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DCXNET: E-TRANSFORMATION AT DAIMLERCHRYSLER

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Abstract

The teaching case covers the story of DCXNET, the e-business initiative of DaimlerChrysler from 2000 to 2002. It focuses on the challenges for the automotive industry due to the evolution of e-business technology and how these challenges have been dealt with at DaimlerChrysler. The case is embedded in the context of today's the e-business hype and describes the management approach, results, and success factors of the initiative as well as lessons learned.

Keywords: E-transformation, e-business, DaimlerChrysler, DCXNET, COVISINT, alignment

The Industry

As we enter the 21st century, the automotive industry finds itself in a quite difficult situation. The growth rate of the European car market is near zero and the world's most important economy, North America, has been hit massively by the worldwide economic downturn after the end of the .com hype and as a result of 9/11/01. In the 1930s, there were approximately 300 independent car manufacturers; by the end of the 1990s, seven independent manufacturers remained. The industry structure is currently stable and further consolidation, due to legal aspects, is unlikely. In the light vehicle market, the five largest manufacturers¹ have a market share of about 70 percent. And competition is tough. According to *The Economist* (see Figure 1), the car industry is operating with increasing overcapacity. Vehicle sales in the NAFTA region have decreased and the car market in western Europe is stagnant. Furthermore, customers demand better service and faster delivery. Market transparency has increased with the advent of the Internet. As demand is volatile, manufacturers are driven to cut costs (e.g., by economies of scale), maximize flexibility, and foster customer loyalty. As for example, an average C-Class model from Mercedes Benz consists of approximately 260,000 parts, the coordination of suppliers from all over the world is a major challenge. According to Davis (2001) it "takes an average of 54 days to get a car built and delivered to its customer today while only one or two of those days are actually spent on assembly; a full 36 days go by, according to a report by Roland Berger in June 2000, creating a schedule for production processing orders for materials and purchasing supplies."

The Company

In May 1998, Germany's Daimler-Benz AG and USA-based Chrysler Corporation announced the largest industrial merger in history. The result of this merger has been the establishment of the world's fifth largest car maker. Today, DaimlerChrysler is one of the world's leading automotive, transportation, and services companies. Its passenger car brands include Mercedes-Benz, Chrysler, Jeep, Dodge, smart, and Maybach. Commercial vehicles are produced under the Mercedes-Benz, Freightliner, Sterling, Western Star, Setra, Thomas Built Buses, Orion, and American LaFrance brands. DCX, the share abbreviation on the New York Stock Exchange of DaimlerChrysler, offers financial and other services through DaimlerChrysler Services. With 372,500 employees, DaimlerChrysler achieved revenues of €152.9 billion (\$136.1 billion) in 2001. Figure 2 shows the board of DaimlerChrysler in 2002.

¹General Motors, Ford, DaimlerChrysler, Volkswagen, and Toyota.

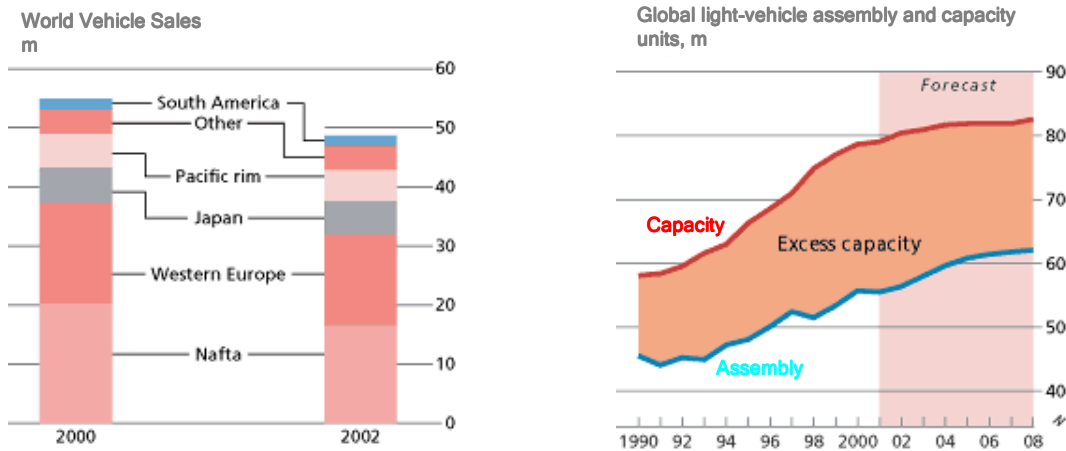


Figure 1. Vehicle Sales and Capacity in the Car Industry
(Source: "Downhill Racers," *The Economist*, March 29, 2001.)

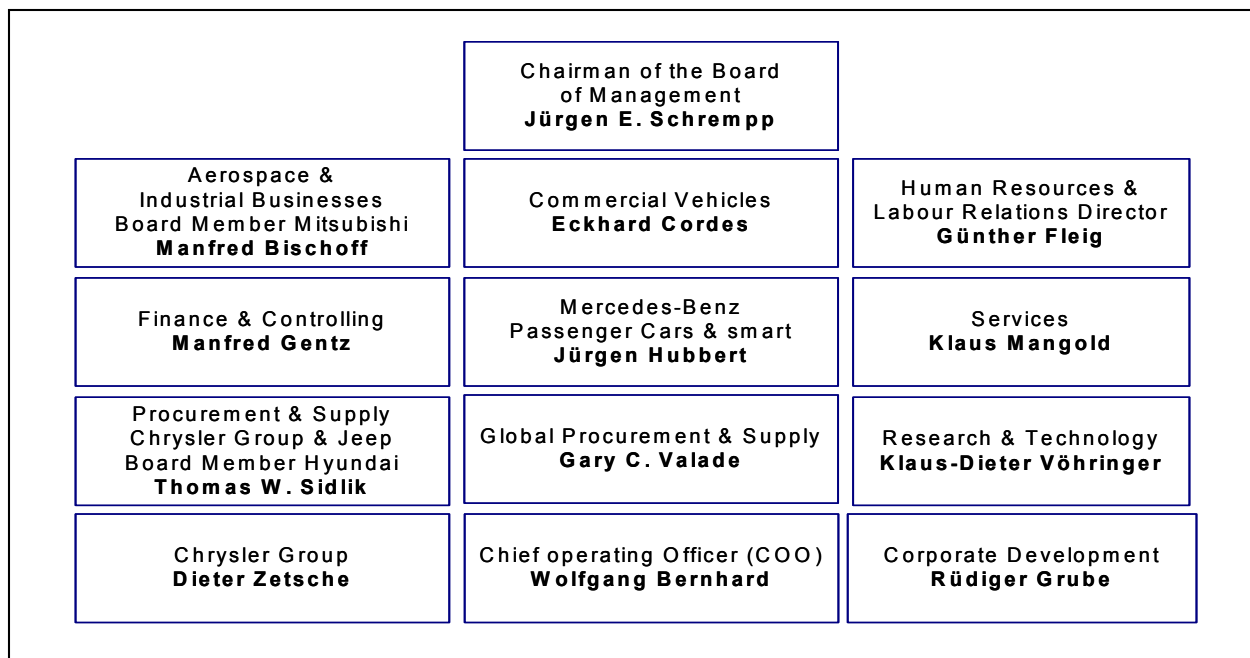


Figure 2. The Board of DaimlerChrysler

The Challenge

In 1998, corporate headquarters in Stuttgart and Auburn Hills were busy managing the consequences of the merger. Although operating profits rose (DaimlerChrysler 1998), not all analysts were convinced that the merger of Daimler-Benz and Chrysler would unfold as a success story. The shareprice took a nosedive in late 1998 (see Figure 3).



Figure 2. Shareprice of Daimler Benz/DaimlerChrysler 1992-2002

(Source: http://www.daimlerchrysler.com/index_e.htm, used with permission)

The merger was difficult to manage not only because of cultural differences, employees of both companies had strong ties to their local sites and cultures. Furthermore, financial pressure drove the company's executives and engineers to push for economies such as platform- and component-sharing. However, as business processes of the two companies were quite different, quick wins due to synergies were not on the horizon: For example, Chrysler deployed platform teams for the development of new cars whereas Mercedes-Benz used cross functional units (such as electronics or gear systems) for all series. During spring 1999, the Lagezentrum (Corporate Strategic Research and Control Center) at the headquarters in Stuttgart perceived that new ways of doing business were breaking ground. The Lagezentrum had been established in 1995 to generate strategic intelligence for the Board of Directors. The staff recognized increasing media coverage for e-commerce and conducted some preliminary surveys and analyses. Olaf Koch, then head of the Lagezentrum, describes the situation as follows:

In June 1999 it was clear that eBusiness would be a major topic in the automotive industry for the next 10 years. We conducted a couple of briefings for members of the Board of Directors. We tried to find out, which implications the Internet would have for our business processes.

At about the same time (May 1999), Autobytel launched its initial public offering. Autobytel sought to revolutionize the way to sell cars by linking car manufacturers and customers electronically. Strategy consultants heralded that, in the future, the single most important sales channel for cars would be the World Wide Web. Car manufacturers perceived this as a major threat for their profitability for several reasons. First, increased market transparency around the world would hinder price differentiation strategies. Second, mediators could accumulate buying power and thus squeeze margins of the manufacturers. And third, sales channel conflicts could harm the relationship between dealers and manufacturers. Ford and General Motors were key drivers of the e-revolution in the automotive industry among car manufacturers. They established separate e-business units in an attempt to reinvent the automotive business. On August 10, 1999, GM announced e-GM, a separate Internet business unit that integrated all e-business efforts of the world's largest car maker. The focus of e-GM was on building electronic shopping malls that offered customers car-buying information. Similarly, Ford on September 15 announced a reorganization of its e-commerce activities into a new enterprise. DaimlerChrysler did not want to rush into the same hype, even if the company would risk missing the opportunities of the Internet. A continuous stream of presentations, papers, and concepts from consultants and analysts, all calling for massive investments to transform DaimlerChrysler into an e-business company, poured on the desk of Olaf Koch. Although DaimlerChrysler had launched its Customer-Connect Program in early 1999 to link brands and customers worldwide, the real business potential of the Internet to network the entire value chain had yet to be exploited. Due to these external developments, the Lagezentrum together with the IT department suggested, in September 1999, conducting an accelerated strategic planning process for e-business at DaimlerChrysler. This was approved by Dr. Rüdiger Grube, then Senior Vice President in charge of corporate strategy at DaimlerChrysler. This planning process aimed at clarifying the core of e-business: what really makes the difference in the wired age? Which role would the corporate IT function (information technology management, ITM) play in this process? As part of the planning process, staff from the Lagezentrum and ITM gave a presentation for the Board of Directors in December 1999. The presentation focused on two key subjects:

1. What is the potential impact of the Internet on our business?
2. What are our competitors doing regarding e-Business?

The analysis of the Lagezentrum focused on three major areas: (1) sales processes and the value chain, (2) product features, and (3) supply chain.

- Sales processes and the value chain: New players such as autobytel.com and Microsoft's CarPoint entered the car market swiftly. They stepped into the car makers' value chain between dealers and customers. The purpose of these companies was not only to sell cars on the Internet, but also to provide information transparency, sell related services like information on current incentives or rebates, and capitalize on direct contact with customers by supporting parts of the retail process.
- Product features: For example, GM's OnStar initiative focused on telematic services like personalized information and safety services to foster ongoing contact between OEM and the customer. With the advent of smart phones, telecom companies tried to equip cars with enhanced information and communication capabilities (see i-mode of NTT DoCoMo in Japan or E-Plus in Germany).
- Supply chain: E-business allows the optimization of supply processes and could provide a viable business case through global marketplaces, which would allow suppliers, dealers, and other business partners to do business with each other online.

Based on the results of the analysis which were embedded in the description of initiatives of DaimlerChrysler's major competitors (General Motors and Ford), the Board of Directors demanded the Lagezentrum to examine e-business-related activities of each division. By the beginning of March 2000, Dr. Grube presented a status quo report at a Board meeting: Although most divisions used the Internet for marketing purposes, that is, they displayed information about their products and organization, only minor effort had been spent on the design of transaction- or collaboration-oriented systems on the demand/supply side of the value chain of DCX. Furthermore, activities were fragmented and lacked central coordination. By the end of March, survey teams were deployed to discuss the opportunities of e-business from each division's standpoint. The survey teams were equipped with a questionnaire to guide and structure the discussions. One of the underlying assumptions of this process was that success was dependent on a bottom-up definition of e-business. The most important reason for that was the relationship between experience and learning. Olaf Koch describes the relationship:

Well, there was no doubt that the world was changing rapidly. But we had the perception that it was easier for, let's say a sales executive, to learn how to enhance his sales business using the Internet than for an Internet guru to learn how to sell cars. After all, we have no e-business but business and the fundamentals of the automotive business did not change.

The major competitors of DaimlerChrysler continued their e-business activities. On November 2, 1999, General Motors and Ford declared that they would transfer their *purchasing operations* to the Web. AutoXchange, a joint venture between Ford and Oracle, aimed at connecting Ford to its material and parts suppliers over the Internet. GM, together with CommerceOne, forged GM MarketSite for the same reasons: connecting suppliers, business partners, and customers on a single platform to increase supply-chain efficiency. AutoXchange claimed up to 20 percent savings on procurement and inventory for the case of Ford. Microsoft's Carpoint, launched in 1995 joined forces with FordDirect, a joint venture between Ford Motor Co. and its Ford Division Dealers (*The Economist* 1999). This initiative focused on the customer side of the car makers' operations and aimed at the manufacturing of built-to-order cars. By the end of March 2000, the Internet economy imploded (in slow motion). Boo.com, a London-based Internet sports-good business, an icon of the new economy, died "as it had briefly lived—ridiculously over-hyped" (*The Economist* 2000a). Shareholders were startled, and by the end of June 2000, CBOE Internet Index² businesses lost 50 percent of their value. The downturn of the so-called new economy had an impact on e-business related activities in every industry. Until March 2000, analysts asked DaimlerChrysler executives, why there was still no eDCX unit. Fall 2000 brought a new culture of questioning every action taken with a relationship to e-business. In late March 2000, another e-business related Board meeting at DaimlerChrysler took place. Staff from the Lagezentrum and ITM explained and discussed current e-business activities in the automotive industry and which core questions the divisions should address in their presentations. Presenters included staff from all major passenger car and commercial vehicle brands of DCX, and from research, technology, and procurement/logistics. The presentation started with a strategic outlook section, given by Dr. Grube. This section portrayed the current situation and scenarios of selected topics. These included brand portals, telematics, market places, built-to-order cars, e-financing and others. The discussion about current e-business topics led to three questions to be addressed by the divisions. The answers to these questions formed an e-business action plan for each division (Figure 4).

² The Chicago Board Options Exchange (CBOE) Internet Index included, in 2000, Amazon, AOL, AtHome, CMGI, Cisco, Doubleclick, Ebay, Earthlink, Exodus, Inktomi, Infospace, Realnetworks, and Yahoo.

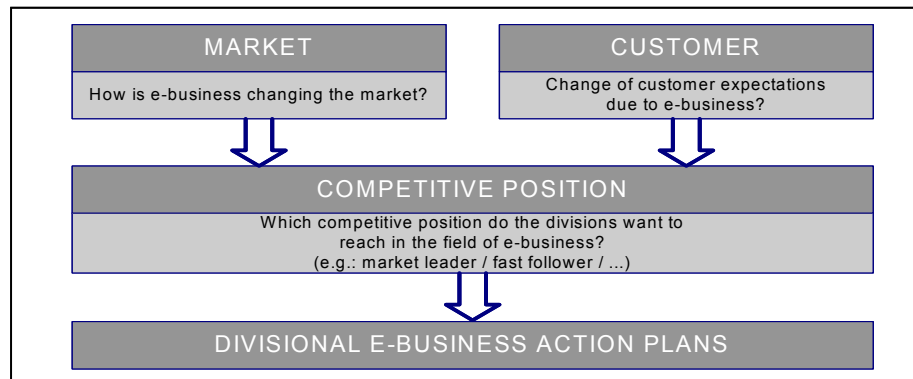


Figure 4. Divisional Approach for E-Business Development

After the strategic outlook session, the divisions presented their vision of the Internet as a business process enabler. The discussion among board members and executives from the divisions resulted in five high priority action plans in the business-to-consumer and business-to-business areas.

- B2C: Action plans were developed to define and execute a DCX portal strategy, and a content and portal alliances strategy, and to build interactive relationships with customers. To support the buying process, the plan was to bring all transaction capabilities online. An evaluation of the direct sales approach was launched. Furthermore, a set of measures was developed to keep contact with the customer.
- B2B: In order to increase the speed from order to delivery, e-engineering and e-manufacturing initiatives were discussed. In addition, the plan was to strengthen the relationship with dealers by electronic means. To achieve efficiency and effectiveness improvements, it was clear that a crucial issue of e-business implementation would be deep interaction of back-end systems at DaimlerChrysler. Thus, the information technology function (ITM) had to be a central part of DCXNET efforts. Without the support of ITM experts, DCXNET could not succeed. Still, DaimlerChrysler did not establish new organizational structures dedicated to e-business. It became clear, however, that a coordinated effort was necessary.

The Answer

Mission, People and Structures

One result of the Board meeting in April 2000 was to develop an organization to coordinate all e-business related activities. This organization had been labeled DCXNET Initiative and it began operations in May 2000 with the following mission statement:

The “DCXNET initiative” is intended to make the company faster, more efficient and therefore more competitive throughout all areas across the entire value chain, from purchasing to sales. The name DCXNET is derived from the DaimlerChrysler stock symbol and has been selected in order to emphasize the fully networking every aspect of its activities. (Source: DCXNET Annual Report 2001.)

The perception from outside was that something similar to e-GM was underway at DaimlerChrysler. But unlike GM and Ford, DaimlerChrysler did not establish DCXNET as a functional unit. As technology has been seen as an enabler to increase process effectiveness and efficiency rather than a function in its own right, DCXNET is a temporal initiative with a limited lifetime of approximately 24 months. This reflects the perception of the Board that DaimlerChrysler did not have e-business, but rather electronically enhanced/enabled processes. The role of DCXNET was to facilitate e-transformation by questioning legacy processes and to promoting change together with process owners. According to that role, Olaf Koch had an informal contract with Eckhard Cordes after he was assigned to lead the e-business initiative together with his colleagues:

I had a meeting with Dr. Cordes and I told him that I would come back in two years and ask him two questions. The first question will be: Do you have the feeling that our effort made DaimlerChrysler more efficient and

effective? If no...my team [and I] have failed. If yes, the second question will be: Are you convinced, that the process owners will use and further develop e-business in the future? If so, it is better to have them responsible for e-business. We will do the tracking and monitoring for some time, but there is no need for a separate organization; we can do that within corporate development.

To achieve its goals, DCXNET Initiative has been organized as shown in Figure 5.

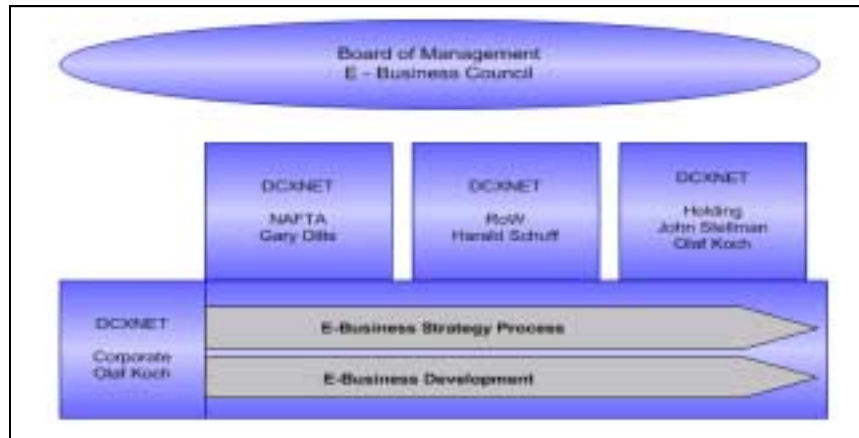


Figure 5. Organization of DCXNET
(Source: DCXNET Annual Report, 2001)

The organizational structure reflects the international core of DaimlerChrysler's activities. Furthermore, it reflects the change management approach of DaimlerChrysler. The Board did not install a separate business unit, they did not hire an external consultancy to encourage and monitor change. DCXNET has been staffed with "car guys" from several business divisions and functional areas inside DaimlerChrysler. The DCXNET Holding integrated and monitored all financial stakes of the company with relation to e-business. Olaf Koch was head of strategy at the corporate level as well as e-business development. Together with John Stellman, Koch leads DCXNET Holding. Gary Dilts (Senior Vice President, eConnect Platform DaimlerChrysler) was responsible for the operative e-business integration at the Chrysler Group at the time. He was also responsible for coordination of all e-business activities in the NAFTA region. Harald Schuff (Senior Vice President, Development Sales Organization) was responsible for all such activities outside the NAFTA region and for Mercedes-Benz passenger cars and commercial vehicles. Both are also in charge of the development of marketing strategies for their respective areas of responsibility. The organization reports directly to the Board of Directors. These report meetings (internally called e-Business council) took place monthly as part of a Board meeting and served as a coordination mechanism between all organizational units involved. Participants at these meetings were Board members, the four e-business managers (Olaf Koch, Gary Dilts, Harald Schuff, and John Stellman) of DCXNET, and Sue Unger, CIO of DaimlerChrysler. The e-business council monitored all e-business activities and discussed and provided solutions for upcoming problems. By the end of June 2002, regular meetings at the Board level were discontinued, since the most important projects were underway. Since June 2002, the DCXNET Initiative has taken responsibility for the monitoring of e-business projects together with Jochen Carle, who reports to Dr. Grube. The organization at the corporate level was staffed with 25 employees, the Chrysler Group with Gary Dilts responsible for the NAFTA area, was staffed with 37 people. The procurement function worked with 72 and Mercedes-Benz car and truck division with about 50 employees from every part of the world. All in all, approximately 180 employees were assigned to transforming DaimlerChrysler into a networked company. One of the major challenges was to staff the new corporate e-business team with people familiar with the processes in high priority areas as identified above. For the corporate level, Olaf Koch describes the profile he was looking for as follows:

Three principles led me through the hiring process. Firstly, people had to have strong ties to the divisions they were responsible for. Their personal network in the company was a key asset we needed to succeed with e-business. Secondly, people had to be enthusiastic about using information technology to enable new ways of doing business. Thirdly, since we are a temporal organization, people had to be flexible regarding their assignment and ready to move on to new challenges when our effort eventually succeeds. We all know, the staff of every division has to feel comfortable with e-business, as they are the owners of the process of implementation. I did not need some revolutionary experts, but rather moderators with a personal network in the company.

These principles reflect the implicit role model of the corporate e-business staff: they acted as moderators rather than advocates of change. Although people at DCXNET were formally internal to DaimlerChrysler, they were viewed as outsiders in relation to the change target. Thus, they were well aware of the collective identities and emotional dispositions of their target groups (Fiol and O'Connor, 2002, p. 533).

Components of DCXNET

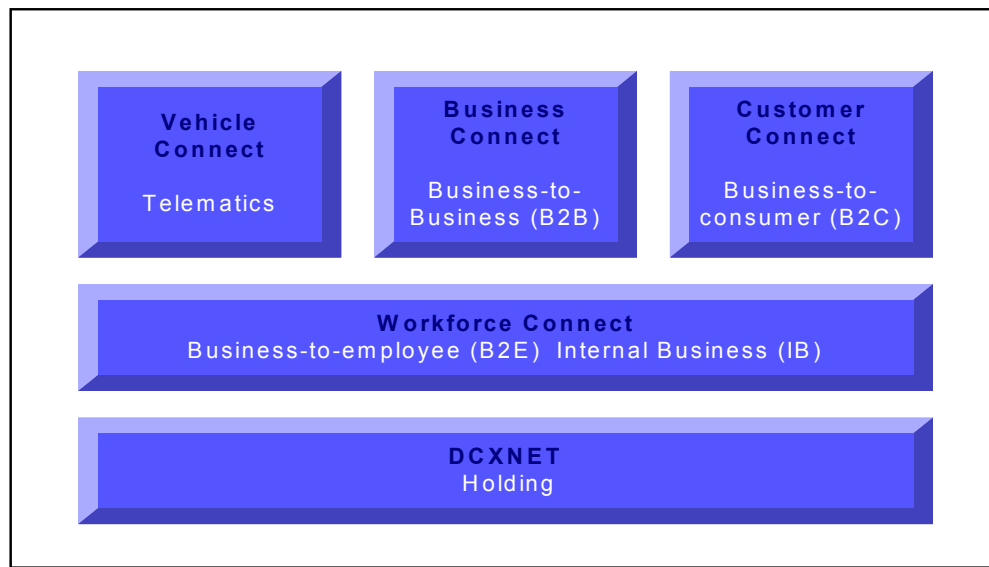


Figure 6. Components of DCXNET
(Source: DCXNet Annual Report, 2001)

In order to get some information about the financial dimension of the measures discussed at the meeting in April 2000, the financial department of DaimlerChrysler asked each division about their cost estimation for e-business projects. Olaf Koch describes the result as follows:

Well, this is something anecdotal. When we summed up all requests, we saw a remarkable number. It was not sky high, but remarkable. The reaction from the Board on that was remarkable too. They said: "It's great that you want to spend the money on e-business projects. This shows us that you take the matter serious. But, we suggest that you try to integrate this in your own budget. What we are going to do is to provide resources for the best business cases. You can apply for that money and the e-Business council will make a decision."

Although the organization had been established and announced in June 2000, not all employees at DaimlerChrysler were enthusiastic about the new DCXNET initiative. Usually, new organizations claim responsibilities, budgets, and people—scarce resources. The divisions initially were concerned about the function, management style, and responsibilities of DCXNET. When DCXNET staff met with division staff, there was an atmosphere of uncertainty in the beginning. For example, the sales divisions of Mercedes-Benz and Chrysler were critical about the role of the Internet for their business (as autoweb and autobytel emerged on the scene). The unfavorable work climate changed quickly, however, with direct interaction between the moderators of corporate e-business and target groups:

When we met our partners in the divisions, the first thing we made clear was, that they were the owners of the process and that we were a temporal unit to help them. After 15 minutes we had a quite relaxed conversation about e-business opportunities. [Olaf Koch]

Following discussions on the objectives of the initiative, teams consisting of people from DCXNET and the departments proposed projects within the key areas identified above. The basis for these projects were the presentations, given by the divisions in March 2000 and a considerable (€550 million) budget that was dedicated to be spent primarily on strategic investments to capture technology and intellectual capital. It turned out later that spending the total amount was not necessary.

Business Connect

The greatest efficiency gains were expected in the B2B area. The challenge to foresee the demand for certain products in the auto industry is more difficult than in other industries, due to longer and complex product creation and production cycles. Building a completely new, segment-busting model like the Chrysler PT Cruiser always implies many uncertainties about the market reaction and acceptance and, therefore, the volume planning (for details, see Konicki 2001). Within Business Connect, a project was launched to help solving this problem. The *FastCar* initiative aims at connecting developers, suppliers, and other functional units of DaimlerChrysler (e.g., marketing) in order to provide real time information about changes in the car configuration. FastCar is an Internet-based development platform that integrates the geometry of design with all its CAD-data (computer-aided design) with the business infrastructure (suppliers, procurement, and finance systems). To realize this vision, DaimlerChrysler uses i2 and Dassault Systems CAD applications. It informs and enables all stakeholders during the development of a future Chrysler Group vehicle to make immediate decisions based upon changes in weight, cost, speed, and technology of the design in order to accelerate the workflow within the vehicle development process. It also engages the suppliers in the process much earlier than in the past. The business rationale of FastCar is to shorten the development cycles and to overcome communication barriers within the supply chain. Secondly, design accounts for only 5 percent of the overall development costs, but that 5 percent directly affects and impacts approximately 70 percent of the total costs of that vehicle (DCXNET Annual Report 2001). Therefore, it is crucial to assess the impact of changes in the configuration in order to meet target costs of a development project.

According to Gerbert and Birch (2001), Covisint (an acronym of **C**ollaboration, **V**ision, **I**ntegration; www.covisint.com) was kind of a shock for manufacturers worldwide, since it aimed at the restructuring of the value chain of the automotive industry and could serve as an example for other industries as well. Launched in February 2000 by DaimlerChrysler, Ford, and General Motors, it became operative in October 2000 after approval was given by control commissions in the United States and Europe. Never before has an industry so large and complex attempted to do so much so fast (Davis 2001). Analysts at that time of the Internet and stock market hype were enthusiastic about global marketplaces. Covisint would command \$240 billion in purchasing power and some individuals estimated that supply chain optimization with Covisint could save up to \$3,000 from the production cost of an average car (Wallace 2000). Olaf Koch describes the business rationale of Covisint as follows:

If OEMs were to develop their own e-business solutions, suppliers would have to deal with a myriad of different applications and interfaces. This would lead to an enormous complexity within the industry. If, in the case of online auctions, every car maker would develop a separate portal for its suppliers, its own e-business tools for supply chain management, one supplier would have to run and maintain several systems in parallel. And car makers could not benefit from joint tool development.

Covisint is an integral part of business connect within DCXNET. The functional focus of Covisint is to provide common Web-based services in three areas: purchasing, supply chain management, and joint product development. The COVISINT platform offers services in the following areas: (1) collaboration, (2) procurement, (3) supply chain management, (4) quality management, and (4) portal features. In the collaboration area, the so-called collaboration manager provides a virtual project workspace, which facilitates information exchange, communication, and coordination among members of virtual project teams. In the procurement area, Covisint offers the following set of features:

- **Auctions/Online Biddings:** after designers together with marketing and product creation come up with a specification of a new product, a manufacturer has to decide on which parts to make or buy from suppliers. Once this decision is reached, the car manufacturer traditionally enters into a so-called RFQ process, which consists basically of multiple rounds of negotiations. This time-intensive activity is still a one-to-one activity conducted over a number of days. Companies have identified a growing need to streamline processes by electronically enabling negotiations via the Internet. Buyers can decrease the time it takes to negotiate prices and create a one-to-many sourcing environment that promotes market pricing. With the Buyer Auction tool, a buyer can establish an on-line event, invite all participating suppliers to submit bids, and conduct the auction in a matter of hours (Source: Covisint).
- **Quote Manager:** an electronic document management, analysis, and collaboration tool that supports the automotive sourcing process. The tool provides a central, on-line repository of sourcing documentation, where documents can be posted, viewed, edited, and/or downloaded by authorized users through a Web browser. Potential users of this product include purchasing, engineering, and design representatives from both buying and selling organizations.
- **Catalog:** in order to simplify the steps in the paper-based process by which indirect or maintenance repair and operation material (MRO) is purchased, Covisint offers a catalog service. The paper-based process involves the buyer in a timely

process, scanning through different catalogs to find an item, manually creating a requisition, and submitting it for approval. Once approved, the order will be sent by fax, mail, or EDI to the supplier. With the catalog feature, a buyer can order all MRO material online through a customized catalog.

- **Supply Chain Management:** the supply chain management features of Covisint focus on fulfillment services for the automotive supply chain. It allows sharing information about inventory levels usage history and patterns, forecasting, in-transit inventories, receipts, and other relevant information between buyer and suppliers and helps to eliminate excess inventory and premium transportation charges. The fulfillment service allows for real-time information and enables buyer and supplier to respond quickly to changes in inventory levels and consumption. Covisint started at the time of the dot-com hype with high aspirations, but nevertheless its success remains at best on a medium level. Suppliers did not buy into the solution as quickly as estimated: by mid-January 2001, only 20 suppliers had signed up for the new mega exchange. Covisint generates annual revenue of \$60 million, which is below projections (Sedgwick et al. 2002). Kevin English, CIO of Covisint, resigned in June 2002. His successor is Harold Kutner, a former GM executive. When Kutner retired as General Motors' purchasing chief in 2001, three supplier CEOs were among the attendees at his farewell party. Kutner has a reputation as a tough negotiator, and asked later why they honored an executive who had made their lives so difficult, one supplier quipped, "We wanted to make sure he was really gone" (Sedgwick et al. 2002). Since the autumn of 2002, Kutner is back—with a different task, though. Rather than squeezing margins of suppliers, his mission is to convince them that the big three (GM, Ford, and DaimlerChrysler) will not use Covisint as a tool to increase time pressure and market transparency for their advantage only. Covisint's most popular service is reverse auctions, that is, suppliers bid for the right to sell a specific part or component to a manufacturer and the lowest bid wins. As a consequence, many of the approximately 7,000 suppliers who use Covisint since mid-2002 do so because there is some pressure from manufacturers. A vice president of a midsized supplier insists on not using Covisint since "you can't put enough perfume on that pig to suggest that it represents quality, delivery or financial responsibility for suppliers....All Covisint does is look for low bids. It's just a bid-trolling process" (Sedgwick et al. 2002). In order to turn Covisint into a profitable market platform, it is crucial to achieve a critical mass of transactions to break even. That will not work without suppliers.

Customer Connect

One of the most visible projects in the customer connect area is the Mercedes-Benz Portal (www.mercedes-benz.t-online.de), launched in August 2001 as a joint venture of DaimlerChrysler and T-Online, the Internet provider of Deutsche Telekom. The range of services offered by the multichannel portal includes route planning with current traffic and weather reports, news, an office function with a calendar, news, and transaction services for car rentals, hotels, and much more. All services are accessible either from a standard browser, a WAP cellphone, Call Center, via personal digital assistants, and, since January 2003, via the Mercedes-Benz Portal Online Package in the A-Class. Harald Schuff, Senior Vice President, Development Sales Organization & Automotive e-Business, explains this strategy:

To date, our customers have generally been visiting dealerships no more than twice a year. The Mercedes-Benz portal now allows us to provide our customers with specific information on a regular basis—and stay in contact with them....In addition, we can use the appeal of our premium services to attract interested visitors to our brand.

Another project of the customer connect program has been developed at the Chrysler Group. Since September 2000, MarketCenter focuses on premium (five star) Chrysler dealers in North America and offers the opportunity to buy office and workshop equipment as well as other business-related requirements bundled online via the Chrysler MarketCenter. The costs are lower due to larger buying power as well as the reduction of handling costs through Web-based order processing and consolidated invoicing. DCXNET executives report cost savings of 15 to 20 percent for 52 percent of the 4,500 Chrysler Five Star dealers who used the portal in 2001 (Source: DCXNET Annual Report 2001).

Vehicle Connect

Vehicle Connect refers to telematics solutions of DaimlerChrysler. Telematics focuses on IT-enabled mobility services. Examples are *information*—general news, location-based services, e-mail; *transaction*—mobile commerce, e.g., banking, tickets; *navigation*—dynamic traffic information and navigation; *safety/Security*—automatic emergency calls; *servicing*—remote diagnosing. One of the technological drivers of telematics is the convergence of technologies once known as separate entities, like PDAs, navigation systems, notebook computers, and game consoles. A recent Roland Berger study (Heidingsfelder et al.

2001) estimates a growth rate of 29 percent for mobile services and a worldwide market volume of \$14 billion by 2006. According to the Roland Berger study, 38 percent of all car customers tend to include the availability of telematics services in their purchase decisions. Olaf Koch describes the approach of DaimlerChrysler in the area of telematics as follows:

The next hype after e-business will be mobile business. Our approach is not to shape the service market which will definitely emerge around mobile services. Our purpose is to develop leading-edge technology that provides the infrastructure for such services. When customers demand mobile services, we'll have the infrastructure ready to use.

As telematics is still on the brink of broad application by consumers, DaimlerChrysler offers services focused on the specific needs of the respective target groups for each brand. TeleAid for example, on offer since 1999, triggers automatic emergency calls. DynAps offers dynamic navigation services in consideration of current travel flow. In June 2002, DaimlerChrysler introduced the first research car with UMTS connectivity.

Workforce Connect

DC eLife, as part of the DCXNE, initiative, focuses on qualification and networking the workforce of DaimlerChrysler. DC eLife is a joint initiative of the corporate e-business, communication, IT management, and human resources departments under the auspices of the Board of Management member responsible for human resources. The initiative includes all employee-related e-business activities that can be accessed through the employee portal. The portal bundles information, applications, and services. DaimlerChrysler employees have access to this portal by a single sign on solution and can customize their personal portal site according to their job assignments and personal preferences. The portal displays time accounts, a job marketplace, and company vehicle ordering among others. The ePeople project focuses on the standardization of administration processes related to human resources. The application is built on Peoplesoft and Paisy standard software with an underlying database and consists of three major elements:

1. *Employee job marketplace:* anonymous application for jobs within DaimlerChrysler
2. *Competency management:* identifying suitable skills and knowledge
3. *Candidate management:* standardized support for the recruitment process

Although DaimlerChrysler benefits from each project separately, the vision is to make DaimlerChrysler a networked company, with the entire supply chain electronic, that is, employees, suppliers, and customers. To avoid a scenario as described above (remember, the problem of meeting market demand of the PT Cruiser), projects of the DCXNET initiative help to tie dealer's order management software to DaimlerChrysler's order management applications (FastCar) and to link facility management systems to production and inventory management systems. A project manager is enabled to scan the corporate skillmap for talents needed and a networked supply chain avoids situations where one tier n supplier suffers from excess inventory and another one runs out of stock because sales forecasts did not match reality. The key is electronically enhanced flexibility, Gary Dilts says, "If you can assemble the car electronically, create a production schedule at the factory using real time tools, and handle fulfillment using another integrated set of tools, you can ramp up production very quickly" (Konicki 2001).

Results of the DCXNET Initiative

When Olaf Koch met with Eckhard Cordes to negotiate the terms for his new assignment at DCXNET in 2000, his first question was, "Do you have the feeling that our effort will make DaimlerChrysler more efficient and effective?" Both indices have direct impact on the balance sheet. The next section provides an overview of the achievements.

- *Business Connect/FastCar:* Early FastCar results have yielded a 60 to 90 percent reduction in the average time required to communicate changes to the vehicle development process. FastCar will also contribute significantly to the speed in which DaimlerChrysler will bring new vehicles to market, thereby increasing its competitive edge.
- *Business Connect/Covisint:* Online bidding events (OBE) reduced the time for complex procurement negotiations from 8 to 10 weeks to 4 to 5 days. These time savings reduced time to market and cut procurement costs. Within 12 months from February 2001, OBE accounted for 10 billion in 510 OBEs at DaimlerChrysler. This accounts for one third of the procurement amount spent on all new contracts for 2001. Process time has been reduced by 80 percent through e-procurement and, as Dr. Grube says, "*The net effect of e-procurement covers all investments in e-business related activities, which shows the great potential of a networked value chain.*"

- **Business Connect/Quality Management:** In May 2000, DaimlerChrysler announced a partnership with powerway.com to develop a Web-based process that allows for standardized quality management procedures. The solution provides real-time monitoring of quality management activities of DaimlerChrysler and its suppliers. Process time of quality management processes has been cut by 50 percent.

The second question referred to the commitment of the functional units of DaimlerChrysler to use existing e-business solutions and their willingness to take responsibility for further developments. A good example for success in this area is the procurement function of Mercedes-Benz, as Olaf Koch says, “*Well, a good example here is Johannes Rudnitzky [Head of Procurement Mercedes-Benz Passenger Car and smart]. Rudnitzki has 30 years of experience in the procurement area and is a respected person in the car industry. If somebody like him leads the biggest online auction and commits himself to e-business publicly, you have achieved a breakthrough.*”

Lessons from the Past and Issues for the Future

The e-business hype is over and the next hype is breaking ground: m-business. Waves of innovation are not new, neither for IS researchers nor for IS professionals. What can be learned from this wave of innovation? This section suggests some implications of the case of DCXNET.

External Communication is important. As we have seen, DaimlerChrysler communicated effectively with internal stakeholders. But external communication was important, too. The company was a late mover in an environment obsessed by speed. This approach can be effective, but it can be dangerous, too. First, in a company driven by shareholder value, analysts and rating agencies play a central role by interpreting business-related information. The frame of reference of these people was, as major parts of the Internet economy were, driven by the idea of making processes faster. Consultancies coined buzzwords like “B2B OR NOT TO BE” and “E OR BE EATEN.” During the dot-com hype, patience was no attribute of shareholders and, as competitors announced their Internet units to take advantage of a process innovation like e-business, pressure on DaimlerChrysler rose to at least do *something*. Despite the pressure from outside, the board demanded a well-informed e-business strategy on the basis of the corporate planning process. This provided for a deeper understanding of e-business and its impact on DaimlerChrysler’s operations. Based on this insight (and rising operating profits), the Board could stand the pressure and deliver answers to analysts.

Assess the impact of the innovation on the industry structure and your business processes. First movers often command a premium for their ability to adapt new technology swiftly. The consequences of being a late mover depend on the impact an innovation has on business processes and industry structure. If information technology alters one or both (e.g., decreasing costs per unit through economies of scale or increasing process speed through electronic sales processes or overall networked processes), the late movers’ margins will be squeezed and it can be too late, if competitors drive quality, prices, or services in unreachable regions for companies that did not take advantage of the innovation earlier. In that sense, e-business was not a disruptive innovation for the car industry (until today). Neither established manufacturers nor market entrants succeeded in selling cars on the Internet. Rather than being disruptive, e-business made some companies more efficient than others and allowed for process innovation that enhanced the quality of the core product.

Risk assessment and support of the IT function are crucial. This statement seems to be a commonplace, but was often neglected in the early days of e-business. As e-business is related to a set of socio-technical process and product innovations, risks may arise from technical, organizational, and personal issues. Process innovations require the ability to change legacy processes and therefore the means to accomplish change. The integration of legacy systems and e-business tools is not at all trivial and may fail without thorough analysis. The central IT function of DaimlerChrysler played a vital role in assessing technology-related risks and managing the integration of legacy systems into e-business solutions. Without the support of the CIO and her organization, DCXNET would not have been successful. The dot-com hype (and its downturn) around e-business damaged the reputation of the IT and consulting industries severely. As Olaf Koch says, “*The IT industry set the pace and sometimes people joined the hype without considering the risk. And when the hype was over, or ‘fool proof’ technology failed, people had to deal with wrecked projects [that] will never achieve their business goals. This happened too often in the early days of e-business.*” Thus, one of the lessons that can be drawn from the story of DCXNET and its context is that the IT and consulting industries will have a hard time reestablishing trust in their relationships with clients and shareholders.

Alignment between IT and strategy is key. The DCXNET Initiative was a reaction on external pressure and the perception of the Lagezentrum that an innovation might alter ways of doing business. One of the most important questions for IT management

is the alignment of business needs and IT investments and how waves of IT innovation can be identified and dealt with proactively. Alignment between IT and strategy can be defined as “convergent intentions, shared understanding, and coordinated procedures” (Shams and Wheeler 2001). According to Chan (2002),

Strategic alignment means the fit between the priorities and activities of the IS function and the business unit. The goal in strategic alignment is for IS priorities, capabilities, decisions, and actions to support the entire business. Structural alignment means the degree of “structural fit” between IS and the business. Structural fit relates to organizational structure and includes such areas as the location of IS decision-making rights, reporting relationships, (de)centralization of IS services and infrastructure, and deployment of IS personnel.

In an empirical study that explored alignment in eight US-based firms, Chan reports four interesting observations:

1. Structural alignment varied by organization; there was no one right way.
2. IS strategic alignment mattered more than formal IS structural alignment.
3. Flexibility of IS structures was important.
4. The informal organizational structure was more important to IS alignment than commonly recognized.

Chan concludes that the informal organizational structure might be the single most important aspect in creating the ability to exploit waves of IT innovation. That is, informal relationships between IT and other parts of the business can be viewed as the infrastructure of an early warning system for information systems innovations.

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DCXNET: E-TRANSFORMATION AT DAIMLERCHRYSLER

—Teaching Note—

Overview

The case, which is best discussed from a perspective “late but lucky” and keeping in mind the time frame of about 1998, when the cases starts and at the height of the dot.com boom or hype, focuses on how a multinational automotive company formulates and implements its e-business strategy, both on the sell and buy side and with regard to human resources as well. In detail, this case study offers four different viewpoints, from which it can be used for teaching in an IS or management environment. These foci are

- organizational and general management issues, especially issues such as funding of innovation initiatives and generating management attention for implementation projects
- implementation issues, especially about the role of change agents and process ownership
- e-business issues: customer and sell side (Autobytel and others)
- e-business issues: sourcing side (Covisint)

In addition, the case can be used to illustrate differences in automotive sales process in Europe versus the United States with the typical German sales channel exhibiting mostly custom build cars, servicing at the dealership, and single brand dealerships versus the United States with predominantly preorder-produced cars, pure selling, non-brand servicing, and multibrand dealerships. It is also possible to embed issues of the role of automotive clusters in the Michigan versus South of Germany (Stuttgart, Munich) areas.

Teaching Note for the Topics E-Business and Organizational Issues

Volume: $2 \times 3.0 \text{ hours} = 4 \times 1.5 \text{ hours teaching units}$

Learning Goals Overview of e-business
E-business at DaimlerChrysler
Organizational issues
Traditional vs. GroupSystems Enhanced group discussions

Topics Automotive sales channels (autobytel, etc.)
Strategic issues (Porter’s market forces)
(Comparison : Traditional vs. GroupSystems Discussions

Methods Manual brainstorming
GroupSystems brainstorming
Teacher as moderator, integrator

Media 1. Session: Room without PCs but with a Whiteboard
2. Session: Mobile group support system without Internet, GroupSystems Software. Short videos:^a
1. initiative.avi (after the short repeat of the case) – 4.5 minutes
2. bconnect.avi (before question 7 online bidding events) – 2.5 minutes
3. vconnect.avi (before question 11 MercedesBenz Portal) – 4 minutes

^aAvailable on request from the authors as publicly available material.

Session Structure Proposals

The following design also uses group support technology to enhance the team/group experiences.

Session 1: E-Business (Topics 1 and 3)

Duration	Goal	Topics	Method
10	Introduction	Welcome, movie cconnect.avi	Presentation
10	Introduction	Short repeat of the case, clarification of unclear terms, main contents	Discussion
5	Overview autobytel	Business Model autobytel (Disintermediation) Differences USA-Germany	Discussion
50	Porter	What is the impact of autobytel in the automotive market?	Brainstorming with categorization
10		Break	
10	Porter	Describe and discuss Porter's market forces framework	Presentation
5	Porter	Film initiative.avi	
40	Impacts of the Internet	How does the Internet change the automotive industry?	Small groups
40		Presentation of group results	Presentation
		Reading: Markus/Benjamin (change agents) Answers to Question 4 Second reading of case study	Home work

Session 2: Organization (Questions 4+5 und 15)

Duration	Goal	Topics	Methods
5	Introduction	Welcome	
20	Specifics of the management approach	Central coordination on the board level, decentral implementation at the divisions	Discussion
60	Evaluation of success factors	What were the key success factors for the DCXnet Initiative (financial and time resource, Change Agents, etc.)	Brainstorming (using GroupSystems)
15	Break		
10	Selection of the Change Agents as key success factor	Change Agents key factor Discussion of the Markus/Benjamin model	Provide summary
5		Story of the Apes	
20	Debriefing	Comparison of traditional Group Methods vs. GroupSystems	
5	Opinions		
10	Closing	Open questions (content) Ideas for improvement What did you like/dislike?	

Highlights to Individual Questions

In order to discuss the case, a number of questions can be used. The following general information can be used. For a total of 16 questions, structured answers are provided.

Question 1: Briefly describe the business model of autobytel.com.

Enters in the automotive value chain as an intermediary between dealers and individual customers, Embraces about 5000 Dealerships as a Franchise System, 200.000 buying request per month, 25 percent lead to purchases (Revenue \$1.2 million), net loss autobytel: \$8.1 million, faces the problem of a shallow value chain depth. *Sales process:* Buying request from customer arrives → request will be forwarded to a dealer → within 24 h a low price offer will be made, that cannot be renegotiated → customer checks offer with sticker price and sticker cost (provided by autobytel.com) → purchase of the vehicle at the dealer. *Impact:* Cost reduction during the sales process, transparent and fixed prices. *Functionalities:*

- Brokerage between customer and dealer
- Delivery of information transparency
- Delivery of information connected to vehicle purchases
 - Stress differences between United States and German car sales channel
 - Discuss autobytel business model for custom-made cars (not really applicable)
 - Discuss if autobytel really disintermediates between produce and customer
 - Discuss details of car purchasing process, differentiate between brands and types of cars

Question 2: What is meant by the term e-business? Structure your answer in a useful way.

Synonym: e-commerce = exchange of good and services via networks, especially the Internet; differentiation between types of partner connected: B2C, B2B, and B2G. Suggested reading: Gerbert et al. 2001.

Question 3: Impact of the Internet on DCXs competitive position.

Within the context of Porter's five forces model, how will the Internet influence DaimlerChrysler's competitive position? Include the activities of GM and Ford into your line of arguments. Describe the business model of autoexchange and discuss ramifications for the car industry. Suggested reading: *The Economist* 2000b.

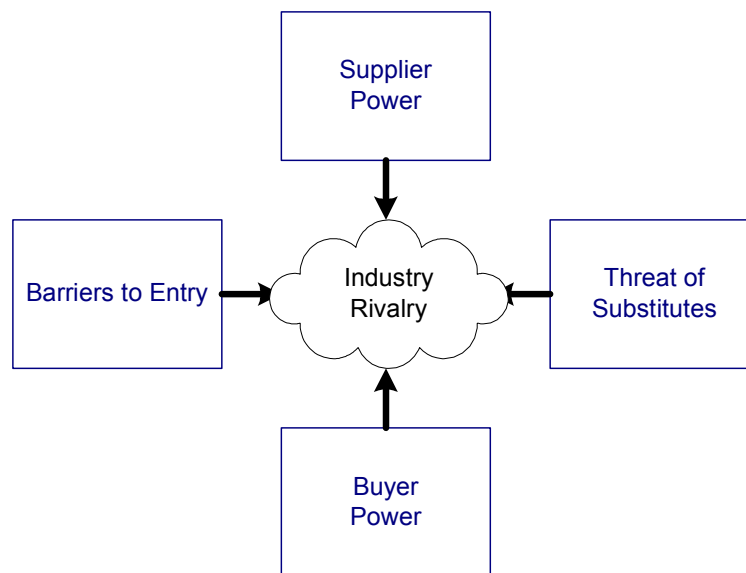


Figure 7. The Five Forces Model (Adapted from Porter 1988)

Impacts of the Internet on the Competitive Position of DaimlerChrysler

- For example, GM's activities (OnStar): Telematic-services (personal information, security information) <http://www.onstar.com/flash.html>
- Ford's activities with Oracle (Autoexchange): connection to the sourcing partners
 - Areas: sales, supply chain, telematics
 - Possibly lower sales prices or higher gross margins
 - Impact also on other industries
 - Higher price transparency
 - No full sales process on the Web; payment issues; legal issues
 - e-commerce in parts: sales of options (e.g., BMW)
 - Car presentation, information, financing proposal, dealership information
 - Car-configurators (especially European market)
 - Outlook: multi-sales channel: in every phase of the purchasing process the customer can choose between physical and virtual world.

Question 4: Briefly discuss alternatives to the management approach chosen for DCXNET.

Management approach: bottom-up definition; divisions remain process owners; DCXNET positioned as a temporary service function for the division (the department was dismantled to a large extent in December 2002 and got a new, much less visible management in September 2002); no new permanent organizational structures. *Alternatives to the organizational positioning:* separate functional unit such as purchasing or sales; separate division such as cars, trucks.

Question 5: DaimlerChrysler decided to drive e-business development from inside. Discuss alternative organizational options and their advantages/disadvantages.

From inside: e-business-development jointly with the divisions; rather the experienced purchase and sales people (car guys) should get acquainted the e-business than the other way around (e-business specialists get to know the core business. *Alternatives:* external consulting. Advantages for the inside approach: better acceptance in the divisions (personal network); better acceptance, no outsiders; disadvantages: work time of already involved people is necessary.

Question 6: Visit Covisint on the Internet (www.covisint.com) and describe the collaboration manager tool in detail. What is the business rationale of collaboration along the value chain? Which features are crucial?

Collaboration Manager Tool: interorganizational communication tool, features for project teams, discussion rooms, workflow support. *Basic idea:* reduction of interface costs. *Critical success factors:* process for the building of virtual teams; data (exchange) formats; unified terminology.

Question 7: What are prerequisites of online bidding events for manufacturers and suppliers regarding organization and technology?

Before: one-to-one negotiations with suppliers, often lasting for days. *Now:* online bidding events; one-to-many negotiations leading to immediate market pricing. *Requirements:*

- *Car producer:* Definition of clear rules for bidding; must select potential suppliers; detailed information about products needed must be supplied; anonymity of bidders must be guaranteed; hotline for problems during the auction; in case of system crashes, telephone auction
- *Supplier:* written confirmation after the auction; secure and reliable connections

Question 8: Describe the concept of supply chain management.

SCM is a strategic management concept for planning, controlling, implementation of good information flow in a logistic network or along a supply chain. SCM definitions according Bechtel and Jayaram: (functional) chain awareness school; linkage/logistics school; information school; integration/process school; future school.

Question 9: Discuss reasons, why suppliers might hesitate to join Covisint. Search the Web for alternatives to Covisint. Describe and compare their features.

Disadvantages for suppliers: Bundling of demand (jointly with Ford, GM) → powers of suppliers can be reduced; possible development of monopolies; pressure on the suppliers to only use Covisint as a platform; (getting to critical mass is important for the Big Three).

Alternatives to Covisint: <http://www.clepa.com/>
http://www.supplyon.com/start_de.html
<http://www.autobusiness.co.uk/>

Legal aspects: http://www.legamedia.net/legapractice/wendel_dominik/2000/00-09/0009_wendel_dominik_b2b_02.php

Question 10: Develop and discuss measures for the Board of Covisint that might help to convince suppliers to sign up to Covisint.

No minimizing of prices; develop incentives; leave the freedom, to participate in other platforms; share the cost reduction among the participants.

Question 11: What is the business rationale of the Mercedes-Benz portal? Which services could be based on accurate information about consumers preferences? What are possible reactions of car dealers?

Mercedes-Benz Portal is part of Customer Connect (B2C) and offers user-information-based services via Web browser, WAP, such as route planners, traffic news, (weather), calendaring, car rentals, hotels, etc. = possibility for the dealers to get in touch with the customers and to market further service products.

Question 12: What is the potential benefit of MarketCenter for DaimlerChrysler?

MarketCenter as part of Customer Connect focused on the “premium (five star) Chrysler dealers” in North America. Sales of servicing equipment; sales of office supplies. *Advantages for DCX:* Lower cost due to purchasing volume; lower process cost for internal sales.

Question 13: What are aspects (technical and organizational) that might facilitate the commercial breakthrough of telematics? What are important questions related to telematics for the Board of a car manufacturer? Who are players in the market?

Factors supporting telematics: Infrastructure in place at the right time; clear legal environment; low cost of hardware; adequate man-mach in-interface (voice recognition). *Important issues:* follow-up on the car’s total life cycle; billing; training for service

stations; critical mass; willingness to pay; competitive moves. *Players*: OEMs; first-tier suppliers; suppliers of mobile devices; telecom service providers; content providers; telematics service providers; manufacturers.

Question 14: Should a company establish a global and standardized HR portal? Discuss advantages and drawbacks.

Advantage: single point of entry for personnel issues; automated workflows; cost reduction. *Disadvantages*: not individualized and not emotionally seen as personal; possible problematic for staff adverse to IT.

Question 15: Describe the impact of e-business on the automotive industry. Use a structured approach for your description.

Impacts of e-business on the automotive industry. *Area of information*: positive impacts via information pages, graphics, configurators, price information, financing offers. *Area of transaction*: car as an experience good, therefore no pure Internet sales; payment functionalities on the Internet insufficient, legal requirements not matched (digital signature). Impact all in all not destructive for the industry, since customers did not accept the Internet as sales channel.

Question 16: What is alignment about? Which organizational unit should be responsible for alignment? Shall alignment be considered as a process of negotiation between the IT function and corporate development or is a separate structure necessary? Which information might be helpful for your decision?

Suggested readings: Chan 2002; Sambamurthy and Zmud 1999.

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