds particularly true for service businesses like repair and maintenance. Profit gains in these areas can be so significant that goods

manufacturers might begin to view their goods-based business just as a necessary condition to access the high margins in the business of repair and maintenance. As we have seen in the previous chapter, the sustainability of such a business model is questionable. The example of Voith Paper also demonstrates how a narrow definition of services can exclude the many business activities that firms deliver without being properly paid, which is because technology customers are either reluctant or unwilling to pay for product documentation, training measures, or – as we will see below – consulting services.

The business cycle argument is also based on an overly narrow definition of conventional B2B service businesses. Orders for paper machines and passenger aircraft, for example, do indeed drop during a recession. At the same time, the demand for maintenance and repair work remains constant. In some cases, the demand for these services actually increases because of the lack of money for new purchases. Other services, however, follow a normal economic business cycle. Logistics companies, trade fair organizers, and business consultants suffered from declining revenues during the last economic crisis just as much as goods manufacturers. The extent to which a service reacts cyclically is completely dependent upon the actual type of service.

The fourth argument, which states that services offer better protection against copying or competition, also depends on the services being considered. With the help of the Internet and globally active logistics companies, new market entrants have succeeded in recent years in providing the same services of traditional wholesale and retail firms. Even technology-oriented services like software programming or engineering technical detail planning have become so standardized that they can easily be copied by new competitors. In the area of IT-based services, Indian firms play a key role in this area. Today, names like Infosys or TCS (Tata Consultancy Services) are known well beyond their

country's borders. Another example of a successful new Indian service provider in a non-industrial service industry is the Narayana Hrudayalaya Health City in Bangalore. Today, patients from over 73 countries travel to this cardiac hospital for treatment. The hospital applies volume business principles to a highly sensitive but relatively standardized service.

While Western cardiac hospitals rarely offer more than 100–200 beds, this Indian counterpart has more than a thousand. Operation success is comparable with that of Western clinics, but treatment prices are substantially less (see Figure 4.3). Although many socially disadvantaged patients do not have to pay anything at all, the profitability of this Indian clinic is substantially higher than that of private American hospitals. Nevertheless, Western clinics will not be left standing empty. This example does show, however, that even in highly specialized service sectors like heart surgery, a growing number of globalized competitive structures must be reckoned with.

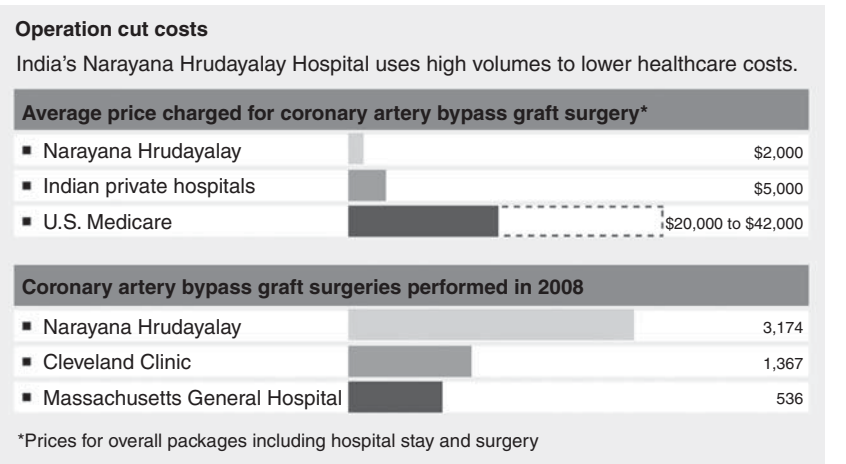


Figure 4.3 Comparison of Narayana Hrudayalaya clinic with leading American hospitals

Source: The Wallstreet Journal (2009). Tending to India's Health-Care System. http://online.wsj.com/article/SB125875892887958111.html. 09/12/2011

There are only a few markets that are shielded from competition. Some are based on state regulations – certain areas of the defense industry, for example. High market-entry barriers also exist where customers have vendor lock-in, either by contract or through product technology. This includes scenarios in which customers must purchase a software manufacturer's new upgrades because of compatibility. Yet there are also global B2B service sectors that offer attractive margins without lock-in mechanisms. They offer potential competitors little opportunity for market entry. Examples include McKinsey or Boston Consulting Group. These firms have achieved leading positions in the strategy consultancy industry even though their employees charge day rates. Competing Asian firms still do not play a significant global role in the market for these services.

In the technology industry, IBM is considered to be a pioneer in systematically responding and adapting to threats to its traditional goods business. IBM did so by recognizing the business potential of complex services. The company started this at the beginning of the 1990s, when it fell into financial crisis. The company's new CEO, Lou Gerstner, gave the firm a new strategic direction. Until that time, IBM had been the industry leader in mainframe computers and proprietary software. Servers and personal computers followed. In 2005, the company sold its personal computer business to Chinese firm Lenovo. In its place, Gerstner aggressively built up the business of CSS within the new business entity of IBM Global Services. These business activities became a focal point of the company's strategy when IBM took over the consulting firm PricewaterhouseCoopers in 2002. IBM Global Services has been incorporated into the IBM Global Business Services (GBS) group, which – with its large number of experts in over 160 countries – has become the largest consultancy in the world. GBS combines its professionals' business, process, and IT know-how to lead complex customer projects. Automobile manufacturer BMW, for example, sought to

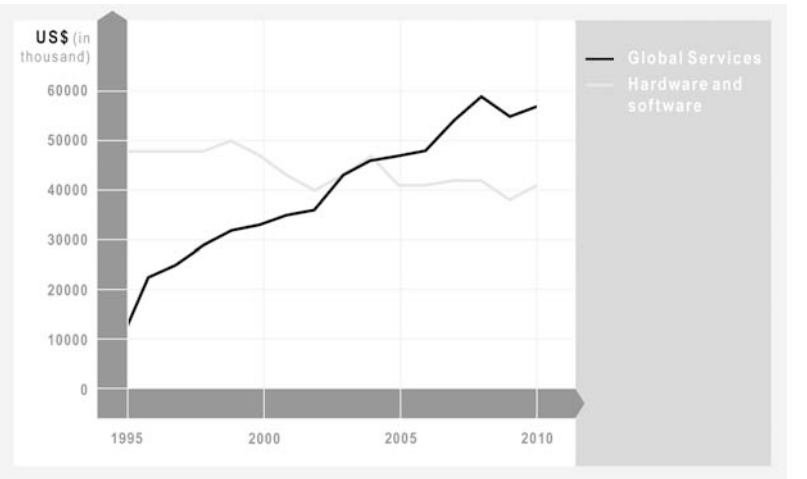


Figure 4.4 IBM Global Services earnings compared to hardware
Source: Compiled by the author (according to IBM annual reports)

conceptualize, configure, and implement a new IT-driven management system. At the same time, it needed to train 6,000 BMW employees to use the new system to drive more efficient, customer-friendly business processes. GBS helped BMW achieve that within a time frame of two years. Today, the IBM Global Services business area employs most of the company's approximately 400,000 employees, and it earns the largest share of the company's revenue. These good results meant that IBM, even in a crisis year like 2009, could pay its shareholders record dividends while maintaining its leading position in the IT industry (see Figure 4.4).

Characteristics of complex service solutions

A system is described as complex when its development cannot be predicted due to the large number of and interdependency of its variables. This variability is reinforced by this system's openness toward the outside (i.e., the way in which it interacts with the environment). The services we focus on in this chapter are also shaped by a large

number of interdependent variables, and in addition they are influenced by their unstable environment. As a result, their development and results cannot be predicted with any great accuracy.

The complexity of CSS arises from, among other things, their complicated technical context – their first key characteristic. For example, a host of mechanical, electrical, and electronic components have to be inspected during a Voith Paper machine quality or energy audit. Other factors also have to be taken into account, such as the heating and air-conditioning technology in the factory buildings, supplementary machines such as barking drums, and the chemical processes involved in paper treatment. The wide array of technical elements and the different forms they can assume result in almost limitless opportunities for interaction. Voith Paper's project complexity increases because economic factors and technical considerations also play a role. In addition, the high technical and economic complexity of CSS projects usually requires the involvement of several participants. This gives rise to high social complexity.

CSS are also shaped by a high degree of individualization. All services are customer-specific to a certain extent, including less complicated ones. Examples include taxi drivers who take customers to specified destinations, hairdressers who cut their clients' hair according to specific requirements, or waiters who serve the meals that their guests have ordered. With CSS, however, the level of individualization is particularly high because many elements feature customer-specific characteristics, which is not just because of the technical complexity of CSS. Voith Paper and IBM also have to coordinate their CSS solutions with numerous other factors. These include the level of training of the customer's staff, the customer's financial means, and the legal requirements within the customer's domestic market.

Complex services make up the core of CSS projects, but they do not have to be limited to those services. The management system designed by IBM for BMW branches, for example, covers standardized hardware, software elements, and the relatively simple services of their transportation. However, these aspects only serve to round off the CSS solution. The most important added value of CSS centers on the analysis of customer demand and the development of a specific solution concept, which will serve as the basis for overcoming complex, customer-specific problems. It is these activities that give suppliers the ability to create lasting competitive advantages.

Besides the complicated technical context and the high degree of individualization, the third key characteristic of CSS is the great importance that customers attach to them. This arises from the scale of positive or negative impacts that CSS has on customers. Successful implementation brings significant advantages. Failure poses the risk of serious disadvantages such as the loss of high investment sums, key customers, or valuable employees. On the one hand, this importance increases the customer's willingness to pay for CSS and therefore increases the supplier's profitability. On the other hand, it means that the trustworthiness of a supplier is key to customers. We will return to this point later.

To summarize, CSS are characterized by high *complexity, individualization, and importance*. It is these three factors that define the competitive position of CSS on technology-driven markets (see Figure 4.5).

Let us now consider one of today's most challenging examples in this context. Under the name "Soarian," Siemens offers services designed to improve the quality and efficiency of healthcare processes (see Figure 4.6). Improvements were needed due to the rising cost pressures in the healthcare industry and errors in diagnosis and treatment. The latter are responsible for the death of over 50,000 people a year in the United States alone. Siemens has adopted

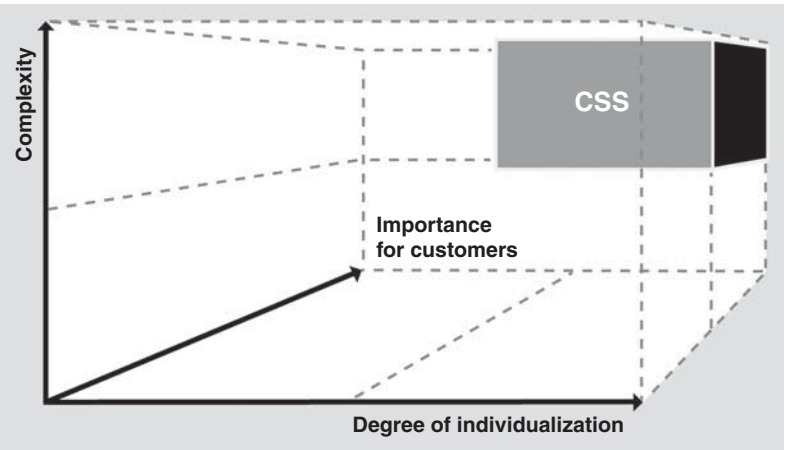


Figure 4.5 The three dimensions of CSS

a similar approach to that employed by Voith Paper for its paper machines and related consulting projects. The company uses the expertise in medical technology it has built up over the last 100 years by developing and providing support for high-quality medical equipment. Brought onto the market in 2001, Soarian is a modular software solution. It is designed to link all manner of healthcare service providers (e.g., hospitals, pharmacies, laboratories, and doctors' practices, and to document patient treatment and medication). During the launch of this complex system, Siemens Healthcare initially concentrated on individual hospitals or groups of hospitals, such as Massachusetts General Hospital in Boston. Soarian helps control the hospital's workflow management for both patient treatment and internal administration. In addition to monitoring the progress of the individual steps, the system also collects a wealth of information. It also uses integrated analysis tools to continually measure and monitor processes. The goal is to identify any anomalies or weaknesses and to recommend suggestions for improvement.

Although Siemens markets this product in the form of software modules, the greatest added value actually stems from

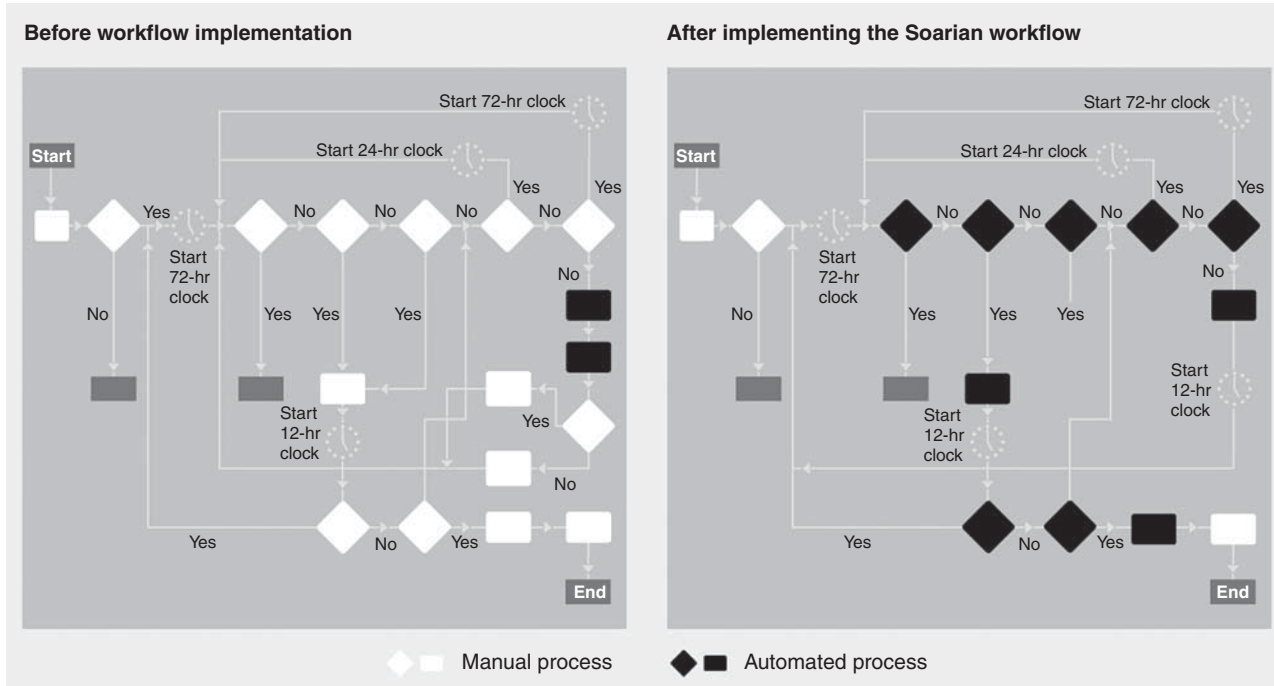


Figure 4.6 Schematic representation of the Soarian workflow management tool (based on information of Siemens AG)

Source: Compiled by the author (according to Siemens AG)

system customization. This involves an analysis of existing processes and consulting services to determine what form these should take in the future. Today, other established companies such as Cerner and General Electric are trying to break into the market occupied by Soarian. In contrast, new suppliers in rapidly developing economies are not yet in a position to play a leading role in this young sector. This comes in spite of the great potential offered by software developers there. Yet Siemens Healthcare has already contracted more than 130 general hospitals with more than 320 facilities for Soarian. Further strong growth is planned in other countries, where Siemens also intends to raise its profile with related management consulting services.

The CSS offered by TÜV Rheinland for the construction and operation of power plants are less comprehensive but also very successful. Looking back on its 100-year history, this company carved out a business for itself on the German market due to the strong demand for safety inspections. For decades, the highest revenues have been generated by statutory vehicle inspections. As this market became increasingly deregulated, a number of competitors established themselves. They were able to do so primarily because vehicle inspections do not involve particularly complex tasks. In view of the increasing competition arising from this deregulation, TÜV Rheinland started to expand its activities in other business areas, for example in the power plant industry. Instead of focusing solely on safety inspections for individual plants, TÜV Rheinland positioned itself as a supplier of complex service solutions for power plant operators along the entire value-added chain. Today, TÜV Rheinland advises its customers on planning and configuring new power plants, takes on core application activities vis-à-vis the regulatory authorities, supervises the construction and startup of power plants, provides recommendations on improving their economic and ecological efficiency, and assists with management. All these tasks are far more complex than vehicle inspections. Around 300 specialists

now work in this area at TÜV Rheinland, and there are plans to further expand CSS for the power plant industry. First, this is because of the global rise in demand for these services. Second, it is because of their greater profitability than the company's other areas of business.

Astrium, a subsidiary of the aforementioned EADS Group (the second-biggest aerospace company worldwide after Boeing), is another excellent example of the move toward CSS. Although the name of the company has changed several times over the years, it has been producing and selling satellites for over four decades, mainly to military customers. Among other things, the company makes satellites that use radar to inspect the earth's surface to record changes in height with millimeter precision (e.g., tire tracks on sand). For military applications, these systems are ideal for use on cloudy days or at night, when photographic satellites cannot supply accurate images. EADS realized that radar satellites could also provide valuable information for other sectors. For example, mining companies can use satellite images that are not impacted by the prevailing weather to pinpoint areas where the earth's surface has sunk, while environmental organizations can identify the spread of oil spills on the ocean surface. In addition, agricultural authorities can access information on plant location, development, and growth, while rail companies can use these images to identify track obstacles. None of these institutions is in a position to buy such a satellite, which costs €130 million. Hence EADS decided in 2001 to found a division known as Infoterra. This division owns the exclusive usage rights for the German TerraSar-X radar satellite, which was launched in 2007 and markets the resulting images. But unlike photo satellites, data from radar satellites cannot be interpreted quickly and easily by amateurs. It has to be deciphered to provide the requisite information. Therefore, Infoterra must first precisely define the information required by its commercial customers, take on the complex tasks of transmitting and converting the radar data,

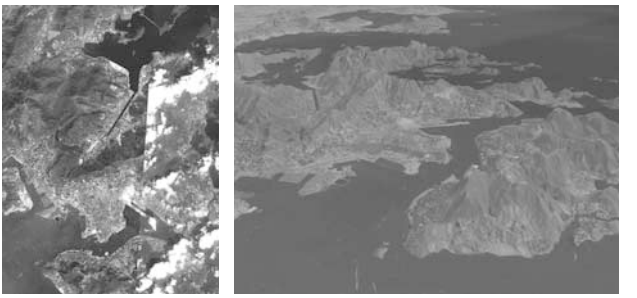


Figure 4.7 Satellite image of Hong Kong (left), and a converted radar satellite image of Hong Kong (right)
Source: NASA. http://landsat.gsfc.nasa.gov/. 06/20/2011

and format the resulting information so that customers can understand it and use it to make informed decisions (see Figure 4.7).

One thing that Voith, IBM, Siemens Healthcare, and EADS have in common is that they all adopted a leading position in their respective sectors a few decades ago by developing and marketing technologically innovative premium goods. Although they have improved these products over the years, they have not launched any more outstanding new innovations in these business areas. When the lifecycle of these products reached maturity, the companies achieved economic success by fostering customer loyalty through relatively simple after-sales services. Building on this foundation, CSS can be seen as the third business model phase in these industry sectors. It focuses on developing customer-specific solutions that extend far beyond the function of a technical product. In terms of competitive strategy, suppliers still seek to differentiate themselves in terms of quality, but they are changing the product portfolios they offer toward CSS.

As with products, successful marketing is key to CSS. Otherwise, CSS can never deliver the required results, regardless of how long they are on the market. For example, Siemens

established Siemens Business Services (SBS) in 1995. It was created shortly after IBM's entry into the service sector, and it was designed to expand its IT industry service business in a way similar to IBM. Although sales rose from €400 million to €6 billion in just six years, SBS was never able to achieve the profitability targets set out by the managing board of Siemens AG. SBS always lagged behind IBM Global Business Services' results despite having a similar service portfolio. Consequently, the marketing activities of SBS were largely discontinued in 2005. The division was then employed primarily as an internal service provider for Siemens, but large parts of it were sold to Atos Origin in 2010.

Knowledge-based business

When Voith Paper advises its customers how to boost paper machine efficiency, it offers a broad range of expertise. In addition to identifying the customer's actual manufacturing requirements, Voith Paper conducts test-reel productions based on the data and parameters of the customers. Ongoing developments in the various disciplines offer increasing numbers of potential technical solutions. Depending on the application in question, rollers used in paper production can vary in size. They can be made of steel, aluminum, carbon, or other newly developed plastics. They can also function as guide, suction, or press rollers. Voith Paper must be aware of the differences in product quality, shelf life, and energy consumption. It must also know which of its models are best suited to a particular task. In addition to being familiar with the individual technical components, Voith Paper must also understand how they interact with one another. Consultants for paper manufacturers need to know, for example, that certain impurities in ingredients can upset chemical processes, lead to paper tears, and cause expensive production downtimes. They must also be aware that this can be prevented by

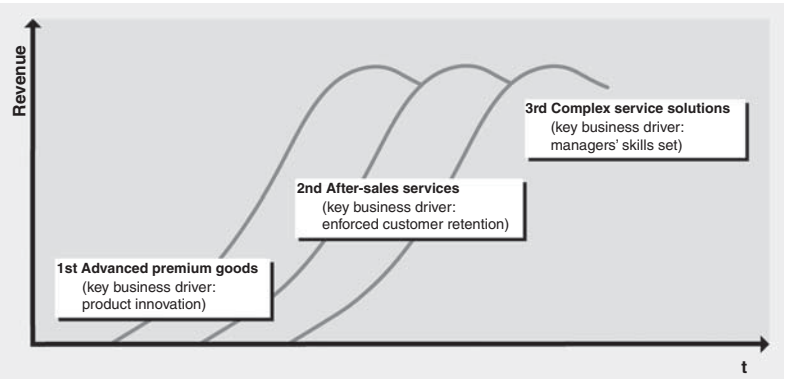


Figure 4.8 The three waves of business models in technology companies

knowing materials' pH values. In the past, technical product suppliers were able to expand their application-specific expertise by gearing their business models more closely toward after-sales support during the "second wave" (see Figure 4.8). They could also help their service departments gather valuable information on customers' processes. Although technical complexity prevents suppliers from knowing exactly how all the possible influencing factors may interact, these cross-company insights enabled them to develop heuristics that provide a key expertise advantage over any single customer.

As mentioned earlier, CSS suppliers must also demonstrate commercial know-how, be able to identify the customer's current situation and objectives in terms of their costs and earnings, and assess the impact of their services from an economic perspective. They must be able to correctly analyze the impact that CSS will have on human resources, financing policies, strategy, and other operational areas, and their business expertise has to include an understanding of their customers' industries. After all, comprehensive knowledge of customers' customers can provide an important gateway for entry into CSS markets. For example, Microsoft established its HealthVault online platform in

2007. It enables users to call up their own patient files using available medical data. The data are encrypted and can be made available to patients' doctors by means of a password. The doctors' findings can also be entered into the electronic files. Collecting, systematizing, and evaluating patient information in this way enables Microsoft to build up a valuable database for companies in the healthcare industry. Siemens hopes to emulate this success with Soarian. This example shows that the relevant fields of knowledge covered by CSS are so broad that companies across a wide range of industries can gain a foothold in these markets, present their know-how as core expertise, and supplement any missing know-how from other areas.

As mentioned before, CSS suppliers need experts with skills that extend beyond technical and commercial expertise to include project management. CSS project managers must have a good command of technical planning methods. They must adopt a holistic approach to gain an overview of all project aspects and to prioritize all requisite activities. They must also have the intellectual flexibility to draw up and follow detailed plans, and at the same time be able to adapt to unforeseen situations. Ultimately, project managers must be in a position to motivate participants through all project phases. As a result, they must be familiar with the requisite leadership tools. It is worth noting that, although CSS project managers are reliant on support from the customer's staff, they usually do not have formal power over them. This factor can play an important role if difficult situations arise between the supplier and customer as a result of conflicts of interest. This can happen even in successful working relationships. Knowledge of human nature and negotiation skills are required to overcome such challenges, particularly when the participants are from different cultural backgrounds. These project-management issues are based not only on the project manager's knowledge but also on the more deeply rooted facets of his or her personality.

Customer as co-creator

When suppliers offer services involving a high degree of individualization, it goes without saying that they must focus closely on customer requirements, which is nothing new in and of itself. Market research departments are involved in recording customer requirements – even when it comes to standardized consumer goods like yogurt or chocolate bars. Analyzing and implementing customer requirements for CSS, however, is geared toward the relationship between a single customer and the supplier. In the IT industry, this is known as *requirement engineering*, which is subdivided into the phases of requirement identification, specification, and evaluation – even though it is not always possible to make a clear distinction between these phases. They can overlap or may need to be repeated several times. This can happen, for example, if customer requirements change while the solution specification is being drawn up. CSS customer analyses are not usually based on the standard market research methods applied to consumer goods (i.e., questioning and observing a representative sample of members of a customer group). Instead, they focus on an interactive and ongoing collaborative process with a single customer. During this process, suppliers familiarize themselves with customer requirements, eventually building up as much knowledge as a customer's employees. In return, customers broaden their knowledge of individual or holistic problem-solving methods. Last but not least, it builds a common ground for the supplier and customer. This allows them to drive CSS success forward together. In doing so, they can build a relationship that rises above the traditional customer–supplier conflict scenario.

For CSS suppliers, the collaboration process starts as early as the acquisition phase, and it extends well beyond the purchase decision. Due to the individualization of these services, it is only logical that the customer plays an important role in the production process. This also applies to the

relatively simple services mentioned earlier, such as a taxi journey, a hairdressing salon visit, or a restaurant meal. These services, too, can only be produced with customer involvement. With CSS, however, the process of involving customers in the production of services is particularly time-consuming and intensive. For instance, a hospital that has decided to buy a Soarian solution must give Siemens project managers insight into its existing processes and resources. The latter must be able to talk to hospital staff, and to have access to the relevant documents and IT systems. Project managers must also know the hospital's objectives to determine future expectations in individual areas.

In addition to attracting the attention of industry, the customer integration process has sparked academic interest. Since Steven L. Vargo and Robert F. Lusch published a groundbreaking article in the *Journal of Marketing* in 2004, a new theoretical paradigm has been established that puts service-dominant logic at center stage. Instead of focusing on the sale of goods, the marketing perspective of service-dominant logic concentrates on the entire value-added process of providing a service. Customers adopt the role of "co-creator of value," pooling their knowledge and skills with suppliers to generate economic benefits for both parties.

Lynn Shostack showed how this cooperation could work in her book *Service Blueprint*, which was published in the 1980s. Her idea was later developed further, primarily by Michael Kleinaltenkamp and Sabine Fliess. In this case, a service is depicted by a chronological workflow diagram, highlighting the customer's perspective of the individual steps. In its simplest form, service-blueprint activities are assigned to specific levels of action. This action depends on whether customer interaction takes place (line of interaction), whether it is visible to the customer (line of visibility), or whether it requires internal consultation on the part of the supplier (line of internal interaction). This visualization

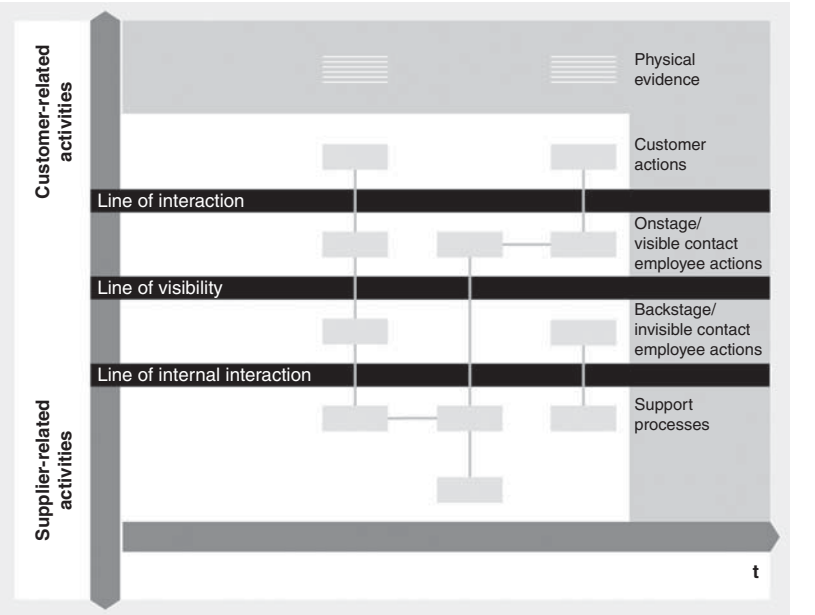


Figure 4.9 Schematic representation of a service blueprint
Source: Compiled by the author (according to Michael Kleinaltenkamp and Sabine Fliess (2004))

creates greater transparency to better manage customer expectations (see Figure 4.9).

Integrating customers into the production process for CSS calls for skills that extend beyond the technical competencies mentioned above. An ability to register the emotions and thoughts of others is key in this context. This skill draws on an approach developed by the US psychologist Paul Ekman known as cognitive empathy. Unlike emotional empathy, which involves the ability to feel the emotions of others or even sympathize with others, cognitive empathy is a process of intellectual understanding. Suppliers can use it to understand customers' problems even if they are not immediately apparent. Of course, caution is necessary here. As soon as people understand one another or start to get closer, feelings of sympathy or antipathy can begin to play a role. In this case, suppliers run the risk

of unfairly influencing decisions, giving in to concessions, or taking too staunch a stance. Therefore, suppliers must seek to develop an understanding of the customer's problems while also maintaining an emotional distance. This also involves being able to classify details correctly, because not all the information provided by the customer's staff is necessarily true.

Communications skills go hand-in-hand with this knowledge of human nature. First and foremost, this involves asking the right questions. This may sound banal, but it cannot always be taken for granted among technology companies. After all, sales is traditionally about persuading customers of the advantages of an existing product, or at least one that is already in the pipeline. In this case, asking the customer questions is less about working out the technical specifications, and more about building relationships and signaling interest in customers and their companies.

Additionally, communication skills are needed to pass on information to customers and to explain concept and problem-solving processes. *Consultative selling* describes the methods needed to handle the sales side of this task. These insights may prove useful, but alone they are no guarantee of successful customer cooperation. Other factors are needed for this, such as the personal credibility of the supplier's representatives. However, personal credibility is something that is difficult to learn methodologically. Because of the long and intensive cooperation required between CSS suppliers and customers, customers are sure to notice when they are being misled. We have all experienced such moments that have given us pause. Perhaps it was an inconsistency in something our counterpart said. Even if we cannot put our finger on the problem exactly, we know that "something happened." It caused us to take one step back. These kinds of minor irritations can jeopardize the success of CSS projects. They can even lead to their termination.

It is not possible to acquire critical analytical skills quickly. However, CSS project managers must have this ability

because they have to be able to question the customer's current processes before making suggestions for improving them. When Soarian is introduced in a hospital, for example, customers expect suppliers to identify ways to improve existing processes. Perhaps different departments are repeatedly collecting the same patient information. Perhaps the process of prescribing medication is not being sufficiently documented. The critical analysis of existing processes calls for intellectual independence and self-confidence. Otherwise, it can lead to disharmony in relationships with customer employees. This proves particularly true when employees believe that changing the status quo will lead to personal disadvantages for them. For example, senior doctors at a hospital may feel threatened by the implementation of Soarian because the greater transparency it provides may make it easier to identify treatment errors.

The supplier's skills of critical analysis must be supplemented by creativity in solution concept development since CSS project complexity and individualization mean that no two solutions are ever the same. In some cases, suppliers merely have to adapt known solution elements. In other cases, they have to step outside their familiar boundaries to develop completely new approaches. To illustrate this point, let us look at a popular task for testing creative skills (see Figure 4.10). Solving the task requires the person to think outside the box.

In a corporate context, it is worth noting that it is chiefly hierarchical company cultures and a heavy reliance on bureaucracy that can dampen employees' creative skills.

Customer's trust

Supplier trustworthiness is a central factor in CSS marketing. That is why it is dealt with separately here. Its importance stems from a customer risk in making purchase

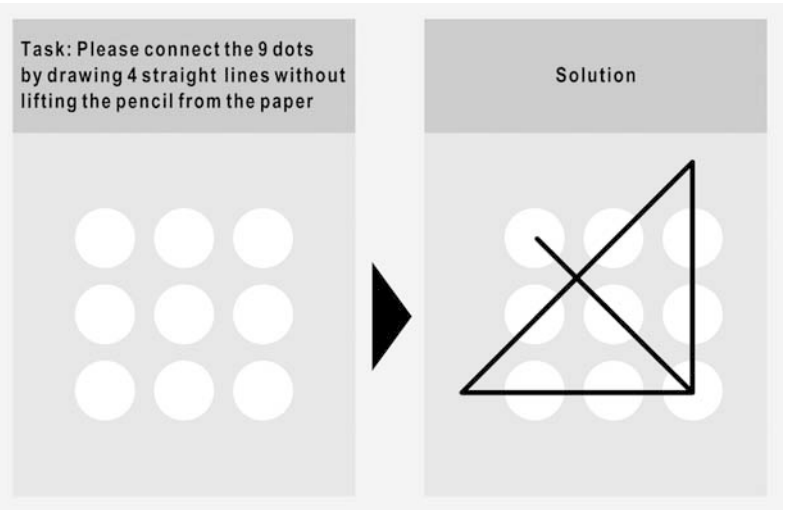


Figure 4.10 Test of creativity

decisions. The first reason for this is that customers cannot verify the service before purchase. Because producing a service requires co-creation between supplier and customer, it means that the customer cannot check quality before choosing a specific supplier. Even after the service has been provided, it is hard for the customer to evaluate the service since the complexity of the project and the diversity of the cooperation make it difficult to assign blame clearly to a specific party if the objectives of the CSS project are not met.

In addition to the limited scope for control, the second important factor in determining customer risk is the negative consequences of project failure. The more customers invest in a project, the more they have to lose. The perceived risk rises accordingly. By contrast, the likelihood of CSS marketing success increases for suppliers if they succeed in reducing customers' risk perceptions before the purchase decision. In this regard, the theory of perceived risk developed by Raymond Bauer in the 1960s identifies two options for the supplier (see Figure 4.11). First, suppliers can reduce

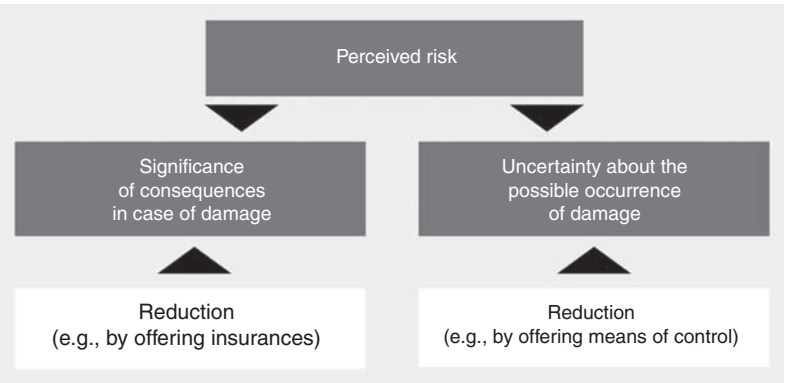


Figure 4.11 Theory of perceived risk

the significance of unfulfilled promises and their consequences for customers. For example, for customers who do not have confidence in a project completion date, suppliers can offer high contractual penalties in the event that a deadline is not met (unfulfilled promise), which reduces the severity of the consequences (economic loss). This solution may be acceptable to the customer, but it shifts the risk of incalculable complexity onto the supplier. Therefore, suppliers tend to prefer the second option, which involves reducing the customer's perceived risk by providing confidence that there is no chance of a negative outcome. Here the supplier's trustworthiness plays a central role.

The customer's trust can relate to the company as a whole or to one or more of the supplier's employees. In the first case, trust is closely linked with the company's image. The image and reputation of well-known technology companies such as IBM, Siemens, or General Electric provide excellent opportunities to employing brand-stretching tactics that leverage the company's brand for CSS offerings. Nonetheless, it is ultimately the trust between the customer and the supplier's employees that drives the customer's purchase decision. Given the limited scope for control, the customer must be convinced by the commitment and integrity of

those involved in the project. Customers must be confident that CSS project-leads will remain committed to project success at all times and stick to the agreed course of action – even when put under pressure by actual customer employees or others. Customers must also be confident that the supplier's employees will treat internal information confidentially. This confidence must even extend to potential future projects that involve a customer's competitors, clients, or suppliers.

Trust expectations are primarily centered around the behavior of the person to whom a project has been entrusted. It assumes that the trusted individual will not damage these bonds of trust in specific situations. In academic circles, this is referred to as *hidden action* or *moral hazard*. Numerous studies have been conducted to investigate how those involved in a customer–supplier relationship can build up trust. Let us now look briefly at three key aspects.

1. Social similarity among participants is an important factor in building trust. This does not mean that the supplier's employees have to adopt the values and attitudes of the customer for a given project at the expense of their own authenticity. However, social similarity can play a role during the selection of staff for CSS projects. For example, a supplier with an international customer base should hire employees with diverse backgrounds and take cultural similarity into account when setting up the CSS project teams.
2. Reciprocity engenders trust. In other words, one party is more likely to trust the other party when it, itself, feels trusted. Experiments in game theory in particular have shown that people who extend trust receive trust in return. By contrast, general mistrust is a sure-fire way of generating an impasse in a relationship. If customers are wary of high risk, it can make sense for suppliers to link their own CSS project benefits to perceived customer risk. For instance, the strategy consultant Bain & Company, a spin-off of the Boston Consulting Group,

succeeded relatively quickly in gaining a surprisingly high market acceptance by basing its fees on clients' improved business revenue. Linking its fees to the customer's success in this way gave Bain & Company a competitive edge in a market previously dominated by suppliers who charged for their services at a daily rate.

3. Consistent supplier behavior strengthens customer trust. Consistency is used to predict how a supplier will act in the future. In other words, the more often a supplier proves its trustworthiness, the more consistent its image will be. As a result, customers will be more likely to trust in repeated behavior in future projects. Such experiences develop over the course of long-term business relationships. In particular, the breaking of promises takes on enormous significance. This aspect plays a prominent role in the acquisition process, where rash promises are made just to win a contract. Subsequent non-fulfillment can lead to problems with customers in other areas of business, too. However, because the trustworthiness of CSS suppliers can be crucial for market success, such damage to a company's reputation can jeopardize its very existence. Trust is fragile. A single breach of trust can quickly destroy a relationship that has been built up over a lengthy period.

Social similarity, reciprocity, and consistency help build up trust in different cultures, but each of these individual factors has a different impact. Those responsible must take these differences into account when CSS project participants come from different cultural backgrounds. In order to recognize and handle these differences, it is therefore essential that project-leads respect and are receptive to different cultures.

The end of sales as we know it

The important role played by personal trust in CSS purchasing decisions has organizational consequences for

marketing. One important aspect is that the separation of sales and production standards in most technology companies is often incompatible with CSS. If customers have decided to buy CSS from a specific supplier, they will have built up a trust relationship with supplier employees involved in the decision-making process. They feel that they are in safe hands with these employees. At the same time, they will be disappointed if the same people are not involved with project implementation following a purchase decision. By contrast, in the case of advanced premium goods, sales employees are not expected, much less wanted, to be involved in the production process. An employee selling trucks, for example, does not know where the individual parts are obtained, at what point the engine is assembled, or what method is used to apply the paint. With successful strategy consultants like McKinsey or the Boston Consulting Group, on the other hand, the partners responsible for acquiring the project are also tasked with its subsequent implementation. Instead of being solely responsible for the entire project, they serve as a point of contact for customers and head up the supplier's project team.

Following this approach, the heads of CSS projects in technology companies, too, must be willing to take on responsibility for both the sale and implementation of projects. Traditional technology companies find this difficult because their marketing and sales tasks usually receive less recognition than activities in research and development or production. Therefore, a new mindset is required if a traditional company decides to start CSS business. It can be useful here to take another look at the organizational structures of strategy consultants who assign sales responsibility only to their most superior and best-paid employees.

When it comes to the simple elements completing the core value of CSS processes, the traditional view of how to manage sales efforts must also be called into question. If the customer buys these elements separately, the supplier's sales

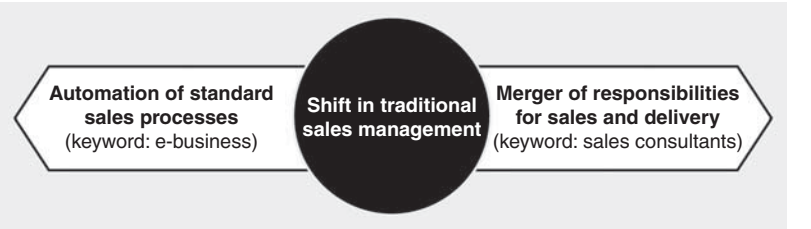


Figure 4.12 Shifts in focus for traditional sales processes

staff no longer needs to provide personal support, particularly in the latter phases of the cooperation. Instead, these purchase processes can increasingly be automated through e-business platforms, thus generating cost-savings for customer and supplier alike. This means that the traditional sales approach of technology-based B2B market moves, on the one hand, to an IT-driven automization of standardized transactions and, on the other hand, to sophisticated consulting (see Figure 4.12).

High demands on human resources

The previous sections showed that CSS market success depends first and foremost on project managers and their teams. A very challenging requirement profile applies to the project manager's role in particular (see Figure 4.13). Project managers must have an extensive array of knowledge based on high levels of technical expertise. This must be complemented by a good command of business management, project management, and customer industry insight. A project manager must also demonstrate leadership qualities, cognitive empathy, critical analysis, creativity, and excellent communication skills. Integrity, commitment, and an understanding of intercultural relations are important, too. Furthermore, project managers must have an interest in sales and maintain a focus on suppliers' business objectives.

It is difficult, of course, to find employees who meet all the requirements of this profile. A suitable project manager

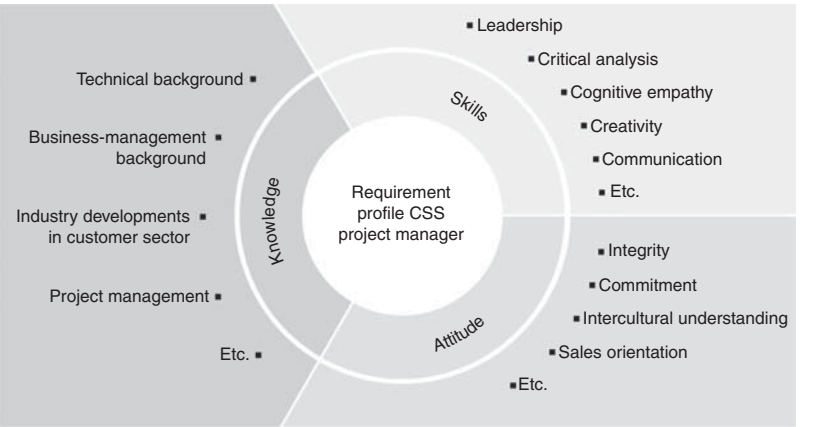


Figure 4.13 Requirement profile for a CSS supplier project manager

requires a lengthy period of training, which might include a science-based degree, an MBA, and several years of professional experience. Skills such as creativity and critical analysis cannot easily be learned on the job. At best, the foundation will be laid in childhood and then further developed at school and university. This applies even more strongly to ethical values such as integrity and intercultural understanding. These are based less on cognitive skills and more on the character of an individual.

Employees can compensate for personal knowledge gaps by assembling project team members with individual skills that complement each other. However, this approach is not advisable for all dimensions of the CSS requirement profile. Instead, it is equally important to pay close attention to team harmony, and to avoid potential conflicts in the confidential handling of customer data, which is no trivial matter when it comes to building project teams. From an HR perspective, it is important to define the individual dimensions of knowledge, skills, and attitudes before getting an overview of how they are rooted in the individual employees.

Because some of the requirement profile dimensions take shape before an employee's career begins, they must also play a part in the recruitment process. In addition, a corporate culture has to be established that is designed to strengthen the requisite employee qualifications. This may be reflected in a company's track record in promoting from within, the training courses it offers, and its remuneration programs. A corporate culture that helps recruit employees who match the profile and encourages their long-term loyalty can give companies a lasting competitive edge since a successful corporate culture is a hard thing to copy. It cannot be achieved by hiring one or two employees from a successful company. Siemens differs from Apple, as does Volkswagen from Tata. None of these companies can change overnight unless management is prepared to take radical measures. This is actually what IBM did from 1993 to 1994 when it cut 36,000 jobs in a bid to transform itself from a hardware manufacturer to a service provider. Former employees were replaced with the CSS experts that were needed instead. In IBM's case, the conversion was a success – at least in economic terms. By contrast, Siemens Business Services, which primarily had to recruit its staff from the loss-making IT equipment manufacturer Siemens-Nixdorf, did not have the opportunity to take such radical HR measures. The attempt to educate employees to adapt to a CSS requirement profile – individuals who had come from a very different corporate culture – was largely a failure.

Employees as the advertising message

Another difference between advanced premium goods and CSS lies in marketing communication. When marketing advanced premium goods, usually the *products* take center stage in advertising and sales activities. The performance data of machine tools, trucks, or gas turbines are listed in brochures and the products are showcased at trade fairs. This forms the starting point for subsequent sales

discussions, and they are used to explain the product data in detail. CSS, on the other hand, does not involve a visible product that can be put on public display. The product is only created after the purchase decision is made. Even once the supplier has provided the service, it cannot be displayed in a brochure, on the Internet, or at trade fairs because it is not a physical object. As a result, CSS requires a different product benefit frame of reference.

The field of new institutional economics has developed an approach that illustrates the available options. It begins with the assumption that consumers seek to reduce the uncertainty they feel during transactions through product information. Product qualities are distinguished by whether they can be verified before or after the purchase decision, or whether the workload is so high that it makes no sense at all to check the qualities. This gives rise to a matrix structure comprising the following criteria (see Figure 4.14):

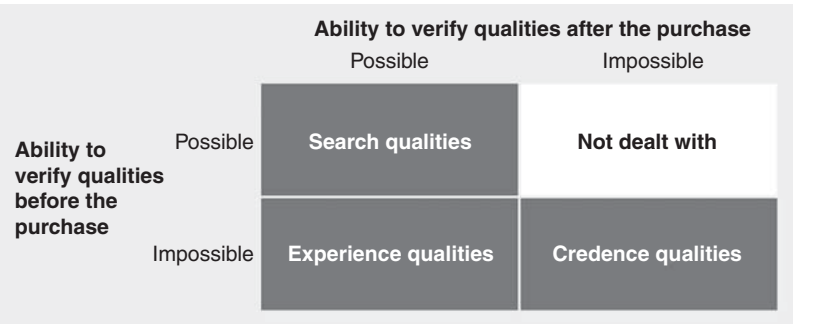


Figure 4.14 Ability to verify product qualities – based on Phillip Nelson, Michael Darby, and Edi Karni

Source: Compiled by the author (according to Phillip Nelson, Michael Darby, and Edi Karni)

Search qualities can be verified before the purchase. For example, if a customer buys a second-hand car from a dealer, he or she can check specific factors such as the model, size of the trunk, color, and so on. By contrast, the *experience qualities* can only be tested after the purchase

has been made. It is only at this point that the buyer will find out how repair-prone the car is and how much oil it consumes. Test options like these are not available for a product's *credence qualities*. One such example is the car's airbag system. When customers sell their cars after a number of years, they typically do not check to see if the system still works. In other words, they buy on trust. In the same way, customers simply have to trust that Soarian will optimize the hospital's process workflows. They cannot check whether another organization of the processes would have achieved even better results.

These three product quality categories – search qualities, experience qualities, credence qualities – create a good foundation for establishing the focal point of a supplier's marketing communication activities. It is important first to note that CSS do not have search qualities, because service provision only starts once the customer has made a purchase decision. In this case, therefore, there is no issue of harnessing the communication benefits of search qualities. CSS do possess experience qualities, however. For example, the customer can gain an impression of the quality of the documents drawn up by the supplier during the project. Overall, experience qualities are best communicated through references. In this case, communication activities draw on the experiences of customers who use or have used similar solutions instead of focusing on the particular product solution that the customer is seeking to buy. This gives rise to two problems for CSS. First, CSS projects are difficult to compare due to their high level of individualization. This makes it hard for potential customers to draw conclusions about their own projects based on the statements of reference customers. Second, some customers do not want other market participants to know that they have been involved in a CSS project. They also do not want to reveal the identity of the supplier with whom they have worked. This proves particularly true when the projects have a direct impact on a customer's competitiveness.

Because of the limited communication opportunities for search and experience qualities, credence qualities take on a special role in CSS marketing. In this case, customers do not have access to any product-related information that can help ease their uncertainty, as no quality criteria can be applied. Instead, customers look at suppliers' credential information and equate the quality of the suppliers' reputation with its products. In this case, a CSS supplier's communication policies, for example, might want to utilize the company's international locations, its long and venerable history, or its financial strength. Above all, however, marketing communication should focus on the people who manage the CSS projects. Strategy consultants like McKinsey or the Boston Consulting Group have succeeded in portraying their employees as effective and efficient. Their communications strategy is devoted to reinforcing this message. They like to let others know that their recruitment requirements are very tough (see Figure 4.15).

Experienced consultants are encouraged to build up specialist know-how in specific areas so that they can be positioned effectively in the press. At the same time, the company invests in webcasts and customer conferences to position its employees as professional customer partners among relevant target groups. Another employee-focused communications tactic that the consultancy leverages is to send potential customers the CVs of the consultants who would be working on their project. These CVs often feature the names of renowned universities and outstanding examination results. They are designed to provide customers with a sense of security, even if the information has no direct bearing on the challenges of the specific consulting project.

Technology companies that are used for marketing advanced premium goods often find it difficult to get their heads around these kinds of employee-focused communication activities. This may be because they are not aware of the advantages of these methods. It may also be because these companies do not want to emphasize the importance

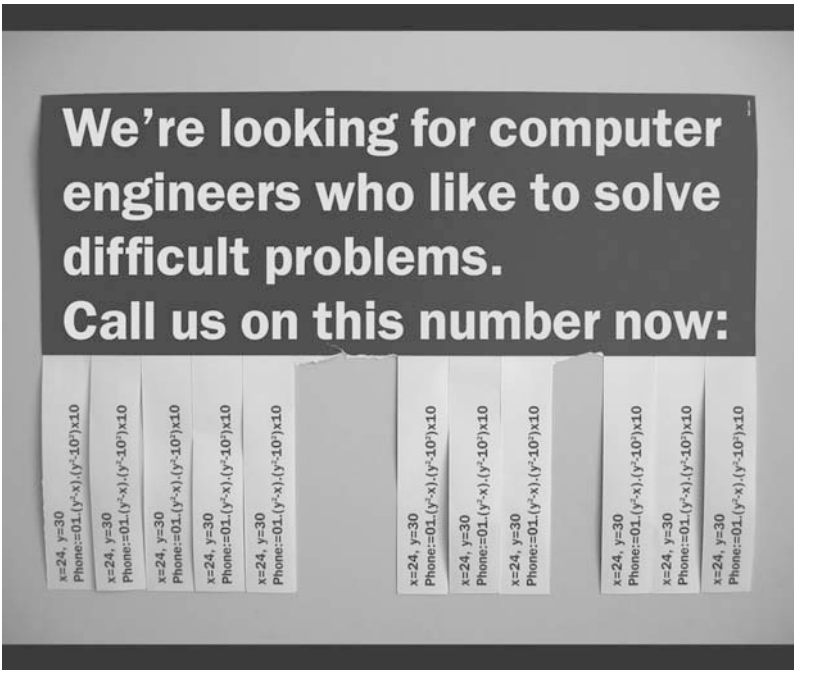


Figure 4.15 McKinsey advertisement
Source: McKinsey/Ruf Lanz Werbeagentur AG. Phone Numbers. http://www.ruflanz.ch/fsold.php. 06/17/2011

of individual employees at the firm's expense. After all, these employees could easily switch employers and use their reputation to benefit a competitor. If the aim is to establish a successful CSS business, the first reason would be fatal. The second, however, is understandable but incorrect. Rather than avoid employee-focused marketing communications, companies would be better served by implementing mechanisms for improving the loyalty of trusted project managers.

Unwise freebies and flexible pricing

The successful marketing of CSS poses a bigger challenge for many traditional technology companies than their implementation. Occasionally, these companies even provide services that offer similar added value to CSS – but

do not charge for them. In the past, for example, Voith provided extensive consulting services free of charge for technical configuration of a paper machine as part of the RFQ process. It is not necessarily wrong to provide services like these free of charge – even in the case of complex services. In some cases, it may even make good business sense to do so, as long as they account for only a low proportion of a company's total added value and make an important contribution to the long-term profitability of other business areas. Problems arise, however, when the focal point of the valued-added activities shifts increasingly toward services for which customers do not want to pay, resulting in other products having to bear the costs. This kind of cross-subsidization becomes dangerous when the competitive pressure for these priced products rises. In this case, some suppliers start offering these products without any extra services. Then they do not have to bear the costs of these services and can offer their products on the market at much lower prices.

An example from the telecommunications industry serves to illustrate this point. In the 1980s, Lucent and Siemens Public Networks were the leading suppliers of switching systems for telecommunication networks. They sold their high-quality products to companies such as AT&T, Deutsche Telekom (then Deutsche Post), and a number of other suppliers, most of which were state-run. These customers were just as proficient in technical matters as their suppliers and knew which products they required. This state of affairs changed when the industry was deregulated, first in the United States and then in many other countries. As early as the 1990s, new companies had purchased licenses for telecommunication services without having any special knowledge of the industry. They were interested in switching systems, but needed support to define their requirements in more detail. They wanted the know-how of companies like Siemens Public Networks and Lucent, namely, which configuration steps were needed for planning

their networks, where they should set up switching systems, and how they could optimize the data flow. In view of the potential sales offered by these companies, established suppliers like Lucent and Siemens Public Networks were happy to help. It became standard practice to provide a comprehensive analysis of the customer requirements and a customized network architecture when submitting a quotation.

The scope of these services grew strongly over the next few years. Because customers did not want to pay for them separately, costs were factored into the price of the switching systems. Increasingly, potential customers asked established companies to submit comprehensive quotations, but eventually awarded the contracts to new competitors, particularly Huawei in southern China. Back then, Huawei could not provide the same expertise for optimum configuration of international networks. Yet their switching systems cost less than those of established suppliers. The higher costs of established suppliers were due to not only their higher wage levels but also the large number of highly qualified staff, who offered consulting services free of charge. When the telecommunications industry's startup and financing boom came to a standstill worldwide in 2002 and pricing pressure was also exerted on major telecommunications companies, Lucent and Siemens Public Networks were unable to reduce their costs in line with market developments. Both made losses and gave up their dominant market position. Subsequently, the Siemens management board decided to withdraw from this segment and fused the lion's share of its telecommunications business with Nokia in 2003. Lucent was also not able to survive as an independent company and merged with Alcatel in 2006.

Similar problems are evident in the consumer goods industry. For example, customers wanting to buy a television set go to a specialist store for advice before subsequently

buying the product from a low-cost supermarket or on the Internet. Many retailers in this industry have suffered in the same way as Siemens Public Networks and Lucent. It can make sense to provide a few free consulting services to win a contract. However, if too many services are supplied without charge, this can jeopardize a supplier's existence. In other words, if traditional technology companies want to expand their scope of services, they need to rethink their business models. The stronger the service business becomes, the greater the financial pressure will be on companies to charge customers for these services. It is difficult to find the right time to make this change. Suppliers' own sales departments, in particular, are likely to object. They are scared of upsetting customers and fear that sales will decline in those areas that are currently the focal point of their sales activities. Sales departments will also mention competitors who still provide services free of charge and use this factor to gain a competitive advantage. These arguments are justified, but they must be weighed against the consequences of growing cross-subsidization. The easy but risky option is to continue to postpone changes that are needed in the long term due to short-term disadvantages.

CSS pricing is just as diverse as other business areas. Project-related working time is normally used as the basis for input-based pricing models. Daily rates that vary according to employee qualification and seniority are used as the unit of calculation. Fixed prices are also possible for CSS packages – the option that Voith Paper employs for its quality and energy audits. This form of pricing for CSS poses risks for suppliers, because they cannot be sure that their customers will provide the necessary support during the provision of services. If customers do not fulfill their obligations in a collaboration, suppliers usually have to dedicate more time to a CSS project. This drives costs higher than originally planned.

CSS suppliers also run risks if they choose to use output-based pricing models and employ evaluation parameters for those who depend directly on the customer's success and only indirectly on the service provided. This approach has become popular in recent years among many companies specializing in advanced premium goods. Employing *power by the hour* pricing models, turbine manufacturers such as Alstom, General Electric, and Siemens charge customers based on their turbine operating time. In this way, the supplier's revenue also depends on how skillfully buyers manage their customers' energy requirements. This market provides a good example of how one and the same supplier can apply different business models on the same market. Some customers still buy turbines, some lease them, while others hand over plant operation to the supplier and sell the energy generated to another customer.

These types of flexible business models can also be applied to CSS. As part of a Siemens Soarian project, for example, a hospital can decide to buy an archiving system for X-ray images, computer tomographs, and so on, and run it itself. Alternatively, the hospital can archive images on hospital servers operated by Siemens or use Siemens data centers as part of a private cloud computing solution. The pricing can then be based on data access or transfer volumes. As a result, before a decision on the pricing can be made, suppliers and customers must first define who is responsible for what, how the intellectual property rights are to be distributed, and who bears what risks. This can result in cooperation opportunities that transform CSS projects of limited duration into long-term business relationships. Against this background, the risks that CSS suppliers enter into their market with fixed-price or output-based models must be weighed carefully. During the market-entry phase in particular, these models can indicate the supplier's trust in the customer and thus create the basis for successful long-term cooperation.

Independence and competitive advantage

The merging of production and sales responsibility, the skills profile of CSS managers, their career development, and marketing communication and pricing policies cannot be compared with the advanced premium goods of traditional technology companies. Therefore, CSS business units also have to be managed differently, preferably as independent entities. Voith Paper took this step in 2010 by transferring the consulting services described above to a separate business unit. However, this kind of organizational separation can hinder the exchange of know-how among the individual areas or put a stop to it altogether, particularly if there are differences in salary, status, and career opportunities. IBM, for example, experienced such difficulties in 1992 when a former senior partner of the Booz Hamilton Group founded the IBM Consulting Group. This area was initially given the remit to operate independently; in Germany it even functioned as a legally independent unit. The managers were offered salaries and bonus packages that were standard among big-name strategy consultants – but not at IBM. With hindsight, this was seen as one of the main reasons why the unit failed to integrate successfully into the group and why the hoped-for synergy effects with the established product areas remained unused. The independence of this consulting group was reduced in 1996. IBM accepted the fact that some of the consultants would subsequently resign, but believed this was necessary to achieve a more standardized company culture.

Given problems like these, CSS areas of technology companies might entertain the idea of establishing their technical know-how independently of areas for advanced premium goods. An insurance company like Munich Re might be seen as a role model in this instance. In 2010, the company developed a new insurance product to safeguard the service guarantees of photovoltaic systems, to provide module manufacturers with more stable bases for planning

returns on investment, and enabling rapid liquidity in the event of a claim. Developing this complex insurance product calls for expertise in photovoltaic technology, while the certificate of insurance demands in-depth knowledge of production methods and technical standards. The responsible specialists at Munich Re were evidently able to acquire this expertise without the company itself having to manufacture photovoltaic systems.

However, applying the example of Munich Re to the CSS unit of a technology company can strongly limit its chance of success on the market. The company's technical expertise represents a key competitive advantage, particularly if this area has been developed from the advanced premium goods business as part of the *third wave*. This expertise can be used to raise the company's profile vis-à-vis potential CSS customers and to save the money needed to build up an independent section. The next section therefore focuses on how to strike an effective balance in independence and cooperation between new CSS areas and established departments for advanced premium goods.

Key statements

- Advantages of service-based revenue are often overestimated by technology companies due to a limited understanding of the service business.
- Based on the three key characteristics of intricacy, individuality, and importance, CSS can create sustainable barriers to market entry for new competitors.
- CSS managers require professional know-how in technology, business, and project management as well as soft skills such as communication, leadership, and creativity.
- Due to the high perceived risk, the customer's trust in a supplier plays a key role in CSS; a CSS supplier's marketing communication should therefore focus on the company brand and the competence and trustworthiness of its employees.

- The separation of sales and production departments in traditional technology companies has to be abandoned for CSS.
- Entering CSS business requires a new pricing strategy for goods-based companies – free services are a short-term benefit to the customer but might have long-term consequences for the supplier.
- CSS entities need high organizational independence within traditional technology companies, but intensive exchange of relevant know-how with other departments is needed.

CHAPTER 5

Perspectives

Conceptual perspectives

Chapters 3 and 4 provided examples of companies that developed their CSS and NFT activities from a traditional business base with advanced premium goods. As a result, they make both/and decisions rather than either/or ones. Siemens Building Technology, for instance, augments its product portfolio with NFT products such as Cerberus ECO, but it has also developed CSS options for the business field it operates in. For example, it has set up a consultancy group to optimize the energy efficiency of large building complexes for institutional customers. Siemens Building Technology has a team of 100 staff providing these services, which now generates annual sales of more than €300 million. The questions this raises for Siemens Building Technology's Swiss headquarters extend beyond the competitive strategies within individual business areas. They relate more to the overarching management of these areas with a focus more on corporate than competitive strategy.

Michael Porter's models in Chapter 2 serve as a starting point for the conceptual categorization of these corporate strategy developments. He takes an industry's product characteristics and then structures them along the two dimensions: cost position and customer benefit. In both dimensions, suppliers may reach an optimum cost-benefit level. A productivity frontier will materialize that could be shown in an ideal model as a 90-degree curve linking both

axes. While moving toward this productivity frontier, a supplier can improve both the customer benefits it offers and its own cost position, moving in a "northeasterly" direction until it reaches the productivity frontier. After this point, any improvements in one dimension will have detrimental effects on the other. We refer to these as trade-off effects.

Based on this concept, an NFT offering would be located toward the lower end of the productivity frontier and provide excellent cost-benefits. A CSS offering, on the other hand, would be located toward the upper end of the curve and would deliver particularly high customer benefits. However, the two offerings would only appear on the same diagram if assignment to the same market were possible. At the productivity frontier, suppliers can, in principle, optimize efficiency and effectiveness at any point on the curve. To achieve business success, however, the necessary customer demand must exist at the point of product positioning.

If an innovation appears for the first time on a market, it sets a starting point for further product developments. Just as the performance and costs of the first car by Carl Benz in 1885 have been continually improved over time, we also assume that other technical innovations leave room for quality enhancements as well as efficiency gains. In case of sufficient demand, heterogeneity of customer preferences, and competitive pressure, more suppliers will show up and create product offerings that utilize this room for improvement. The first version of the technical innovation will thus be diversified within different product offerings that are cheaper or better, and these new offerings will move the productivity frontier "northeast." In subsequent phases of market development, a large number of product offerings can appear that in an ideal model might cover the entire diagram's productivity frontier like a string of pearls (see Figure 5.1).

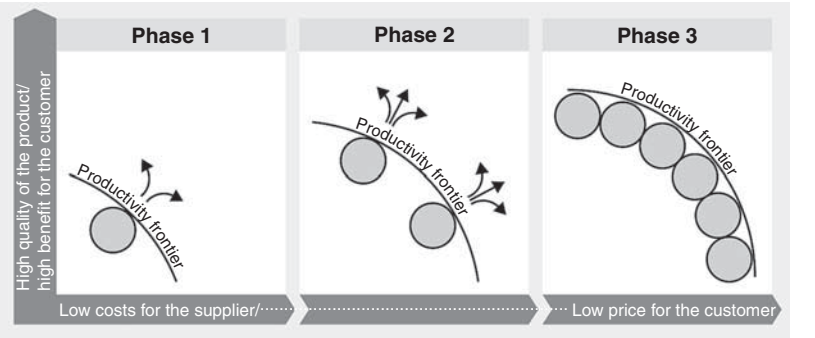


Figure 5.1 Model showing how product offerings develop following technical innovations

The different customer-demand characteristics in later market phases lead suppliers to ask themselves whether they should offer a product portfolio that meets all customer segments' specific requirements in a given market. Porter is skeptical about the expediency of such an approach, even if a supplier targets only two different segments toward both ends of the curve. According to him, pursuing different competitive strategies brings with it the risk of organizational confusion, an unfocused strategy, and demotivated employees. In explaining his argument, Porter refers to the example of US airline Continental. When it launched Continental Lite in the 1990s, the airline failed to penetrate low-cost market segments. The same fate subsequently befell other premium airlines such as British Airways. Porter identifies the main causes as inconsistencies in the reputations of the two different products, inflexible company resources (equipment, employees, systems, etc.), and inappropriate, overarching coordination and control mechanisms. Although Continental Lite offered a less expensive alternative to Continental's traditional product, the airline was unable to get as close to the productivity frontier as its no-frills rivals. Customers opted to use other no-frills airlines because they offered greater benefits for the same cost or the same benefits for a lower cost.

There are, however, also examples of companies that have successfully targeted several customer segments in the same sector with different generic competitive strategies. The Accor Group, mentioned in Chapter 3, appeals to different target groups with the luxurious Sofitel hotels as well as the low-budget options Etap and Formule 1. Volkswagen also caters successfully to different customer segments with its Skoda and Lamborghini brands. As the parent company sees it, these brands are successful not despite being part of the Group but because of it. In its view, a key reason for this success is the ability to leverage sales and/or cost synergies.

Three additional points have to be mentioned to put the Volkswagen example into proper perspective. First, we need to adopt a broad market definition to say that the various brands are active in the same market environment. This must cover the entire passenger-vehicle market rather than a small segment of it, such as sport cars. (That means that the definition of a market given by the European Commission, which was presented in Chapter 2, would not apply here.) Second, the Group's NFT activities do not extend to the lower end of the productivity frontier, where vehicles such as the Tata Nano currently cost as little as €1,750. Third, Volkswagen offers brands such as VW and Audi that it positions between the Skoda and Lamborghini customer segments. This third point is the most important one in terms of corporate strategy.

The potential synergies between products with relatively similar market positions such as VW and Skoda are greater than those for quite disparate brands like Skoda and Lamborghini. One concrete example is the PQ35 platform. Volkswagen uses it for the VW Golf, Skoda Octavia, Audi A3, Seat Toledo, and other vehicles that the Group manufactures. And in the high-end customer segments, Volkswagen – according to the press – is currently considering the Porsche Panamera platform for future use in new models of the Lamborghini (Estoque), the Audi A9, and a

planned four-door Bentley coupé. Vehicles can be said to have common platforms if numerous elements that are not directly visible have the same design and allow economies of scale. Examples include transmissions, steering systems, axles, brake systems, tanks, and exhaust systems. Naturally, this can also lead to cost synergies if the products are not positioned at the productivity frontier.

This example from the Volkswagen Group provides some initial answers to the question raised earlier: To what extent should companies augment their advanced premium goods portfolio with NFT and CSS? Doing so is definitely beneficial if they can realize synergies that create competitive advantages for the relevant products in their segment. The greater the resource and processing similarities necessary to produce and market products, the greater their potential synergies. Indirect synergies between different product offerings can also exist if companies position other, similar products between them. The model with the string of pearls depicts this scenario. It is, however, important to ensure that there is sufficient demand for all the products in the relevant customer segments.

Market dynamics are also a factor in the conceptual understanding of this issue. The productivity frontier can shift at any time through the development of new technologies, for instance. Customer demand and the position of segments are also subject to ongoing change, say, with regard to competition on the market. Suppliers therefore also need to keep an eye on their products' changing positions, especially if these have not yet reached the productivity frontier. Developments in the automotive industry in the 1980s illustrate this point perfectly. The cost leader, Toyota, steadily improved its quality, while German companies in the premium segment succeeded in making their processes more efficient. Based on Porter's model, the companies drew closer together. Toyota moved from the bottom right upward, while German suppliers moved from the top left to

the right. Meanwhile, the entire productivity curve in this industry shifted in a "northeasterly" direction.

Market perspectives

The emergence of different customer segments and product offerings increases the number of competitors. With a few exceptions, such as the construction of large commercial aircraft, suppliers of different sizes have become established on the technology markets. Small companies with advanced premium goods activities that focus on a single market sector find it more difficult to launch NFT and CSS than do large groups that are already established on a number of different markets. Such groups have greater experience in managing a diverse product portfolio. They also run less of a financial risk when entering a new business area. If entering a new market results in major financial losses, this can jeopardize a small company's very existence. A large group, on the other hand, can make up for a failure in one area with good results elsewhere.

According to Hermann Simon, the success of small- and medium-sized companies considered as hidden champions is associated with a specific corporate culture. It is the individual characteristics of an entrepreneur and/or the family that owns the company that shape this culture. In a particular market segment, such a culture can give small- and medium-sized companies the edge over large groups with a more diversified corporate culture. On the other hand, it can make it more difficult for them to accept change. It is a major challenge for a family-run company that has focused for generations on optimizing its advanced premium goods' technical performance to adapt to NFT markets. And it is particularly difficult for business areas with a "different culture" to be independent in such companies. Consequently, developments in new growth markets are leading many small- and medium-sized companies in industrialized

nations to step up their efforts in the area of advanced premium goods. Although this lowers their market share in the face of above-average growth of low-end and middle customer segments, even lower growth in high-end segments can increase sales. Furthermore, these companies often feel that new product sectors that are similar to their existing advanced premium goods offer better growth opportunities. This is because they do not necessitate any changes to their corporate culture or competitive strategy.

Groups like Siemens, on the other hand, have intensified their market, strategic, and cultural diversification. As a result, there are now examples of parallel activities with advanced premium goods, NFT, and CSS in virtually all divisions. Entering new business areas may not threaten large groups' very existence as it does with small companies. It does, however, present a number of challenges. Siemens' CSS and NFT activities still account for a far too insignificant proportion of total sales to claim overall success. If they also succeed in establishing themselves in the new market segments, though, groups like Siemens and General Electric will enjoy further global growth and build on their dominant position in numerous market sectors.

This ties in with the results Graeme Deans, Fritz Kroeger, and Stefan Zeisel obtained in 2002 when they examined the markets' consolidation tendency. They looked at the development of companies and their respective market shares in various sectors. This included analyzing the results of more than 135,000 merger and acquisition projects worldwide. The trend across all sectors was for *merger endgames* to result in an ever-smaller number of companies achieving ever greater market shares (see Figure 5.2).

Published the same year, *The Rule of Three* by Jagdish Sheth and Rajendra Sisodia also addressed the phenomenon of market consolidation. According to the authors' research, three leading "generalist" companies with a total market

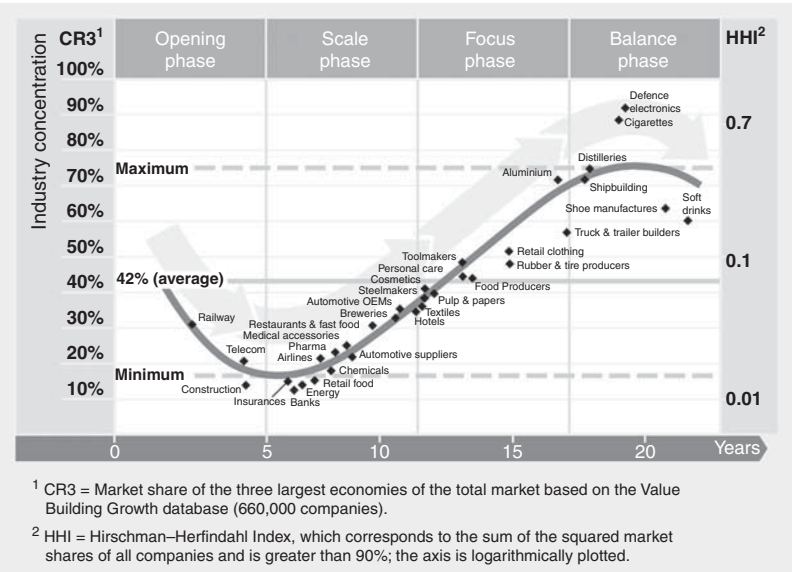


Figure 5.2 Merger endgames as illustrated by G. Deans et al.
Source: Kroeger, Fritz, Andrej Vizjak, Michael Moriarty (2008). *Beating the Global Consolidation Endgame*. New York: McGraw-Hill

share of 70–90 percent will ultimately emerge in unregulated markets. A large number of smaller, specialist niche suppliers will share the remaining sales. If existing markets merge to create a larger one, new competitors collide. Further consolidation ultimately reproduces the model of three dominant companies. Sheth and Sisodia use examples like the tire industry to explain this mechanism. In the 1970s, Goodyear, Firestone, and Goodrich had established themselves as the leading suppliers in the United States. Michelin, Pirelli, and Continental occupied similar positions in Europe. In Asia, the top three were Bridgestone, Sumimoto, and Toyo. This market's increasing globalization led to the companies competing with each other at the end of the 1970s. Michelin, Bridgestone, and Goodyear emerged as the three leading global companies.

Unlike the tire market, most technology-driven B2B markets have been global for quite a while. Consequently, the shift in existing market boundaries here is a result of the

new NFT customer segments and increasingly popular CSS. As in other sectors, though, the resulting market growth will lead to new competitive structures and consolidation. Some of the large technology companies in the West will remain among the leading competitors in their markets following this consolidation process – as long as they succeed in the necessary restructuring.

Naturally, the new technology companies from rapidly developing economies also seek to achieve a leading position in globally consolidated markets. They will need to make even more radical organizational changes, though. Stewart Black and Allen Morrison are among the commentators questioning whether they will succeed. In 2010, they published an article in *Harvard Business Manager* entitled "The Globe: A Cautionary Tale for Emerging Market Giants." They based their argument on parallels between companies in the BRIC countries today and how Japanese businesses have fared over recent decades. In the 1980s and 1990s, Japanese companies took up dominant market positions in numerous technology-driven sectors. In 1995, their joint sales accounted for 35.2 percent of the total sales generated by the global Fortune 500 companies. By 2000, however, this proportion had fallen to 20.8 percent. In 2009, it was just 11.2 percent. Over the same period, companies in Western Europe and North America saw their share of sales grow compared to Japan. The development was by far not as dynamic as the growth that companies in the BRIC states are currently experiencing, though. Their share of sales has jumped from less than 1 percent to over 10 percent (see Figure 5.3).

Black and Morrison maintain that Japanese companies primarily owed their strong growth to the size of Japan's domestic market, its inaccessibility to foreign competitors, and the close links between the country's businesses and political institutions. They also point out that Japanese blue- and white-collar workers and managers very much identified with their corporate culture. As a result, they

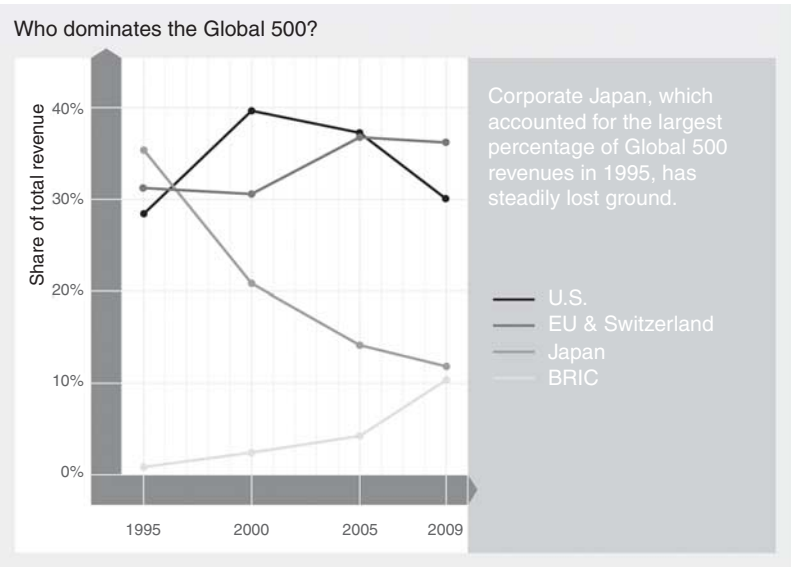


Figure 5.3 Change in share of sales among the Fortune 500 companies

Source: Black, J. Stewart, Allen J. Morrison (2010). The Globe: A Cautionary Tale for Emerging Market Giants. *Harvard Business Review* 88: 101

closely worked together to make their companies more competitive. According to Black and Morrison, however, it was this common cultural identity that stood in the way of Japanese companies' long-term global success. The authors cite the example of Japanese cell phone manufacturers. Sharp, Panasonic, Fujitsu, NEC, Toshiba, and Sony all set their sights on global expansion in 2000, but none of them achieved a leading position. Although their corporate culture enabled them to develop technically excellent products, it ultimately prevented them from catering to foreign markets' cultural diversity. One reason for this was their almost exclusively Japanese management teams' insistence on sticking to their own corporate culture.

The parallel Black and Morrison draw with the companies from rapidly developing economies appears clear. Even companies that have recently made it into the Fortune 500,

such as Huawei and Tata Motors, primarily owe their strong sales growth to success in a large, fast-growing domestic market. It is also particularly difficult for foreign competitors to access the Chinese and Indian markets, whether because of bureaucracy, market regulation, or the customer segments' unique cultural requirements. These new, up-and-coming companies also have close links with political institutions in their home countries. In some cases, they are even state-owned. In addition, both Indian and Chinese companies are bound by their society's traditions. The importance of personal networks, such as China's famous *guanxi,* leads to the same homogeneity that stood in the way of Japanese companies' internationalization. Similarly, a system that encourages rapid product development with limited resources – referred to as *jugaad* in India – will not succeed in creating technology leaders in the construction of gas turbines, satellites, or submarines. Diligence, a focus on quality, and planning management are more important requisites than speed, cost-benefits, or the ability to improvise.

Therefore, companies from rapidly developing economies looking to achieve a leading position in consolidated technology markets worldwide need a far more radical rethink and far more restructuring than the established advanced premium goods suppliers. Market newcomers need to work even harder to adapt to regional characteristics in the various countries if they are to turn their local customers and employees into trusted partners. They also need to establish international corporate cultures based on global, entrepreneurial concepts – if nothing else than to attract top executives worldwide. The history of Japanese companies has shown how difficult it is to make this cultural adjustment. There are undoubtedly also parallels with the small- and medium-sized companies in the West referred to earlier. Some find it particularly difficult to gain a foothold in NFT markets because of their specific corporate culture. Up-and-coming companies in growth countries are at an

advantage, though, because success in their large domestic markets gives them far greater financial resources. Consequently, they are able to enter new markets without running financial risks that threaten their very existence.

A number of companies from rapidly developing economies are already working on introducing a global, internationally accepted corporate culture. One example is HCL, an IT company founded in India in 1976. It currently has a workforce of 77,000 and generates annual sales of US$ 5.5 billion. In 2005, company CEO Vineet Nayar decided to realign the corporate culture. His focus was on modifying the traditional Indian management hierarchy and making the company more "democratic." Measures included introducing 360-degree feedback, allowing staff to structure their working hours, and encouraging them to speak directly to the CEO about any problems at the company. The cultural transformation paid off. Since 2005, sales growth has been significantly above the industry average. Customer satisfaction has improved, too. HCL has continued its internationalization strategy and is now represented in 29 countries. Nayar's book on this subject, entitled *Employees First, Customers Second,* became a bestseller in 2010. And in 2011, he received the Leader in the Digital Age award at CeBIT in Hanover.

Although HCL's development is not representative of all technology companies from the rapidly developing economies, it does show that some of them are entirely capable of making a transformation that puts them in a good position to succeed outside their large domestic markets. Unlike Black and Morrison, we therefore also expect a number of companies from today's rapidly developing economies to take up leading positions on the technology markets as a result of global consolidation. They are also less reliant on organic growth than were their Japanese predecessors. Instead, they are taking the opportunity to buy companies in industrialized nations. Examples include

Geely's acquisition of Volvo and Tata's takeover of Jaguar. Therefore, we consider a study by the Boston Consulting Group to provide a more realistic assessment than Black and Morrison's findings. It predicts that around 50 companies from the new growth markets will make it into the Fortune 500 over the next five years, and that 15–20 of them will be in the Fortune 100 by 2021. The Japanese economy Black and Morrison refer to can be used to provide examples to support this prediction, because companies like Sony and Toyota have without doubt achieved global success.

Corporate perspectives

Rather than the development of companies from BRIC states, the focus in this case is on companies, mostly in the West, that are looking to penetrate new CSS and NFT markets from an established sales base with advanced premium goods. A key success factor in implementing this strategy lies in incorporating the new business areas into the organizational structure of a corporation. When Siemens Building Technologies was setting up its Cerberus ECO business, for example, it established a management entity at the fifth group level with the same management team that is responsible for Sinteso premium products. The diagram below shows the Group structure. Given Siemens AG's size, a *business segment* at the fifth level can have 1000–3000 employees and a similar headcount as a small- or medium-sized company. (The company's product-oriented organizational structure shown here has an additional regional dimension. This produces the matrix structure on which Siemens AG is based, see Figure 5.4.)

Incorporating a business area into a management entity within the existing organizational structure of a company raises the question of how this can help increase its business value. Andrew Campbell, Michael Goold, and Marcus Alexander coined the phrase *parenting advantage* in 1995

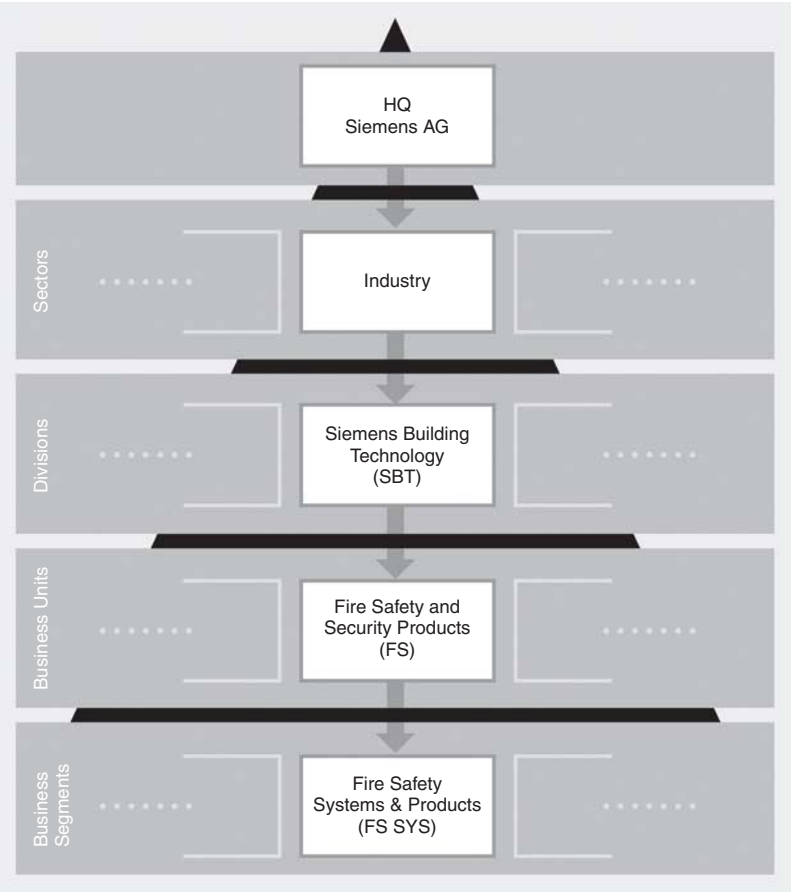


Figure 5.4 Siemens AG's product-oriented organizational structure in June 2011

Source: Compiled by the author (according to Siemens AG)

when investigating the conditions needed to successfully integrate a new division into an existing group organization. In their view, this higher level organization can have a value-added effect if it performs general centralized functions (e.g., HR management) more efficiently, provides capital, creates sales synergies, and performs both planning processes and operational decisions more professionally. The success factors in the new business must, however, fit in with a company's *parent characteristics* – that is to say its culture, capabilities, structures, and processes.

The problem here is that NFT and CSS success factors appear to have little in common with the business characteristics for advanced premium goods. This is because their success is based primarily on ongoing technical developments. Such developments focus on delivering high quality and are normally managed centrally. NFT success, on the other hand, primarily depends on manufacturing basic products at the lowest possible cost and transferring development and product responsibility to the target markets. The most important CSS success driver is customer cooperation, both before and during the project, which leads, for instance, to a break with the standard practice for advanced premium goods of making different people responsible for sales and production. Applying the logic of Campbell, Goold, and Alexander, incorporating CSS and NFT business into an organization shaped by advanced premium goods and using the same management team would therefore not be a promising approach. On the other hand, it has been demonstrated above that the new areas depend on support, especially in terms of know-how transfer. Giving them the greatest possible independence may therefore not be the best option.

The concept of the *ambidextrous organization* that Charles O'Reilly and Michael Tushman introduced in the *Harvard Business Review* in 2004 offers one possible way of addressing this dilemma. One of their examples relates to incorporating an online news service into *USA Today*. In view of the cultural differences between print and Internet media, the management team initially allowed the two services to operate independently. Their economic success left a lot to be desired, though, and their relationship was more competitive than cooperative. In 2000, the then president of *USA Today*, Tom Curley, added a TV news channel to the product portfolio and introduced some new rules. On the one hand, he gave the three business areas considerable independence in terms of organization, processes, and selecting their staff and location. On the other hand, he

introduced an incentive system that offered rewards for supporting the other areas and exchanging personnel. Curley also insisted on the three areas' top management working closely together and attending daily meetings to leverage synergies, mainly in news content. He linked their variable remuneration to the joint success of all three areas. This success did, in fact, materialize.

Technology provides the main potential for synergy at the companies we are interested in. Leveraging this potential despite the cultural differences between advanced premium goods, NFT, and CSS can result in competitive advantages for the individual businesses. This should not be restricted to a one-way knowledge-transfer from advanced premium goods to the new business areas. Two-way transfer should be in place by the time a sound NFT and CSS business base exists, if not before. This, though, requires innovative technical NFT solutions that are sufficiently inspired to give impetus to advanced premium goods, too. The same applies to CSS, which can help provide valuable insights into application challenges at the customer level and create interfaces between advanced premium goods and other technical systems.

A company that operates on several markets should also leverage potential synergies within NFT and CSS areas, though. In 2005, Siemens therefore set up a group at its Munich headquarters to coordinate the now more than 100 NFT initiatives throughout the company. The group's internal name – SMART – stands for simple, maintenance-friendly, affordable, reliable, and timely-to-market products. It pools NFT-related market information, encourages knowledge-transfer between the relevant engineers and managers, and advises them. The group is not responsible for business results, though. Nor does it have any authority over the operational business units. Company management is sticking to its policy of structuring the top management levels according to products and/or technology applications. Despite this, an increasing number of CSS

and NFT business areas have already reached the fourth group level. This gives them greater independence, for example, when making personnel and investment decisions. At large companies, a group's revenues normally determine its level in the organization. If Siemens can achieve the ambitious CSS and NFT sales-targets in the years ahead, it will only be a matter of time until the top three levels of the company's organizational structure change accordingly.

NFT and CSS growth also impact a company's regional subsidiaries. Chapter 3 stated that technology companies in the West should transfer management responsibility for NFT business from headquarters to rapidly developing economies. This shift in power structures comes with an increasing headcount in the new growth markets, which is also being encouraged by CSS expansion.

Further sales growth and company restructuring also change the role of the headquarters. The growing organizational complexity makes it increasingly difficult for group headquarters to gain an insight into individual areas' business activities. As a result, its operational influence is increasingly ineffectual and it is harder to create a parenting advantage. Instead, the headquarters of groups enjoying global growth will focus in the future on creating appropriate underlying conditions for their new areas. A point that previous management literature has referred to only rarely in the past – namely, a company's ability to influence political decisions in a country or region – will become more significant as a result.

Political perspectives

People often complain that the world's governments are powerless to do anything about economic globalization and can only stand by and look on. This criticism is largely leveled at multinational companies, which are accused of not being answerable to politicians. It is definitely true

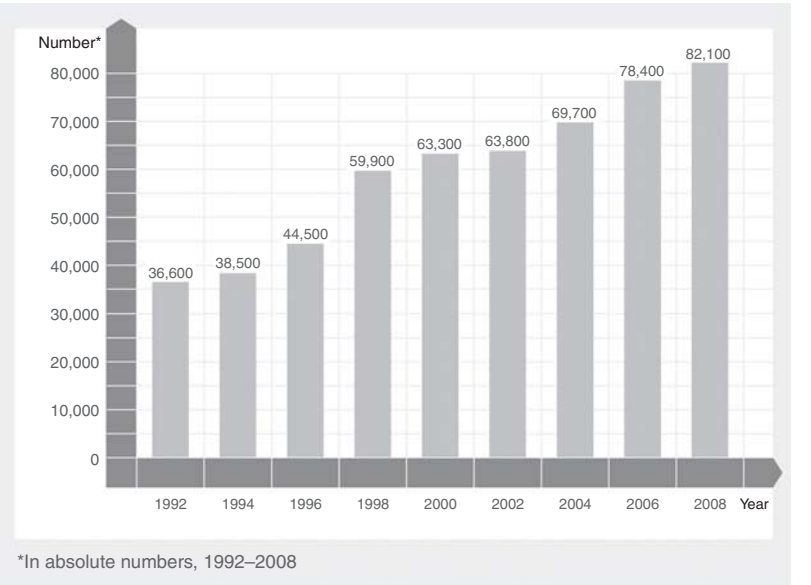


Figure 5.5 Number of transnational companies
Source: Bundeszentrale für politische Bildung (2010). Globalisierung. www.bpb.de. 07/02/2011 (according to UNCTAD: World Investment Report, various years)

to say that transnational companies have become a more important part of the global economy since the 1980s. Their investments, their sales, and the number of their staff working abroad have all risen since then. Furthermore, the number of transnational companies has more than doubled in the past two decades (see Figure 5.5).

Volkswagen may want to maintain a certain German tradition with its global slogan "Das Auto." With production facilities currently in more than 20 countries, however, the majority of its products are by no means still *Made in Germany*. Most of Volkswagen's staff are now no longer from Germany either.

The national affiliation of such companies becomes increasingly blurred. Political, media, and public perceptions, however, are not changing at the same pace. The public still

sees Volkswagen, Daimler, and Siemens as German companies, and General Motors, IBM, and General Electric as American. This perception is dictated by factors such as the country where the company was founded, the national ownership structure, and the nationality of the management board. Back in 1990, before he became US labor secretary in the Clinton administration, Robert Reich wrote an article entitled "Who Is Us" for the *Harvard Business Review,* in which he claimed that these indicators are misleading. Reich insisted that the key factor was how much added value a company generated in each country. Accordingly, he maintained that a company with American shareholders and top management that conducts all its research activities and production operations in other countries is less American than one with foreign owners and management that conducts the majority of its value-added activities in the United States.

One illustration of just how difficult it is for political institutions to adapt to global companies' structures is the way they allocate national subsidies. Companies in Germany that apply for state funding for research projects (in 2010 €22 billion) have to conduct and "utilize" these projects in Germany. This is not a problem for small- and medium-sized technology companies with staff working in Germany. A group like Volkswagen, on the other hand, necessitates a rather free interpretation of the guidelines. In 2011, Volkswagen and its subsidiaries received over €80 million of funding for 69 projects from the federal government of Germany. It is hard to imagine a situation in which, for example, the results of a research project about battery cell design for low CO_2-emission automobiles were not subsequently also used by the company's predominantly foreign subsidiaries.

In terms of their political influence, global companies' growth further increases their investment budgets and the number of jobs they can create. Furthermore,

internationalization gives them even more options when choosing a location and state to benefit from these jobs and investments. Situations in which several countries compete for investment of a corporation in their country are a poignant example. When Volkswagen was looking for a location for a new plant in Eastern Europe last year, it considered Slovakia, Romania, and Hungary. All three states offered inducements, including tax incentives such as a temporary exemption from corporate taxes. Generally speaking, business tax rates have fallen worldwide – in the EU from 38 percent in 1993 to 23 percent in 2010.

This is an indicator of the competition between states that opponents of globalization refer to as the "race to the bottom." In his 1995 book titled *When Corporations Rule the World*, the American author and anti-globalization campaigner David Korten portrays multinational companies' global growth as a threat. According to the 1996 study published by Sarah Anderson and John Cavanagh from the Institute for Political Studies in Washington, DC, 51 of the world's 100 largest economic systems are global companies and 49 are states. A repeat study in 2001 produced the same result. The only difference was that some names of the 51 companies had changed. This led to reports in the media that Ford, for example, was bigger than South Africa in economic terms and Walmart was bigger than 161 of the world's countries.

Anderson and Cavanagh's results do, however, demonstrate the need for more detailed analysis and a more nuanced approach when addressing this issue. Their study compared companies' sales with countries' gross domestic products (GDPs). This is problematic because the former includes purchased materials and services, whereas the latter does not. Taking into account only the added value of a company like Walmart and subtracting the costs of purchased goods from generated sales would produce far less spectacular results when compared to national economies.

According to the OECD, the total amount of tax that companies pay on earnings has risen, including in relation to GDP. This refutes the *race to the bottom* argument. When it comes to the global threat allegedly posed by large companies, political institutions oppose these companies' interests – and do so very steadfastly – if they risk breaking competition laws. In 2009, for example, Intel was fined more than €1 billion for this very reason. Just a few months ago, the US Securities and Exchange Commission demanded US$ 800 million from Siemens. Political institutions have ensured that large energy and telecommunications companies in industrialized nations make their networks available to competitors. They have also enforced the sale of environmental certificates to reduce harmful industry emissions. In addition, antitrust authorities rein in large companies' growth by banning mergers. In 2001, for example, the EU Commission prevented American technology companies General Electric and Honeywell from merging. In Germany, the Federal Cartel Office put a halt to the planned merger of TÜV Rheinland and TÜV Süd in 2008. More recently still, Chinese companies in particular have felt hampered in their globalization efforts by political interventions. Technology company Huawei has seen authorities thwart several attempts to expand in the United States by taking over companies such as 3Com or 3Leaf. It has also had similar experiences with the antitrust authorities in the United Kingdom and India.

Whereas the balance of power between the state and companies is disputed in Western industrialized nations, there is no question of who is in charge in China. Despite the growing number of private businesses there, the state runs the largest companies. According to figures from the Chinese Chamber of Commerce and Industry published by news agency Xinhua in 2011, the profits of the two state-owned companies China Mobile and Sinopec exceeded those of the country's 500 largest private businesses in 2009. Only 10 percent of the more than US$ 1.4 billion that China's banks

loaned to businesses in 2009 went to private companies. And even if it does not own them, the Chinese government can still exert a strong influence over private businesses. The same applies to global companies from other countries that set up operations in China. Volkswagen is one of numerous examples. Its experiences in China have been very different from its previous ones in Eastern Europe. Volkswagen was planning to build a new production facility in the city of Foshan in southern China to better meet demand in what is now the world's largest automotive market. Construction was due to start in 2010. China's political leaders wanted Western automakers to join forces with Chinese partners to establish a dedicated vehicle brand to boost e-mobility in China. The intellectual property rights were to remain in China. Volkswagen's management team in Wolfsburg was initially reluctant to go along with this. According to reports in Germany's *manager magazin*, this reluctance resulted in the Chinese state not giving the go-ahead to build the plant in Foshan. But at the beginning of 2011, Karl-Thomas Neumann, chairman and CEO of Volkswagen Group China, made it known that Volkswagen was now planning a joint brand with a Chinese cooperation partner after all. According to information from Volkswagen, it obtained the necessary approvals for the construction project in Foshan in spring 2011.

Even though China does not necessarily act as an example for Western governments, industrialized nations have also started working on giving political institutions greater power over companies. The recent economic crisis provided an ideal opportunity to do so because it left many companies reliant on state support. In many cases, the relevant governments made ownership rights a condition of this support. Within Europe, the French government made particular use of this strategy in 2008/09. The French state now has a direct or indirect interest in more than 250 companies through the Fonds Stratégique d'Investissement and/or the state bank Caisse des Dépôts et Consignation. Another

outcome was an increase in the number of government representatives on the supervisory boards of companies such as Renault and Air France-KLM. Unlike in countries such as the United States, the French state does not claim it will reduce its involvement after the crisis.

Political institutions' power over business is not solely a result of state interests in companies, though. The example of China shows that the main factor in the state's political power over companies is the size of the market a government controls. Seen from this perspective, European states would also do well to work together more closely in the future and strengthen the EU's political institutions. Issues involving antitrust law have already shown that decisions taken at the European level have greater impact than those taken at the national level. Greater cooperation is also needed in other economic areas such as fiscal policy.

Large companies' global structures necessitate greater political power on a global level, too. There are some global institutions, such as the World Trade Organization and the International Monetary Fund, but the recent crisis has demonstrated that they still have little influence over companies or governments.

According to Parag Khanna, though, it is no longer the right time to strengthen political power. In his 2011 book entitled *How to Run the World*, he sets out a concept for running the world in which traditional political institutions no longer play a major role. Instead, he predicts that a dynamic network of diverse interest groups will shape society's global development. He believes that multinational companies will have a greater say, too, which ties in with our view that Group headquarters will increasingly see their task as exerting influence over social policies. Khanna also predicts that NGOs such as Transparency International and the Environmental Defense Fund will become more important across the globe. The same will apply to large

benevolent associations, religious communities, and many other interest groups organized loosely via the Internet. Thanks to modern communication technologies, they can organize themselves across borders and form new alliances. These technologies also give them access to a global public and enable them to exert pressure on institutions, companies, and states. Against this background, Khanna expects to see a global renaissance in intellectual humanism.

There are indicators for a development of this kind, but questions remain over the long-term extrapolation. Overall, history has shown that efforts to improve prosperity repeatedly lead to tensions and conflicts between communities, leaving hardly any room for intellectual humanism. Given the growing world population and ever-scarcer resources, it is impossible to rule out global conflicts in the future. Political institutions will regain their power over large companies once these conflicts are quashed by militaries, if not before. This will once again raise questions over globalized corporate structures that currently appear beneficial.

Key statements

- If companies operate on different markets with advanced premium goods, CSS, and NFT, management is a question of corporate strategy (and no longer competitive strategy).
- CSS and above all NFT increase market potential and thus the size of the companies that operate successfully on these markets. It is easier and less risky for large companies to augment their portfolio of advanced premium goods with CSS and/or NFT than it is for small companies.
- To play a leading role on globally consolidating markets, technology companies in rapidly developing economies would need to change the very characteristics that previously made them strong.

- If a company makes greater use of CSS and/or NFT, "ambidextrous organization" is an appropriate way of achieving a compromise between the independence the various groups need and the required synergies in technology know-how.
- As companies become larger and more international, having a say in political decisions represents an increasingly important parenting advantage.
- The increasing power of global companies in Western countries is creating a need to strengthen political institutions. International communities play a particularly important role in this respect.
- If global political or military conflicts occur, this will once again raise questions about globalized corporate structures.

FURTHER READING

Abernathy, W. (1978). *Productivity dilemma: Road block to innovation in the automobile industry*. Baltimore: Johns Hopkins University Press.

Adner, R. and D.C. Snow (2010). Bold retreat: A new strategy for old technologies. *Harvard Business Review* 88(2): 76–81.

Anderson, J.C. and F. Wynstra (2010). Purchasing higher-value, higher-price offerings in business markets. *Journal of Business-to-Business Marketing* 19(1): 29–61.

Anderson, S. and J. Cavanagh (1996). Corporate empires. *Multinational Monitor* 17(2): 26–27.

Ansoff, H.I. (1965). *Corporate strategy*. New York: McGraw-Hill.

Asare, K.A., T.G. Brashear-Alejandro, E. Granot and V. Kashyap (2011). The role of channel orientation in B2B technology adoption. *Journal of Business and Industrial Marketing* 26(3): 193–201.

Axt, P.G. and A. Brink (2009). Die Ethik deutscher Wertarbeit im internationalen Kontext, *OSCAR trends Magazin* 1.

Biggemann, S. and K.-S. Fam (2011). Business marketing in BRIC countries. *Industrial Marketing Management* 40: 5–7.

Black, J.S. and A.J. Morrison (2010). The globe: A cautionary tale for emerging market giants. *Harvard Business Review* 88(9): 99–105.

Busch, A. (2009). *Wirtschaftsmacht Brasilien: Der grüne Riese erwacht*. Munich: Carl Hanser Verlag.

Campbell, A., M. Goold and M. Alexander (1994). *Corporate-level strategy*. New York: John Wiley & Sons.

Chandler, A.D. (1969). *Strategy and structure. Chapters in the history of the American industrial enterprise.* Cambridge, MA: MIT Press.

Chesbrough, H. (2011). *Open services innovation: Rethinking your business to grow and compete in a new era*. New York: John Wiley & Sons.

Chesbrough, H.W. (2006). *Open business models*. Boston, MA: Harvard Business School Press.

Christensen, C.M. (1997). *The innovator's dilemma: When new technologies cause great firms to fail*. Boston, MA: Harvard Business School Press.

Christensen, C.M. and M.E. Raynor (2003). *The innovator's solution: Creating and sustaining successful growth*. New York: McGraw-Hill Professional.

Clausewitz, C. von (2010). *Vom Kriege*. In *Rowohlts Klassiker der Literatur und Wissenschaft, Deutsche Literatur*. Band 12 (1963). Reinbek bei Hamburg: Rowohlt.

Collins, J. (2001). *Good to great: Why some companies make the leap . . . and others don't*. New York, NY: Harper Business.

Deans, G., F. Kroeger and S. Zeisel (2002). *Winning the merger endgame: A playbook for profiting from industry consolidation*. New York: McGraw-Hill.

Ehret, M. and J. Wirtz (2010). Division of labor between firms: Business services, non-ownership value, and the rise of the service economy. *Service Science* 2(3): 136–145.

Ekman, P. (2009). *Telling lies: Clues to deceit in the marketplace, politics, and marriage*. New York: Norton & Company.

Feinberg, S.E. and A. Gupta (2004). Knowledge spillovers and the assignment of R&D responsibilities to foreign subsidiaries. *Strategic Management Journal* 25(8/9): 823–845.

Friedman, T.L. (2005). *The world is flat: A brief history of the globalized world in the twenty-first century.* London: Allen Lane.

Gilbert, X. and P. Strebel (1987). Strategies to outpace the competition. *Journal of Business Strategy* 8(1): 28–36.

Gu, F.F., K. Hung and D.K. Tse (2008). When does guaxi matter? *Journal of Marketing* 72(4): 12–28.

Hamel, G. and C.K. Prahalad (1994). *Competing for the future*. New York: McGraw-Hill.

Harder, P.K. (1969). Major factors in business formation and development: Germany in the early industrialization period. In ed. Charles J. Kennedy *Business and Economic History*, first series, vol. 5.

Holst, I. and P. Bräunlein (2008). Wie deutsche Produkte die Welt eroberten. In *Spiegel Online*, April 27.

Immelt, J.R., V. Govindarajan and C. Trimble (2009). How GE is disrupting itself. *Harvard Business Review* 87(10): 56–65.

Jung, A. (2008). Das erste Wirtschaftswunder. *Spiegel Special*, 5.

Khanna, P. (2011). *How to run the world: Charting a course to the next Renaissance.* New York: Random House.

Khanna, T., J. Song and K. Lee (2011). The Paradox of Samsung's Rise. *Harvard Business Review* 89(7/8): 142–147.

Kim, W.C. and R. Mauborgne (2005). *Blue ocean strategy: How to create uncontested market space and make the competition irrelevant*. Boston, MA: Harvard Business School Press.

Kleinaltenkamp, M. and S. Fliess (2004). Blueprinting the service company: Managing service processes efficiently. *Journal of Business Research* 57: 392–404.

Korten, D.C. (1995). *When corporations rule the world.* West Hartford, CT: Kumarian Press; San Francisco, CA: Berrett-Koehler Publishers.

Kroeger, F., A. Vizjak and M. Moriarty (2008). *Beating the global consolidation endgame: Nine strategies for winning in niches*. New York: McGraw-Hill.

Kumar, N. (2006). Strategies to fight low-cost rivals. *Harvard Business Review* 84(12): 104–112.

Lovelock, C. and J. Wirtz (2010). *Services marketing*. Upper Saddle River, NJ: Prentice Hall International.

Marcus, A.A. (2006). *Big winners and big losers: The 4 secrets of long-term business success and failure*. Philadelphia, PA: Wharton School Publishing; London: Pearson Education (distributor).

Nayar, V. (2010). *Employees first, customers second: Turning conventional management upside down*. Watertown, MA: Harvard Business School Press.

Nohria, N., B. Roberson and W. Joyce (2003). *What really works: The 4+2 formula for sustained business success*. New York: Harper Collins Publishers.

Oetinger, B. von, T. von Ghyczy, C. von Clausewitz and C. Bassford (2001). *Clausewitz on strategy: Inspiration and insight from a master strategist*. New York: Wiley.

O'Reilly, C.A., and M.L. Tushman (2004). The ambidextrous organization. *Harvard Business Review* 82(4): 74–81.

Peters, T.J. and R.H. Waterman (1982). *In search of excellence: Lessons from America's best-run companies.* New York: Harper & Row.

Piercy, N.F. (2010). Evolution of strategic sales organizations in business-to-business marketing. *Journal of Business & Industrial Marketing* 25(5): 349–359.

Piercy, N.F. and N. Lane (2010). Strategic customer management: Strategizing the sales organization. *Journal of Business-to-Business Marketing* 17(4): 406–409.

Ploetner, O. (1995). *Das Vertrauen des Kunden. Relevanz, Aufbau und Steuerung auf industriellen Märkten*. Wiesbaden: Gabler.

Ploetner, O. (2008). The development of consulting in goods-based companies. *Industrial Marketing Management* 37: 329–338.

Ploetner, O. and M. Ehret (2006). From relationships to partnerships – New forms of cooperation between buyer and seller. *Industrial Marketing Management* 35(1): 4–9.

Ploetner, O. and R.E. Spekman (eds) (2007). *Bringing Technology to Market*. Weinheim: Wiley-VCH Verlag.

Porter, M.E. (1980). *Competitive strategy*. New York: Free Press.

Porter, M.E. (1989). *Competitive advantage of nations*. New York: Free Press.

Porter, M.E. (1996). What is strategy? *Harvard Business Review* 74(6): 61.

Prahalad, C.K. (2009). *The fortune at the bottom of the pyramid*. Prentice Hall International.

Raddatz, C. (2011). Aligning industrial services with strategies and sources of market differentiation. *Journal of Industrial Marketing* 26(5): 332–343.

Reich, R. (1990). Who is us? *Harvard Business Review* January–February: 2–12.

Reihlen, H. (1992). Christian Peter Wilhelm Beuth. Eine Betrachtung zur preussischen Politik der Gewerbeförderung

in der ersten Hälfte des 19. Jahrhunderts und zu den Drakeschen Beuth-Reliefs. Beuth Verlag.
Rosenzweig, P. (2007). *Making the halo effect*. New York: Free Press.
Schumpeter, J.A. (1939, 1961). *Konjunkturzyklen. Eine theoretische, historische und statistische Analyse des kapitalistischen Prozesses* [Business cycles. A theoretical, historical, and statistical analysis of the capitalist process]. Vol. I. Göttingen, 1961 (English edn New York, 1939).
Sheth, J. N. and R. Sisodia (2002). *The rule of three: Surviving and thriving in competitive markets.* New York: Free Press.
Sheth, J.N. and A. Sharma (2006). The surpluses and shortages in business-to-business marketing theory and research. *Journal of Business & Industrial Marketing* 21(7): 422–427.
Shostack, G.L. (1984). Designing services that deliver. *Harvard Business Review* 62(1): 133–139.
Simon, H. (2009). *Hidden champions of the 21st century: The success strategies of unknown world market leaders*. New York: Springer.
Tietz, J. (2008). Ein Label geht um die Welt, *Spiegel Special*, 5.
Vargo, S.L. and R.F. Lusch (2004). Evolving to a new dominant logic for marketing. *Journal of Marketing* 68: 1–17.
Verma, S., K. Sanghi, H. Michaelis, P. Dupoux, D. Khanna and P. Peters (2011). *Companies on the move: Rising stars from rapidly developing economies are reshaping global industries*. Boston Consulting Group report, January.
Wang, J. (2010). ZPMC leads industry development by integration and innovation. Report, China Executive Leadership Academy Pudong.
Wang, R. and Jing Song (2011). Business marketing in China. Review and prospects. *Journal of Business-to-Business Marketing* 18(1): 1–49.
Wiggins, R.R. and T.W. Ruefli (2005). Schumpeter's ghost: Is hypercompetition making the best of times shorter? In *Strategic Management Journal* 26(10): 887–911.
Wilkinson, A., A. Dainty and A. Neely (2009). Changing times and changing timescales: The servitization of manufacturing. *International Journal of Operations & Productions* 29(5): 7.

Yang, Z. and C.L. Wang (2011). B2B marketing in a guanxi context: Theoretical development and practices. *Industrial Marketing Management*, 40(4): 489–491.

Yao, X., C. Watanabe and Y. Li (2009). Institutional structure of sustainable development in BRICs: Focusing on ICT utilization. *Technology in Society* 31(1): 9–28.

INDEX