



Electronic integration in the apparel industry: the Charles Vögele case

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Abstract

Purpose – The purpose of this paper is to analyze a case where electronic data interchange implementation has been successful and to distill the main reasons for this success and understand how the actors involved dealt with the main inhibiting factors suggested by the information systems management literature.

Design/methodology/approach – The aim of the paper being explorative and partially confirmatory, an “information rich” case was selected to generate new knowledge and review the extant literature on EDI adoption’s antecedents and consequences.

Findings – Whereas some suggestions from the literature were confirmed, others are to be reviewed. The main findings are the following: managerial commitment, technological readiness (both of the systems themselves as of employees) and unclear return on investment are the main inhibitors of EDI adoption. One inhibiting factor that, to the authors’ knowledge, has not received enough attention in the literature is the fear of data disclosure. The main benefits are not a mere reduction in administrative costs by improved supply coordination and exceptions management. Finally, the personal relationship between participants is the most important for the success of an implementation.

Practical implications – This case can be of value for vertically (relationally) integrated companies that aim to improve supply chain coordination through electronic integration in the apparel, but also in other, industries.

Originality/value – To the authors’ knowledge there has not been any study yet analyzing EDI implementation in vertically integrated companies in the apparel industry so far. Also the authors feel that an in-depth single case study considerably adds to the knowledge of the phenomenon in question because of the possibility of envisaging the relevance of contextual factors.

Keywords Integration, Electronic data interchange, Information systems, Supply chain management, Garment industry

Paper type Case study

1. Introduction

The use of electronic data interchange systems (EDI) to streamline supply chain processes and even create new business models is widespread and has proven its effectiveness in several European industries, in particular in the food (fast moving consumer goods), automotive and chemical sectors. In the apparel sector the benefits to be gained from EDI implementation are manifold, particularly for companies which rely on economies of scale and scope through vertical integration. Nevertheless academic and managerial literature mainly focuses on what is called the “adoption gap”, i.e. the gap between the expected and realized EDI implementations. The

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apparel industry presents many peculiarities that might impede electronic integration, such as frequent new product introductions (collections) and a need for flexibility or the tendency to postpone productions instead of engaging in collaborative replenishment and forecasting efforts (Quoc and Lawrie, 2005). While companies like the Spanish Zara (part of the Inditex group) base their strategy, structure and operational processes on the use of EDI, other companies face the hurdle of achieving total electronic integration both inside and outside the company boundaries, while having a legacy of routines and systems that have to be adapted. In the following paper we show that electronic integration in such a company can be achieved and lead to considerable benefits that go beyond a mere reduction of administrative costs to include reduction of co-ordination costs due to increased planning and exception management capabilities. The main reasons for successful implementation lie in the channel leadership position of the company and its managerial commitment, whereas technological readiness seems to be the biggest hurdle to overcome. This single case analysis is based on insights from the information systems literature as well as on the experience of one of the authors being in charge of EDI implementation at the Vögele group. We are aware of the fact that having a single source of information as well as a single case study implies a considerable limitation to the generalization of the results, nevertheless a case study is useful when confuting or adding to existing theory (Yin, 1993).

We start by introducing the concept of EDI and the peculiarities of the fashion industry. In the following paragraphs we focus on analyzing the benefits and inhibiting factors, presenting first some conclusions from the literature before coupling these with empirical observations. The article ends with conclusions where the main results and managerial implications are proposed.

2. What is EDI?

Electronic data interchange (EDI) is basically a tool that allows automated information exchange between different tiers in the supply (or demand) chain. EDI being an enabling technology, it allows different chain tiers to connect information systems in order to achieve a certain level of electronic integration of processes. Electronic integration allows the flow of information to run parallel to or anticipate the flow of goods leading to enhanced transparency and flexibility in the design of supply chains, thereby providing cost and value advantages for all parties involved (Christiaanse and Kumar, 2000).

The idea of bundling information electronically to streamline logistic processes was actually generated after the Second World War, when the allied forces had to find a way to effectively support the part of Berlin that remained in western hands (Bass *et al.*, 2001). In the 1960s this idea started to spread among business organizations and when in the seventies the first EDI standards were introduced adoption started gaining popularity as the technology came to the point of “no return” (Notto, 2001). With the availability of POS (point of sales) data for retailers in the beginning of the 1980s, the interest in EDI implementation in the relationship between producers and retailers gained momentum: producers had potential access to real-time sales data, quantitative analysis of the data to improve logistic processes is possible and as a consequence new forms of buyer-seller co-operative endeavor based on real-time exchange of information emerged.

Initially EDI delivered most benefits in industries where supply chain processes are more streamlined and products easy to define, like automotive, electronics, chemicals and fast moving consumer goods (FMCG). With the advent of the internet as a publicly accessible network the costs of implementing EDI became considerably lower than with traditional private VANs (Value Added Networks, comparable to an extranet), and industry-wide standardization of communication data became the major issue. Once an industry standard is set, companies can virtually communicate with every kind of electronic partner without acquiring long lasting one-to-one standard defining procedures.

Following Massetti and Zmund (1996) there are four levels in the implementation of EDI technology. From the lowest to the highest ones these include: inter-firm computer files transfer, application to application file transfer, interconnected or shared databases and a coupled work environment. From the lowest to the highest level a shift occurs from technological (data) to process (business practice) integration. In order to fully exploit the potential benefits deriving from the implementation of EDI firms must agree on a set of process standards; this often requires consistent investments in time and money, and undervaluation of this aspect is one of the main reasons for failure of EDI implementation projects (Swatman *et al.*, 1994).

3. EDI use in the European apparel sector

In Europe, the situation with respect to EDI adoption in the apparel industry is very different from country to country: to start with the UK has different technical EDI standards from continental Europe. Moreover, integration across borders is made difficult by different languages, tax systems and document requirements. Characteristics of the industry structure also impact EDI implementation. In Germany one reason why EDI has been widely adopted, besides the fact that German culture is probably more control and technology minded compared with other EU countries, is that it has a tradition of a small number of big department stores that were able to convince their suppliers to do business electronically. From research of Forrester (Quoc and Lawrie, 2005) it appears that in the apparel industry 53 per cent of EU and North American retailers actually prefer taking actions aimed at postponing production rather than relying on technological solutions to problems of for instance redundant-stock and the initiative must come from the channel leaders. It is really up to brand manufacturers and bigger retailers to push technological solutions to reduce time to market through the supply chain.

Currently the largest European retailers are pushing EDI through to their suppliers, mainly in order to influence and accelerate the adoption of a common communications standard. These department stores include for instance Spanish El Corte Ingles and the French Lafayette but are mainly located in Germany and The Netherlands. Recently for instance a major Danish company, ICC Companys, has implemented EDI supported by the Dutch company "Fashionunited" under pressure from one of the biggest Dutch retailers, and is spreading the use through its major retailers throughout Europe up to Russia (as reported to us by a manager from the Fashionunited company).

For smaller companies EDI implementation encounters many problems and is not always convenient; a small retail chain typically needs to run over 50 per cent of its turnover through EDI, and shift to vendor managed inventory business models in order to start reaping significant financial benefits. Smaller retailers, in order to

survive, will probably have to rely on competitive advantages other than cost leadership through electronic integration. EDI is the most interesting for companies which own the entire supply chain, or at least are able to act as “channel captains” (quasi-integration). In the fashion industry the recent success of Zara (Inditex) is to be ascribed (among others) to the fact that its strategy is based on vertical electronic integration, i.e. the business processes are designed on the premises of seamless EDI implementation and not the other way around. However, other vertically integrated companies with long standing business practices and infrastructure find themselves forced to automate existing data exchange in order to stay competitive, and that is a non-trivial task. One company which succeeded in doing so in a time span of about two years is the Charles Vögele group, as emerges from the case study presented in the next section.

4. EDI implementation at the Charles Vögele group

The company we are looking at was founded 1955 by Charles Vögele near Zurich in Switzerland; 50 years later the fashion retailer with 8,000 employees, almost 800 stores and is one of the big players in Europe. Meanwhile the firm is listed on the Swiss Stock Exchange. The headquarters are based in Pfäffikon, Switzerland, where all central operations like design, purchasing, supply chain, IT, controlling, finance and personal are centralized. Besides Switzerland Charles Vögele operates own fashion stores also in Germany, The Netherlands, Belgium, Austria, Poland, The Czech Republic, Slovakia, Hungaria and Slovenia. Every year Charles Vögele buys around 65 Million pieces of garment from approximately 400 manufacturers in South East Asia and Eastern Europe. All transportation of the garments via sea, air and land passes the company-owned European Hub near Hanover, which distributes the pieces to five distribution centers, which in turn serve the stores timely with the right garments in the right quantity (see Figure 1).

These numbers together with the chart above show the enormous complexity of the goods flow, which can only be managed and controlled on the basis of clearly defined processes and permanent transparency of the supply chain (Stockert, 2006a). Vögele has very early discovered that an EDI-based platform is the instrument to control the complex flow of goods. All manufacturers, logistic providers, label printers, forwarders



Figure 1.
Logistic chain
(example seafreight)

of Charles Vögele and all relevant internal departments like buying, merchandising, logistics, tariffs and trade work on the same data platform, updated every 30 minutes, and on the same processes. Additionally it was relatively easy to install an event management system which automatically generates transaction files or e-mails if process, quantities, transportation modes and/or timing do not follow the defined procedures (Stockert, 2006b).

To improve the performance permanently Charles Vögele has defined a set of KPIs (key performance indicators), which are based on the data of the EDI transaction files. This data forms the basis to analyze negative events and to find solutions for permanent improvement.

Figure 2 shows an example of the Charles Vögele KPIs: the complete status report, which indicates if the logistic provider has inserted the necessary information into the system at the right time. Based on the order history in this case you can see that all 1,996 orders can be analyzed and that just 2.5 per cent of them were not correct. The KPI also allows to show under the heading “remarks” how many orders from which destinations went wrong (e.g. 2 OFU order follow ups for air freight missing in Shanghai). In the detailed layer the exact dates and responsible person can be identified to check the reason for the error.

Having introduced the company and its EDI implementation effort, we now try to find out if the implementation has led to the desired results.

5. Benefits from EDI

Benefits to be gained from electronic integration have been classified in several ways (Chwelos *et al.*, 2001; Rahim *et al.*, 2001; Iacovou *et al.*, 1995; Cavaye and Cragg, 1995; Mukhopadhyay, 1995). To sum up, benefits can be classified into direct and indirect, or tangible and intangible depending on the short term-operational versus the longer term strategic nature of them. Some of the classifications overlap, but a broad distinction can be made between efficiency and value-based advantages. The first include reduced



Figure 2.
Analysis of key performance indicators (KPIs)

transaction and production costs (based on Mukhopadhyay, 1995). These benefits accrue in the operational phases of a business relationship and are mainly of a short-term economic nature. Another way to define the difference between direct and indirect benefits is to think of the necessity to change existing business processes: indirect benefits accrue when a business process has to be changed in order to exploit EDI.

In the context of quasi or relationally integrated companies[1], a further distinction can be made between benefits to be gained from automating internal processes and those to be gained from automating inter-organizational processes. Walton and Gupta (1999) offer a typology of EDI benefits based on the direct versus indirect nature of the benefits and the degree of managerial control over the business process, in other words for a company owning part of the supply chain a major part of the benefits will be gained irrespective of the influence of external parties, whereas another part of benefits will be gained only if co-operation is achieved with external parties like the logistic and financial providers, and of course suppliers and clients (e.g. to support Quick Response or Efficient Consumer Response concepts). Charles Vögele has generated enormous benefits from the EDI-based network involving all participants on the supply chain. A few examples of the major benefits achieved are the following (Stockert, 2005):

- Before the implementation of the web-based EDI system around 50 per cent of the promoted garments were not available on the shop floor during the promotion. Today we have reached 99 per cent permanently.
- The variation of the delivery times of garments from Asia reached from 40 to a maximum of 120 days. An exact planning of garments on the floor was impossible with the consequence that the orders were delivered too early and the capital costs rose. Today Charles Vögele reaches a stable delivery time of 40 to 42 days from an Asian vendor to the national distribution centers (Stockert, 2006c).
- Nowadays the goods flow of Charles Vögele is smoother and shows fewer peaks. That leads to better transportation cost, less dead freight, less need for storage capacity and very precise control of the goods flow to the stores.
- A permanent and exact control of the goods flow gives the opportunity to prioritize some specific goods flows or to slow down.
- Besides cost reductions, better timing and less stress for the firm and for its suppliers, the consumer's satisfaction improved – the number of core clients has increased season by season.

It is thus evident that the main benefits of EDI implementation for this (quasi) vertically integrated company are not only to be found in a reduction of costs, but especially in the co-ordination of the supply chain. This leads to: increased product availability, reduction and stability of lead times that allow increased control of the goods flow, and finally improved customer satisfaction.

However, the proposed classification of benefits into direct and indirect ones is mostly useful in situations of differing degrees of interorganisational dependency, which is not the case for a “channel captain” like Vögele. From a transaction costs analysis perspective we could claim that irrespective of the boundaries of the firms the implementation of EDI leads to changes, presumably reductions, in the transaction costs in the whole chain (Malone *et al.*, 1987; Gurbaxani, 1991).

6. EDI and lower transaction costs at Vögele

Transaction costs can be generally divided into: administrative, co-ordination and monitoring ones. Administrative costs are related to direct costs involved in the daily operations. So a reduction in administrative costs may be due to increased accuracy, less human errors, higher speed, earlier information availability, and less paperwork. Co-ordination and monitoring costs will be lower and supply chain responsiveness is increased considerably. With EDI after an order has been placed, messages regarding order confirmation and fulfillment conditions are automatically issued. The automation of this process requires the parties involved to make agreements about the order conditions in advance, which allows them to better monitor deviations from expected outcomes (increased monitoring). If for instance an order is not delivered following the conditions agreed on, parties involved will know that in advance and take necessary actions. EDI connectivity with financial and logistic providers is necessary to streamline financial and physical flows (increased co-ordination). Other benefits to be gained include more timely financial management and settling and increased logistic capacity planning.

The reduction of paper and other communication costs seems straightforward; next to the savings in material it is possible for managers involved in the process to compare data of, for instance, different shops more easily than when information comes in different formats.

For larger organizations a reduction of administrative costs can contribute considerably to the net margins in the short term. However, this is not where the main benefits lie. By rendering the processes transparent, EDI allows to monitor constantly, in real time, the flows of goods: a reduction in monitoring costs allows timely action. Of major importance in a vertically integrated company is supply chain visibility: through EDI information about the timing of the production and distribution phases can be made available prior to the actual process taking place. One important consequence is that bottlenecks in the chain can be discussed before the actual delivery of goods takes place by building key performance indicators into the system and allowing the generation of e-mail messages when deviations from KPI's occur.

In the case of Charles Vögele all participants in the supply chain have the opportunity to focus the communication on the negative events. This solution-oriented communication is driven by the event monitoring system and is very effective and cost saving. Additionally the administrative functions linked with the system generate benefits by using electronic data instead of paper and faxes. Information availability and storage is much more efficient. One example is documentation management – an issue which is normally not the focus of supply chain discussions, but which is very relevant for the goods flow, the timing and payment issues. With the EDI-based web platform Charles Vögele can check the correctness of the export documents in the CFS (the container freight station in Shanghai for example). The scanned documents can be used for payment and customs process and the internal administration like invoice checks. The early check in the chain guaranties that only the garments which are delivered will be paid for by the corrected credit. Charles Vögele also has significant fewer delays caused by unclear documents (e.g. numbers changed or not readable) and the bookkeeping department does not have to generate credits to be offset against the next order.

For the co-ordination of the different stages implied in marketing apparel products in an integrated company, timeliness and availability of information are of crucial importance. Once an action is taken, for instance a purchasing order for a particular item, every actor involved in the marketing process can continuously plan, and adapt the planning in order to optimize logistic capacity, payment and credit management, as well as production, promotion and merchandising planning. So Co-ordination costs can be reduced considerably through EDI connectivity.

In the Charles Vögele supply chain all participating functions are focused on exceptions. The problem solving procedures are exactly defined (who has to decide in which time). When a decision takes longer than defined or no decision is made, an escalation process starts automatically to the higher levels of the organization. Additionally the company can visualize the order history of each garment. Based on this it can be ascertained whether a certain exception is a single incident and if it happens more often. The problem can be localized and an event-orientated solution can be developed. For measuring the performance of different parts of the supply chain Charles Vögele has implemented KPIs to document the improvements or failures of these areas. The key performance indicators (KPIs) used are for example “order follow up”, “transit times”, “complete delivery”, “real time status of shipped goods” etc.

The main advantages of the synchronization of the processes along the Charles Vögele supply chain are:

- All participants of the chain work on the same planning data. Working on the same database means that mistyping or using different time frames of data does not happen anymore.
- The whole chain shows fewer stocks which finally saves costs internally and externally.
- Prioritization can be given to the delivery of specific garments depending on weather conditions or competitor activity.
- The product availability rate for promotions is almost 100%. That not only increases sales but, more importantly, also consumer satisfaction and trust.

The supply chain monitor from Charles Vögele (see Figure 3) shows 21 options for the users (lower part) to control the garment flow in the chain. In this example we see the option of the DC (distribution center) to pull an order from the European hub. The DC can see if and when the order arrives, how many pieces in how many cartons on how many pallets will be delivered, if the quality check is completed successfully and the import tax is paid. You see also on what date the garments have to be presented on the sales floor, if and where it has to be finished before it reaches the shops, and if it is promotion wear and therefore has to be handled with speed. The supply chain monitor is the instrument to control the supply chain.

So, if EDI leads to such big advantages and helps reducing administrative, monitoring and co-ordination costs in the chain (somehow integrated or not) why is every company not rushing to get such a system up and going?

7. Main inhibitors of EDI adoption

Research on the adoption of information systems in inter-firm relationships has mainly been based on the “diffusion of innovation perspective” (Rogers, 1981;

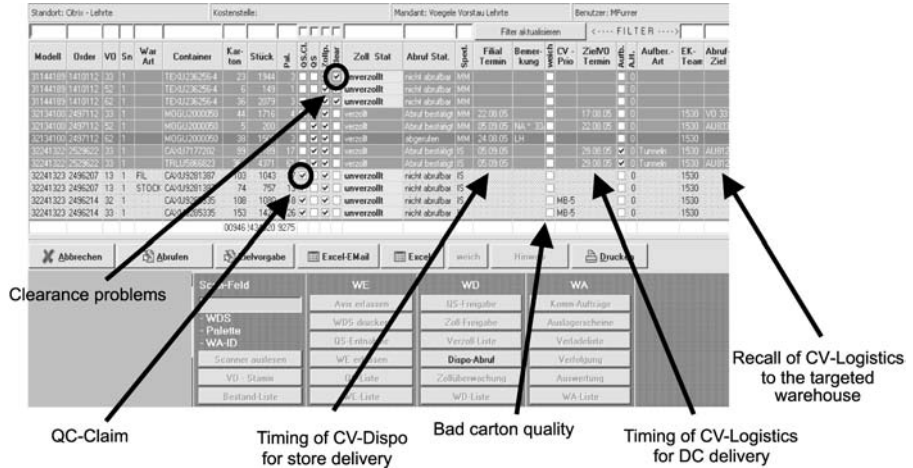


Figure 3.
Web-based warehouse management and controlled goodsflow

Martinez-Jimenez and Redondo-Polo, 2001) which assumes a deterministic role of information technology in shaping business processes. However, despite the potential advantages of EDI, the implementation of such systems has suffered many failures and could not be as extended as expected. Scholars refer to this phenomenon as the adoption gap (Benjamin *et al.*, 1990; Christiaanse, 1996; Damsgaard and Lyytinen, 1998; Holland and Lockett, 1997; Massetti and Zmund, 1996). Alignment of business and information technology requirements seems to be the main reason for the relatively slow adoption of EDI.

Antecedents of, or reasons for, the implementation of new technologies, internet based in particular, have been identified in the following categories: organizational, external and technological (Aguila-Obra and Meléndez, 2006). Organizational factors include size, but also and mainly IT readiness of employees. Managerial commitment is identified as being the major internal driver of IT implementation (see also Rogers, 1981). External factors include institutional pressure, pressure from other parties in the company's network and availability of support from external parties. Perceived benefits, next to managerial commitment, have been identified as a major driver of IT and EDI implementation (Iacovou *et al.*, 1995; Mehrrens *et al.*, 2001). Direct benefits (direct costs reductions), being quantifiable, it is to a certain extent possible for managers to understand what the expected return is on EDI investments; with respect to indirect benefits (to be gained from process re-engineering) the return on investment is more difficult to quantify, therefore managerial commitment and "vision" become of crucial importance in order to convince the actors (internal and external) involved of the advantages of EDI.

Charles Vögele was more or less at the same point when it began to implement an EDI-based web platform with an integrated monitoring system in combination with the development of KPIs. Externally and internally the fear of too much transparency available for all participants on the chain was enormous. Uncertainty about the disclosure of company data was a big issue. Another concern was the amount of IT investment and running costs and a return on investment could be realized in a reasonable pay off period. Another critical issue was the question whether the IT

readiness of all partners, participating in the planned system. IT infrastructures, philosophies and equipments were extremely different at the starting point. Therefore a major success factor of these systems is the understanding of the effects of the system and its prioritization on the strategic agenda and the mindset of the management.

To deal with all these hurdles the channel captain had to start a convincing process with all participants. Sometimes pressure was also necessary. The basis for the convincing process was the clearly defined common business process. With all participants' processes, data, rules, regulations and KPIs were defined and agreed on. The most convincing issue was to comply and act following the process as announced before, that is to "walk the talk"; that builds trust and confidence with all partners.

Process adaptation is one of the major hurdles in EDI implementation: whereas typically companies expect to adapt their systems to existing organizational processes, the real benefits lie in the possibility to redesign processes based on the availability of EDI. In the fashion sector Spanish company Inditex, mainly with the above-mentioned brand Zara, is the foremost example of a successful process design based on electronic integration. Changes in the organizational and inter-organisational processes imply redefining the kind of action to be taken throughout the delivery process, as well as the relative responsibilities. For instance it might be possible that as a consequence of EDI implementation purchase managers have to start to manage a long-term relationship with a supplier on a strategic level instead of making *ad hoc* orders and re-orders. Also purchase managers are not rewarded anymore on short term financial gains due to their negotiating capabilities, something that purchasers will generally not be happy with. These issues ought to be identified and acted on in the implementation phase and not after. In the realm of inter-organisational relationships it is of paramount importance to discuss these issues with particular regard to the sharing of responsibilities for determinate process stages. Charles Vögele has expressively defined "Masterpartners" (Stockert, 2005) to generate commitment from the main supply chain participants as shown in Figure 4.

The process definition and the IT concept and implementation were done by Charles Vögele itself. The company, being a channel leader, sees this as a key competence which a retailer has to develop, implement and operate on its own. Internally some functions changed, for example in the buying and merchandising departments, and additional functions like supply chain control were born. The permanent improvement of the processes based on order history, KPIs and mainly frequent improvement meetings with the participants are in focus today.

With respect to external factors a facet of commercial relationships which has long been neglected by managerial literature is the experiential, or even emotional, environment of buyer-seller relationships. Already when supply chain management concepts gained momentum, from the beginning of the 1980s, companies started realizing that in order to achieve efficiencies managers should be able to see across organizational boundaries and look at the supply chain as a whole instead of just at the organization's internal processes. EDI being a technology aimed at facilitating information exchange between companies, the willingness of managers to "watch outside" and to exchange information based on mutual trust is a major challenge for the success of EDI implementation. More particularly concepts like inter-firm dependency structures, power, trust and commitment are of crucial importance.

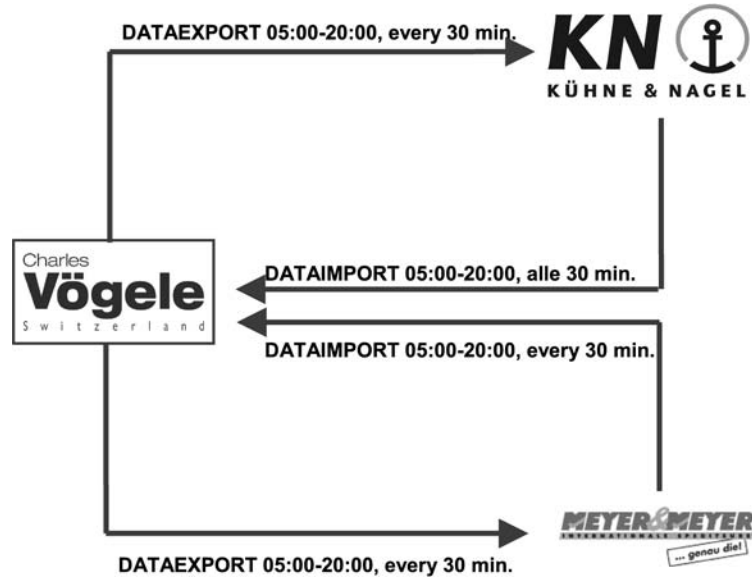


Figure 4.
EDI – data transfer to the
masterpartners

One of the major reasons why companies are lagging or unwilling to invest in EDI technologies is that they have the perception that a bigger, or less dependent company, will reap most of the benefits; i.e. the perception of inequality in the relationship maybe a major hindrance to EDI implementation. In any case power exercise does not necessarily lead to detrimental results for the more dependent companies, on the contrary more powerful companies have to act as “channel leaders” and force adoption of EDI. Smaller companies may be reluctant in the short but happy in the longer run when they actually realize the benefits are there (Vlosky *et al.*, 1997). When dependence is balanced, companies willing to fully exploit EDI benefits must already have a solid relationship or, most importantly, long-term orientation and commitment (Mossinkoff, 2004).

When the Charles Vögele supply chain management met the first time with the relevant logistic providers, agents (at that time) and representatives of its own key departments to explain the EDI-based web platform with its targets and functionalities, the atmosphere was painted by mistrust, fear, hate and competition. Today the supply chain participants solve problems by themselves, working together looking for the best solution for Charles Vögele. It took 1½ to 2 years to reach that level of trust and understanding. The key reason was the clearly defined rules and interfaces in the process as well as the personal respect and knowledge about each other (Stockert, 2005).

Another inhibitor to EDI implementation is of course technological readiness. Particularly for a vertically integrated company which has been operating for several years, history has determined the implementation of various software solutions on business division and functional/department levels. In order to achieve supply chain visibility these software solutions should be able to communicate, and therefore be adapted or connected to translation tools. Translation of data is often a tedious manual operation necessary to integrate databases, or aimed at creating communication

standards (at a semantic level) to be agreed on between different business parties. This process can be costly and time consuming, but typically happens only once: once the standards are defined they are used and only new items have to be codified. The key problem for the whole textile and garment industry is that there exists no common software solution supporting the whole value chain of the industry. A lot of partial solutions consist of partial functionalities. The complete connection of the different tools to a common solution fails because of the complex interfaces. Therefore SAP and also Microsoft started initiatives to develop such holistic software solutions. Charles Vögele solved the problem of the very different IT-situations with its partners by developing an interface to an open platform. Investments and mental barriers were relatively low and easy to handle.

Figure 5 shows that there exists no integrated IT-solution for the fashion industry. The IT tools in this chart are just an example and do not show the huge variety of solutions offered in the market. There exist excellent solutions for specific applications but the interfaces between the tools have to be installed and managed by the fashion companies. Actually different companies like SAP and Microsoft develop platforms on which the different tools can be linked and certified users have access.

Besides missing software solution the missing standards between the different participants of the textile value chain makes integration of their processes and data almost impossible. For fully vertical companies this is no problem because they define their own standards. But the companies which are only manufacturers or fashion retailers need standards like EAN or EPC codes to communicate with each other. Actually the missing standards are a key issue for the implementation of the RFID[2] technology in this industry. Global players like WalMart, Tesco and Metro as well as the global association GS1 are working to find solutions for this.

8. Conclusion

In this article we took a closer look at EDI implementation in a major vertically integrated company in the apparel sector to show that adoption of EDI is possible and leads to considerable benefits. In particular we focused on the main benefits to be gained from this as well as on the main inhibiting factors. We found that the

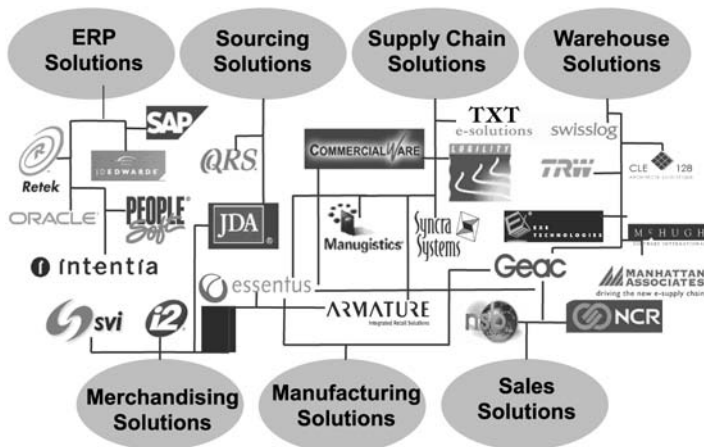


Figure 5.
There exists no integrated
IT solution for the fashion
value chain worldwide

dichotomization of benefits into direct and indirect is somewhat restrictive and forced in the context of vertically integrated companies. The Vögele group acts as a “channel captain” and can strongly advise its partners to comply with the system. It is actually more useful to think in terms of reduced transaction costs which we divided into administrative, monitoring and co-ordination ones. We found that mere administrative cost reductions are probably not worth the investment, but the real benefits lie in the capability to monitor (exception management) and co-ordinate or even better to synchronize the whole supply chain. To synchronize the supply chain processes has the advantage that the process coordination works by itself without permanent control from outside.

With respect to the obstacles to implementation we found that the main ones are: managerial commitment, technological readiness (both of the systems themselves as of employees) and unclear return on investment. One inhibiting factor that, to our knowledge, has not received enough attention in the literature is the fear of data disclosure. Although these latter factors represent obstacles in the first phases of the implementation, once a critical number of parties gets involved and management gets more technologically aware, hurdles are overcome, and security of data transmission seem not a problem anymore.

Finally, the personal relationship between participants is the most important for the success of an implementation. Charles Vögele has defined “Masterpartners” in its own supply chain. These are deeply involved in the early stages of all new developments the company has in mind. They are also partners of improvement meetings, which is a brainstorming process to find out what additional solutions can improve the whole process. These meetings are not about who will benefit more or less from a certain solution: the whole personnel of the partners who work with Charles Vögele meet frequently in occasion of determinate events, and see each other personally. The people know who is sitting at the other end of the phone line, and they will meet each other again. That develops a totally different atmosphere between the acting people and the companies improving the processes: EDI works only if the people work together.

Notes

1. When two or more tiers in the chain are not integrated by ownership but by a form of relational governance based on long term orientation (Heide, 1994).
2. Radio Frequency Identification, a system by which goods can be traced by means of inserting a tag containing a unique identification number in each item.

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