

MRO Procurement for Business Customers: A Longitudinal Case Study Analysis

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ABSTRACT

Buero-Fuerrer is a company that decided to implement a modern e-procurement solution for B2B customers in the industry of office supplies. The company was looking for an e-commerce software solution for the seamless integration of the procurement process for its business customers. The main objective was the development of a customized software solution which would have a major impact on customer retention and the way procurement processes were handled. Buero-Fuerrer can be called as visionary regarding the consequent implementation of its e-strategy. What was originally seen as a challenge and “nice to have” venture is now the preferred sales channel and an absolute key to market success. Without an e-shop, Buero-Fuerrer would not have managed to become number one in the Swiss B2B stationary market.

Keywords (Required)

Case Study, B2B E-Commerce, Procurement, E-Shop, E-Business, Office Supplies.

INTRODUCTION

This case study describes a real-world case of an existing Swiss company and has been documented by an independent researcher (the author). The text offers insights into issues and challenges which were faced during the development of the company's e-business strategy as well as the evaluation of partners and the development of the software. The original material was gathered five years ago and was written as a research case in German language (Schubert, 2001). In the following years, the company was observed over a period of five years. The current paper describes the situation in the year 2005 and includes the experiences of the company from the launch of the e-shop in the year 1999 to the day of writing this article in February 2006.

ORGANIZATION BACKGROUND

Company

The Swiss company “Buero-Fuerrer” has been selling stationery since 1886. Its strength is a modern outsourcing procurement concept for business customers. Buero-Fuerrer conducts a pure B2B business. The company's sales of office products amounted to nearly 100 million Swiss Francs [CHF] (78 million USD) in their strongest financial year 2001/2002. In the following general recession, a remarkable loss caused the turnover to decline to close to 80 million CHF. In the year 2004, the company's turnover recovered and reached approx. 86 million CHF (67 million USD) (Figure 1). The experienced recession that was accompanied by losses in almost all Swiss industries was a shock for the management at Buero-Fuerrer as well as for the whole industry. Seen from today's perspective, it was partly due to Buero-Fuerrer's *e-business* strategy that the company slowly recovered, overtook the competitors, and today ranks as the number one seller of office supplies in Switzerland.

Buero-Fuerrer has 25'000 active customers that place some 3'000 orders a day. This translates into approximately 12'000 preproduction items per day. The sales organization in the German-speaking part of Switzerland where the company's headquarters are based comprises five key account managers, an external sales force of 30 people in charge of SMEs, and an internal sales force (call center) of 25 people. The computing department employs eight people; four of them are responsible for infrastructure and four for programming. The programming of special software modules is sometimes contracted out. Buero-Fuerrer conducts its business in the French-speaking (Western part) of Switzerland through a fully-owned subsidiary named Proffice SA.

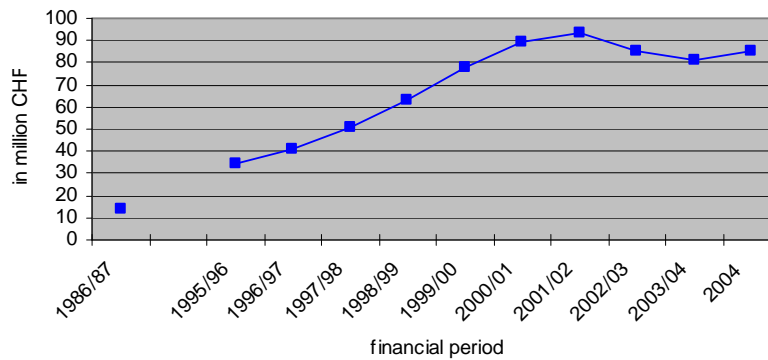


Figure 1. Buero-Fuerrer's turnover in office supplies
(remark: the company changed the financial period to a yearly system in 2004)

Industry Sector, Product and Target Group

The stationery business is a slowly declining market. New customers need to be alienated from competitors. Buero-Fuerrer's business is the procurement of maintenance, repair and operations (MRO) goods with a large proportion of transactions made up of ultra-small quantities. Buero-Fuerrer offers 9'000 stationery articles on stock with a stock availability of over 99 %. Orders placed by 5 p.m. via e-shop, telephone, fax, e-mail or any other possible channel can be delivered the next day. Modern reusable boxes are used for packaging.

About fifteen years ago, this industry sector experienced a shift in customer behavior, from the previous central purchasing to increasing decentralization contained in general agreements and with various employees ordering their own small quantities (Figure 2). The prerequisites of this decentralization are the simplicity of the order process, high inventory availability, quick delivery and constantly available and updated data. The company's decision to offer this decentralized so called "desk-to-desk procurement" was a key to their business success and has proved to be very important especially in today's real time e-business market (Alt and Oesterle, 2003).

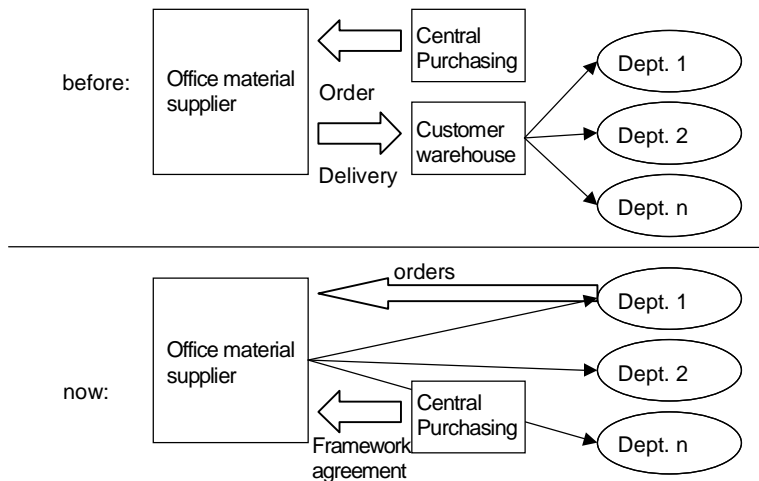


Figure 2. From central purchasing to decentralization of procurement

The product range comprises 9'000 stocked stationery articles, computer accessories, paper, printed materials and special customer articles. The main paper-based product catalogue today has 500 pages. If required, customized catalogues can be produced. For the last 20 years, the sales strategy had been focused on business customers (B2B). Target customers are mid-sized and large businesses.

SETTING THE STAGE

In the year 1998, the head of marketing was facing a special challenge. He had been with the company for 14 years and was in charge of customer channel management – including ICT supported communication channels. For years, his company had been one of the industry leaders in using ICT for the support of B2B procurement processes, mainly with customers in large companies. Now, Internet technology was increasingly becoming a viable technology for small and medium-sized companies. The current ERP system could not easily be extended into an E-Business solution. A new software solution had to be developed.

IT Situation

Eight years ago, a point-to-point system had been introduced to assist customers in accessing the AS/400 order system where they could place orders using a terminal emulation. Four years ago, the Buero-Fuerrerr management anticipated that the need for e-commerce solutions in the B2B business would arise in the foreseeable future. The point-to-point connection based on terminal emulation was expensive and time-consuming since it had to be installed at each buyer's individual location. The most obvious solution for the future was an Internet solution which could be accessed with a standard web browser (which was already installed on most of the relevant customers' desktops). The aim of the e-business solution had to be a *desk-to-desk concept* for customers.

The head of marketing had the following vision for his e-business solution: With its e-business application, Buero-Fuerrerr should seek to create the ideal degree of convenience for the customer in the area of ordering office supplies. His vision stressed the importance of a customer focus for his company. The solution was not meant to be operated according to technological opportunities but to the needs of his customers. The service offering had to be extended further by an internal e-competence in his company in order to be an innovative partner for customers in terms of optimizing efficiency and effectiveness in the C-article procurement area. He had to make sure that the top management at Buero-Fuerrerr fully backed the new IT solution and was closely involved in the strategy process.

The company's e-business concept

The intended strategy was to make Buero-Fuerrerr act as an interface between *suppliers* of office material and B2B *final consumers* (Figure 3). On the purchasing side, EDI interfaces had been in place between Buero-Fuerrerr and the most important suppliers for some time. Buero-Fuerrerr orders were placed via EDI and internally processed by the ERP system. Office suppliers tended to be conservative in their use of new technologies so a change towards the use of Internet technology was not to be expected on the company's buy-side. A scenario was envisioned in which Buero-Fuerrerr was the intermediary linking *traditional EDI-based B2B business* to the *new e-business, based on Internet technology*.

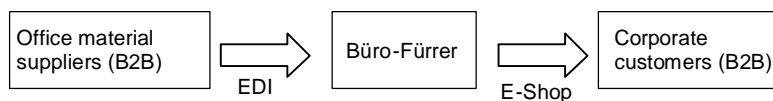


Figure 3. Buero-Fuerrerr acts as an intermediary between EDI and Internet technology

At this point of forming its e-strategy, the company management had basically three possibilities for sales-related ICT investments: (1) to develop a pure *sell-side* solution (an e-shop) with which it could potentially empower *all* its customers to enter orders with the help of a standard Web browser, (2) to introduce a *buy-side* solution which would have to be installed and customized at each customer's location individually, or (3) to put a focus on setting up links with existing *marketplaces* for MRO-products which would not require the development of a new software solution at all.

Based on this scenario (Figure 4), the management at Buero-Fuerrerr decided to initially prioritize implementation of the first option, a *sell-side* solution, a newly developed e-business software solution for large companies. Second priority was assigned to the possible (later) development of a special *buy-side* solution. It was argued that especially SMEs (which make up a large proportion of Buero-Fuerrerr's customer base) could be better served with the sell-side solution.

	Sell-side	Buy-side	Marketplace
Key Account	First priority	Second priority	observe
SME	Third priority		observe

Figure 4. Buero-Fuerrer's 1999 e-strategy

At that time, a great hype about the potentials of B2B marketplaces could be observed and the head of marketing decided to wait and see if the existing Swiss market places were really going to take off thus taking up a "follower strategy". In the end, no active efforts were undertaken by Buero-Fuerrer to actually integrate the company's internal systems with an existing marketplace. The euphoria with regard to marketplaces largely dissipated. The company observed that after the e-business euphoria had died down at the end of 2000 the focus once again shifted back to the value of *one-to-one customer relationships*. Today, the company's e-strategy is focused on SMEs. What was chosen as third priority in 1999 (a sell-side solution for SMEs) is now of essential importance for the company (Figure 5). While big companies reduced orders dramatically during the recession of 2002/2003, SMEs demand kept stable.

	Sell-side	Buy-side	Marketplace
Key Account	Second priority	Third priority	observe
SME	First priority		observe

Figure 5. Buero-Fuerrer's 2005 e-strategy

The E-Business Solution

Buero-Fuerrer's e-commerce solution was meant to comprise a customizable e-shop (sell-side solution). Besides the sell-side offering, it should principally support key accounts (e.g. ABB, Zurich, Ernst&Young, Roche) in operating desktop purchasing (outsourcing: the employees order directly via the Buero-Fuerrer shop) and so safeguarding their purchasing strategy. Over 20 flexible control functions (range authorization etc.) should be individually defined for each employee. Information on stock levels, individual customer prices, order status, sales, address details, etc. were to be available at all times. The solution had to support the customer's presales, sales and after-sales processes. The shop's special services were not to be limited to front-end functions. It was seen as a decisive factor that the complete fulfillment process was supported by the e-shop solution, too. The envisioned slogan was: "Order a product today and it's on your desk the next day."

Special intended features were:

- Can be individualized at the user level
- Option of integration into customer-specific ERP systems
- High degree of usability (search functions, navigation, design etc.)
- Personalized functionalities (order lists, customized prices, display of monthly goods purchased by cost centre, etc.)

Customer logos were to be embedded in the application design making it look like an in-house application for the customer. Device-dependent accessories were to be searchable (e.g. for toner cartridges matching a selected printer). Cost centers were to be specifically defined per customer. Buero-Fuerrer perceived that the added value for customers should lie in the *reduction* of the range of products and not an increase of diversity. The product range was meant to be definable at company level.

Partners

For the development of its new e-business software Buero-Fuerrer decided to seek the support of a couple of business partners.

Fulfillment partner

Sihl + Eika is a paper wholesaler with whom Buero-Fuerrer entered a strategic alliance in the areas of logistics and distribution. Sihl + Eika's range comprises a large selection of coated paper, new perspectives in natural papers, envelopes for the graphics industry, paper for office and technical needs as well as packaging materials and paper for digital printing. The head offices are located in Thalwil and the company has sales offices in Berne and Lausanne. Sihl + Eika offers the option of customer storage in their logistics centre. Paper or ready products can be held here for quick availability to the customer.

ERP offerer/existing IT partner

In the backend area, Buero-Fuerrer deployed the Movex ERP system of Intenia Switzerland AG. The Swiss ERP company was founded in January 1989 in Zug as Movex AG. Its name is now Intenia Switzerland AG. Intenia's Swiss branch has its head offices in Zug and employs 100 people. Intenia is the second-largest European ERP vendor. Movex is currently used by 75 companies in Switzerland with more than 4'500 users.

Internet agency

Novanet Internet Consulting AG (Zurich) is an Internet agency specialized in planning and designing database-supported Internet solutions. Its multimedia services comprise the design and development of interactive websites and e-business systems. In the year 2001, the company had a staff of 25 people and over five years' experience in the Internet business.

Partner selection

Once the decision to introduce the e-commerce solution had been taken, an intradepartmental project team was assembled and requirements specifications were created from the description of the scope of services. These were used as the basis for the call to tender.

A prerequisite was that the Internet solution should run on the AS/400 platform already in use. Because of this requirement, it was decided to select IBM as equipment supplier and leading project partner. IBM worked together with other agencies in the Internet field. Five agencies presented their concepts based on the Buero-Fuerrer specifications. From these five companies, Novanet was selected as the partner for the project. For Novanet which had been a specialist in Websphere the AS/400 used by Buero-Fuerrer was a new technology platform.

During the first phase of the project, Novanet developed the e-shop *in direct communication* with Buero-Fuerrer. The direct communication between Novanet and Buero-Fuerrer was ended in the middle of 2001 when the project was explicitly put back under the general leadership of IBM (as originally planned). Given that new investment in equipment had to be made Buero-Fuerrer no longer wanted to draw on services from an outside firm, but directly from IBM. Interestingly enough, today Buero-Fuerrer communicates with Novanet directly again. This might be an indicator of the complexity in different stages of such a project.

CASE DESCRIPTION

When planning the design of the new e-commerce solution, the head of marketing was aware of the specific importance of the smooth ICT support of business processes between Buero-Fuerrer and his customers. In the business of MRO products, a reliable and quick delivery was, of course, of utmost importance for customer satisfaction. However, besides this physical transfer of the actual product, the handling of supporting processes was also a decisive factor. Business customers were increasingly demanding regarding the accessibility and *exchange of electronic information* about delivery and payment (fulfillment information). The fulfillment process was thus an issue which deserved special attention.

Fulfillment solution

As mentioned earlier, Buero-Fuerrer's fulfillment services included just-in-time paper printing, delivery, and payment. The following paragraphs describe the situation envisioned by the responsible people at the beginning of the e-shop development project as well as relevant adjustments over the years.

Delivery Process

Buero-Fuerrer intended to provide electronic processing of delivery on its own account. The physical delivery of products not sent by post was to be undertaken by Sihl + Eika for the whole of Switzerland. BUAG should be integrated into sales with a just-in-time concept and print personalized printed matter and business cards to order. Electronic order processing was to be handled on a special Movex interface to BUAG via FTP. 80% of orders to BUAG were usually delivered to customers directly.

Buero-Fuerrer was to make up the orders itself and supply the addresses where the parcels should be delivered. A Buero-Fuerrer warehouse in Dietikon would make up the parcels as per the order. Packing should be based on a preproduction note listing the positions. The preproduction note would be sent by the Movex ERP system to a printer. Orders were to be assigned to trips. A Sihl + Eika vehicle would arrive several times a day. The driver would receive the delivery note and the route schedule (e.g. with customer wishes regarding delivery). Route planning would be based on paper documents. No electronic support was planned in this area.

In 2002, a new distribution center was opened in a building constructed by Sihl & Eika for Buero-Fuerrer. Buero-Fuerrer was responsible for the center's interior design and has a long term rental agreement. Synergies were expected from the partnership as joint deliveries would be made from this new location. As soon as the building was up and running, the data could be transmitted electronically to partners. As a consequence, electronic route planning became possible in which the order details can be automatically transmitted. Requirements specifications were also produced by Buero-Fuerrer for this project. The paper produced by Sihl + Eika was planned to be transported together with other Buero-Fuerrer products. This led to a firm *strategic alliance* between the two business partners.

Basically, Buero-Fuerrer continued to operate similarly until today. Something that was learned over the years is the importance of the personal contact to customers. Therefore, Buero-Fuerrer today equips their chauffeurs with special company clothing to signal corporate identity and to be closer to the customers.

Payment solution

The integration of electronic bill presentment and payment (EBPP) is of special relevance in the present situation. The settlement process was originally not planned to be part of the new e-shop solution. Payments were planned to be produced by the Movex ERP system. Some 40 customers would receive their billing data electronically. There were two types of invoice depending on customer preferences.

1. *Single invoice customers*: Each separate order was invoiced (once a week). The customer then received three invoices for three different orders.
2. *Collective invoice customers*: A monthly invoice of goods received for the whole month.

The invoices should be individually configured meaning the customer could choose the preferred format (Figure 6). Options included were: (1) Each individual order with each individual position, (2) organized according to cost centers, (3) only one monthly total or (4) recapitulation by individual cost centre. Buero-Fuerrer would send both the single and the collective invoices on a CD to a service company called Payserv, which would print and dispatch the invoices.

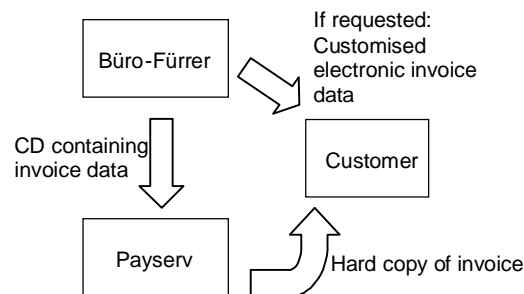


Figure 6. Various possibilities for the transfer of invoices

At the beginning of the project, some customers were asking for two different invoice formats. An aggregated monthly paper invoice was to be sent using the Payserv outsourcing service. In addition, the customer had the option of getting detailed electronic statements from the e-shop system (self-service). Most companies were asking for this information in one of the following formats: Excel or ASCII file, XML, EDIFACT. E-mail, FTP (send, get) and floppy disk were the preferred transmission channels.

Today, customers have the possibility to download invoice information directly from the e-shop. About 10 % of customers wish to receive their invoices solely in an electronic format. Already used services were implemented with the Paynet-solution (Lindt & Sprüngli, Zurich Financial Services), Swisscom's solution Connextrade (UBS) and a first (but still not value-added tax validated solution) from Ariba (Credit Suisse). Buero-Fuerrer is aware of an increasing customer-driven demand of electronic bill presentment and payment (EBPP). While today still 90 % of customers receive their invoices on paper (from Payserv), it is anticipated that medium- to long-term EBPP will also be interesting for SMEs.

Implementation

The e-shop solution was meant to go into operation in early 1999. The following sections explain the development process, the software solution and the entire system architecture.

Software Solution / Programming/System Architecture

The initial concept behind the e-shop, the interface and the database design were developed by internal employees. Programming the e-shop on the net.Commerce platform was carried out by Novanet. The file concepts for the e-shop were created in close cooperation between Buero-Fuerrer and Novanet. Novanet provided the necessary Internet expertise. The e-shop was based on an open script language for DB2 (Net.Data). The scripts developed for the e-shop was independent of the operating system. If needed, they could run on RS6000, UNIX, OS/400 or Windows. Buero-Fuerrer is forced to change the programming platform (net.Commerce) in the near future because the current technology is outdated and will not be further developed by the software vendor. The e-shop will be relaunched on a Websphere platform.

The open interfaces to the Movex ERP system enabled ideal mutual fine-tuning of both systems (c.f. Figure 7). The internal IT department designed and programmed the interfaces between Movex and the e-shop. Data exchanges were programmed to regularly take place between the systems. The order data entering the e-shop was *not meant* to be saved in real-time in the ERP system. The order process was programmed in a way that the data would be stored in a database specially designed for the e-shop. The databases were set up to synchronize with the Movex system several times an hour. No application logic from the ERP system was reused.

The six employees in the IT department maintained the system and ensured day-to-day operation. The Movex ERP system was an easily adaptable standard application. The e-shop was a customized software package programmed especially for Buero-Fuerrer. All interfaces were designed and programmed by Buero-Fuerrer. The open database interfaces of the Movex system could be addressed directly at database level. Interface programming was one of the core duties of Buero-Fuerrer's IT department. The Visual Basic applications for maintaining the additional data for the e-shop were also programmed by Buero-Fuerrer. Batch processing was written in RPG/COBOL.

Technical platform

OS/400 was used as the operating system throughout the system, both for the ERP and the Internet shop. Data was stored in DB2/400 databases in both systems, the Moves ERP and the e-shop (fuerrer-direct.ch).

Besides the ERP data from Movex (MVX-RDBM), a Buero-Fuerrer database was run on the AS/400 S20. This additional database was used to store images and extra information (long texts, customer ranges, shop controls) for the Web application. The programmers at Buero-Fuerrer wrote control batch processes that performed the data synchronization from/to the AS/400 720 Internet system. The http-server was integrated into the OS/400 system and served as an application server for the e-shop (Figure 7). Movex was used internally to manage and receive orders. Besides this, there were other applications developed in-house.

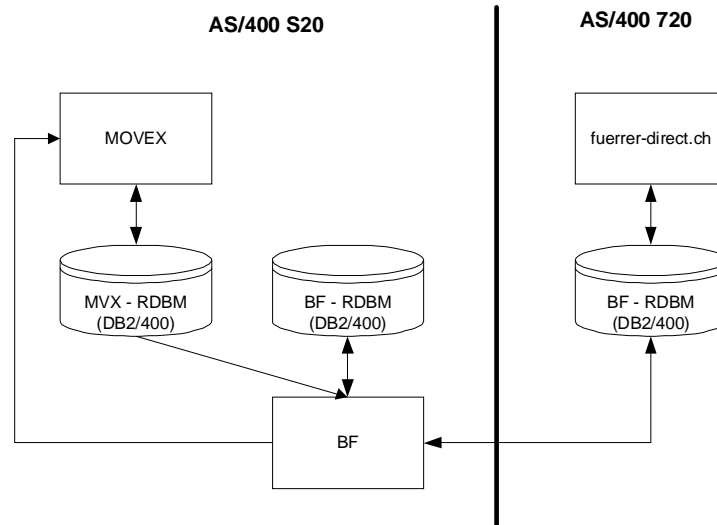


Figure 7. Technical platform

Operation

Profitability

Over 30 % of the annual turnover of 90 million CHF in 2001 (based on 6'000 orders per month) and 68 % of the 2004 turnover (86 million CHF, 30'000 orders per month) were meant to be automatically processed via the shop. From 1999 until 2001, approx. 1.6 million CHF had been disbursed in external costs for the development of the e-shop. This sum included equipment, software and running costs. The management assumed that the same amount had incurred through internal costs. Marketing was especially cost-intensive. In the years from 2001 to 2005, another 0.9 million CHF were paid to Novanet for software development and about the same amount again incurred through internal costs. Buero-Fuerrer today talks about an investment of roughly five million CHF spent within five years.

It was difficult to apportion profitability to the Internet channel. The e-shop was part of operations. In this sense it did not represent a new sales channel for Buero-Fuerrer but it was the replacement of the existing point-to-point system. It was assumed that this modern customer interface would greatly contribute to the continuing retention of customers and even help acquire some others. It was meant to enable process cost savings both at Buero-Fuerrer and customers'. The e-shop was intended to form an important part of operations one day so that it would be difficult to imagine business without it – an assumption that has been fully confirmed in the last years.

CURRENT CHALLENGES/PROBLEMS FACING THE ORGANISATION

The acceptance among SMEs of Buero-Fuerrer's electronic purchasing channel had been constantly rising. Three years after the introduction of the e-shop, in the year 2001, 22 % of customers were using the sell-side solution at fuerrer-direct.ch. Despite the recession, the demand for the sell-side solution increased constantly to 53 % in 2004 (as shown in Figure 8).

Large companies place high demands on electronic purchasing systems. Functionality, individuality and customization options were the key to businesses in this area. At the beginning, large companies were increasingly switching from sell-side solutions to their own buy-side solutions. Buero-Fuerrer was active in this area e.g. through its support of the Ariba catalogue format. Thus, large customers were accompanied in the process of implementing their own buy-side solution. The share of purchases via interfaces for buy-side solutions already constituted 11 % in 2001. A difficulty resulting from this high degree of customization was the management of complexity because of the many different electronic interfaces that had to be managed by the internal IT department. In 2002/2003, the turnover generated through large companies (buy-side solution) decreased to less than 8 %. Gradually, the demand recovered and reached 15 % in 2004. This development indicates a dangerous dependence on a small number of large companies.

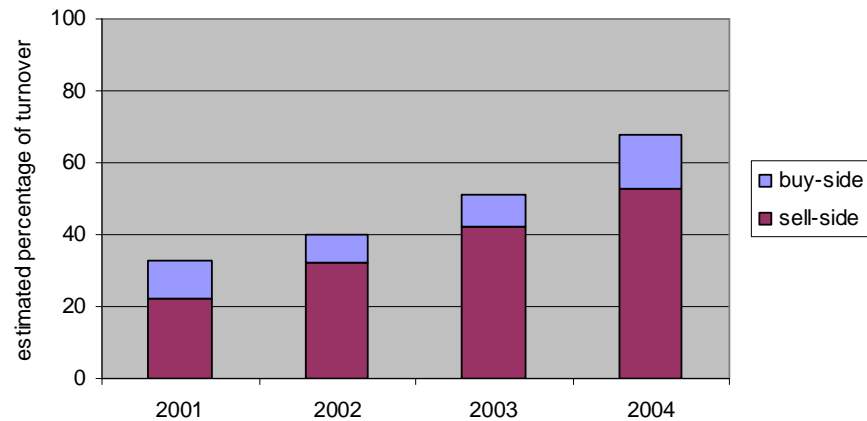


Figure 8. Use of the electronic purchasing channels

The importance of the external sales representatives grew as they had to compensate for the loss of personal contacts with the clients. Their proficiency in Internet technology and their ability to offer good advice on the use of the Web interface became an important aspect in customer relationship management. About 150 employees at Buero-Fuerrer Group are affected by the current e-business solution including the mentioned sales force (internal, external, key account). It has become an important aspect of strategy to collect feedback from the chauffeur who gets into contact with customers every day.

In general, the dependency on technology has noticeably grown which also means an increased risk for the company. The failure of the Internet system would result into the customers not being able to enter their orders. What was seen as a challenge in 1999 has become the regular sales channel. Without an e-shop, it would not have been possible to reach the role of the leading market player in a difficult industry. In 2004, the percentage of orders placed in the electronic channel has reached almost 70 %. Therefore, the upcoming re-launch of the software has to be planned carefully.

DISCUSSION

There are a couple of reasons why the Buero-Fuerrer e-shop was more successful than many other e-shops offered by direct competitors or vendors in other industries.

The USP of Buero-Fuerrer's e-business solution is the consequent focus on the *one-to-one customer relationship*. Individual needs are clarified by the external sales force before being implemented for each customer specifically. Through the exclusive focus on the customer's organizational and procedural needs, a higher level of customization is attained.

The introduction of e-commerce in the shape of the e-shop was not a revolutionary development. The point-to-point system that existed for years with the help of terminal emulation has smoothly passed into the new Web system.

The right strategy, pursued to this day, is by keeping computing expertise *within the company* and not outsourcing it. In retrospect, the management views this as a great advantage since internal employees know the industry and the customers' needs. Partial outsourcing for dedicated tasks is unavoidable, however. To quote the head of computing: "We couldn't have programmed the Internet shop as well."

The Buero-Fuerrer e-shop solution is *supported by the entire company* and not just by a small team of specialists. Call centre employees work simultaneously for the hotline and offer e-shop support. The solution has never been a threat to existing jobs. The electronic channel has grown gradually in the course of time. As management states: "Our employees and our customers are motivated e-fans."

Buero-Fuerrer's main learning is to stress a high level of quality. A great strength is the belief of the staff members that the e-shop is an important ingredient of the company's success – their authenticity is being relayed to the customer. Especially when processes are fully integrated and supported by electronic systems, a personal note is essential. The time and money saved in the process has been reinvested into a high level of customer support. This is also the reason why the external sales force has risen from 18 people in 2002/2003 to 30 people in 2004.

One thing that's not true at Buero-Fuerrer is that, "With e-commerce you can save marketing costs". Savings that e-commerce may produce on the transaction processing side must be compensated by a large external sales force. Since the introduction of the e-shop the number of external sales workers has doubled.

Benefits are the topicality of information, individual prices, a reduction in errors, cost savings, and efficient order processing (outsourcing to customers). In addition, the consistent strategic orientation to new technologies has led to something of a boost in optimism in the company. The e-shop acts in this way as a "motivator in the firm".

FINAL REMARKS

Case studies have long been used as a teaching method, especially in the area of managerial sciences (Bonoma, 1985; Eisenhardt, 1989; Huff, Wade, and Schneberger, 2002). This case study is part of a larger project on case study research called eXperience (eXperience database, 2004). Within the scope of this project the academic project partners aim at the collection of many different e-commerce case studies. Some of the case studies were already looked at in a joint analysis. The general objective is the identification of patterns for success or failure. One case study can only present anecdotal evidence. The author believes that many of the findings contained in this case study can be transferred to companies in other industries.

ACKNOWLEDGEMENTS

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