# Business Engineering: Transition to the Networked Enterprise

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## The Integrated Enterprise

Getzner Textil AG employs a workforce of 800 employees in the manufacture of high fashion shirting materials. Between 1989 and 1991 Getzner redesigned all its business processes. Using an integrated software package, the textile company was able to improve the speed and efficiency of its organisation. This allowed it to consolidate its competitive position, even though it is located in a high-wage country. Despite a threefold increase in orders between 1989 and 1993, Getzner cut the number of administrative staff from 233 to 177, reduced order processing time from eight weeks to six weeks, and drastically improved the accuracy with which it met deadlines.

What is the basis for this success? The software package's integrated database supports integrated processes without regard to departmental boundaries (see Figure 1). It provides any employee with all the data he might need to perform his tasks within the process.

Data integration permits integrated internal processes beyond departmental boundaries.

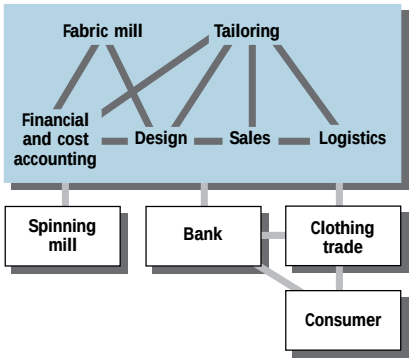


*Figure 1*
*Example of an integrated enterprise*

## The Networked Enterprise

Getzner's reengineering was based on existing company boundaries. Although new organisational forms were already under discussion, it was decided to restrict the initial phase to process integration.

Nowadays, companies like Getzner are considering new organisational models that can be classified as "networked enterprises". These generate organisational and business structures such as those presented in Figure 2. Production (the fabric mill) becomes an independent company, which can either remain in its present location using advanced automation, or can relocate production in low-wage countries. Tailoring is sold to a large clothing manufacturer, but retains close links with their own company. Logistics are delegated to a specialist logistics service company. The design department becomes an independent textile designer. By becoming an independent marketing company, the sales organisation achieves the freedom to combine with other marketing companies, include other product ranges, or even team up with the textile designer. Many companies are even considering outsourcing their financial and cost accounting.

The effects can be examined particularly well for the newly independent design company. Given autonomy, the independent textile designer has more freedom to create new products in collaboration with the clothing trade, and to manage their development and production. This probably means that he will work less closely with the fabric manufacturer than in the past and more with the clothing manufacturer. Of course, with the new configuration it is possible that competing fabric mills will be in with a chance, just as their own fabric mill can produce for competing designers.

Such reorganisation certainly involves dangers for some parts of the company. However, process integration in itself creates such significant advantages in terms of speed, costs and quality for the companies involved, that their continued existence in the new competitive environment is fostered for some considerable time.

Business Engineering aims to combine the advantages of a network of small units with the strengths of allied companies. The great opportunity for the newly independent business units lies specifically in the integrated processes that can be created within the integrated enterprise or implemented within the allied companies.

The networked enterprise pursues the following objectives:

- Concentration on core capabilities: The small independent business units are based on a few core capabilities. Other business functions are either relocated in independent units or obtained from specialist companies (e.g. logistics). The resulting business units are more transparent and can exploit market opportunities more quickly.
- Market mechanisms: Wherever possible, the new business units are exposed to competition, to generate simple and objective measures of effectiveness and efficiency.
- Globalisation: All processes, but especially procurement and sales, are globally-oriented. Communication technology creates new freedom in the choice of location.
- Achieving integrated processes: Electronic communication permits the independence of business units without having to sacrifice process integration.
- Achieving synergy: Ideally, networked enterprises combine the flexibility and efficiency of small companies with the synergies of large companies.

The integrated enterprise generates a network of small specialised business units operating under competitive conditions.

### The Network Relationship

The networking of business units within a group of companies is a special case of the networked enterprise. The resulting, or perhaps already existing, communication infrastructure (under the slogan "Information Highway") opens up huge potential for almost all companies from inter-organisational process integration. A wide variety of forms of telecooperation (network relationships) is already apparent.

Let us first return to the example of the textile company (see Figure 3):

- Market, fashion and product information
  A textile designer's strength lies in the quality of his market, fashion and product information. As an intermediary within the network, many information channels converge at this point; these he can use in his relationships with customers and the trade, but also in his collaboration with his suppliers (fabric manufacturers, clothes manufacturers). Information technology allows him to exchange not only sales figures, but also trade reports, and sample designs, he can inform customers selectively about new developments, discuss quality problems with customers, or analyse processing problems in video conferencing.
- Design
  For some time now, it has been possible to create textile designs and models on computer and discuss them in diverse locations (Simultaneous Engineering). This allows the textile designer to deal with customer-specific features, such as different colourways for different countries.
- Processing
  Given the close collaboration with the trader, the textile designer can take over the entire processing (supply chain management, transport, insurance, etc.) perhaps with the support of specialised companies. In this way he can relieve the trader of these responsibilities and increase his own value creation.

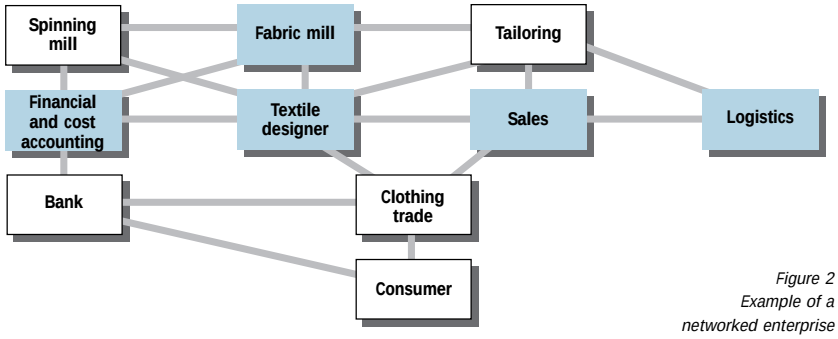


*Figure 2*
*Example of a networked enterprise*

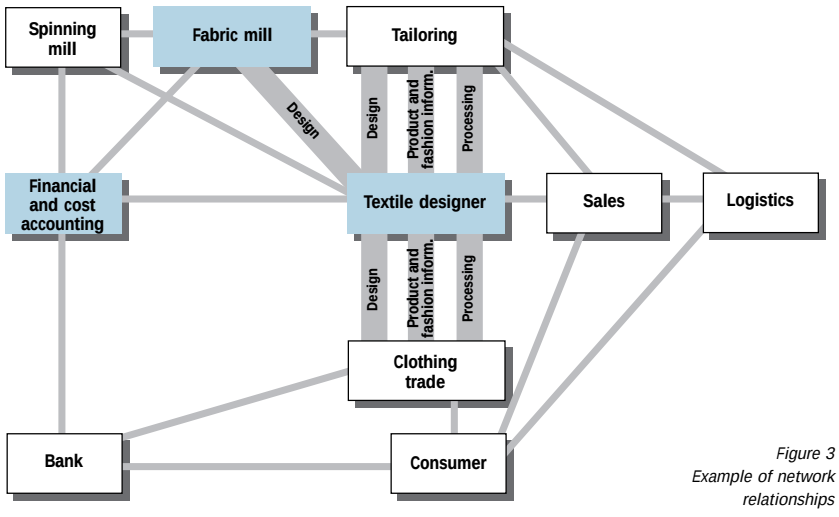


*Figure 3*
*Example of network relationships*

One company that has already achieved this kind of customer relationship on the basis of the Internet and Network Notes is Marshall Industries, the fourth largest distributor of industrial components in the USA. The company distributes approximately 100,000 components to 30,000 customers. In July 1994 Marshall was the first distributer of electronic components to put its entire business processing on the Internet. Using Lotus Notes, Marshall extended its customer services in the direction of mass customisation: Marshall uses customer profiles to inform the customer of new products or product features, improves the satisfaction with the products they deliver and offers a comprehensive after-sales service.

Marshall has radically improved the performance of its sales organisation: Comparing the years 1994 and 1995, turnover and profits both rose by a quarter, whereas sales and administration costs rose by only 4%.

Marshall improved the inter-organisational procurement process. As intermediary, it ensured the rapid and selective flow of information between component manufacturers and component users - in both directions.

The above examples and many more, especially from the financial services sector, indicate that electronic communication increasingly allows two companies to communicate as easily as two departments. The classical sales relationships are transformed into multi-facetted customer relationships that include all activities within the Customer Resource Life Cycle. These extend from obtaining market information, through selecting suppliers,

order placement, inspection tests to repairs and the reuse of residual stock [see Ives/Learmonth 1984, Österle 1995, p. 155 f.]. The electronic relationship between companies results not from the new electronic forms of existing communication channels, but from new process and business concepts.

Communication permits integrated inter-organisational processes beyond company boundaries.

### Communication Forms

Electronic communication is still often regarded as equivalent to Electronic Data Interchange (EDI), that is, the exchange of formatted, administrative business data, such as offers, orders, invoices, etc. Whereas such forms developed rather slowly in the past, other communication forms are characterised by almost frantic development. Currently foremost of these is the World Wide Web on the Internet, but this is closely followed by Network Notes (for documentary communication within defined groups) or video conferencing (for communication using speech and images).

If a company is currently considering the potential of networking, it would be wise to start from the idea of multi-media communication, and regard classical EDI as only one special case (still offering substantial capabilities).

### Business Engineering

Information and communication technology will transform the industrial to the information society. It not only creates new internal processes, it also revolutionises the collaboration between companies and hence the entire structure of the economy.

The incipient revolution is only in part a technical problem. Many of the information and communication techniques needed are already available or currently being developed. The changes in company and economic structures, processes, information systems and especially employees, are much more challenging and will take much longer.

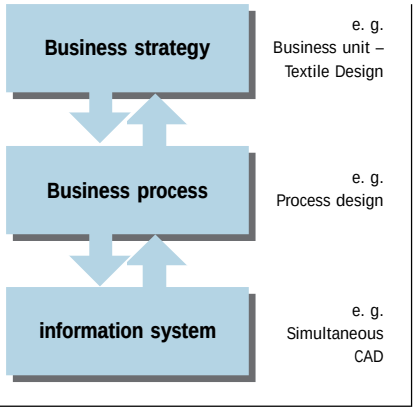


*Figure 4*
*Business Engineering levels*

Business Engineering (Davenport 1993, IMG 1994, Österle 1995) is a method-based approach to transformation. Business Engineering has the goal of incorporating the transition to the networked enterprise within the business strategy, as well as implementing this strategy within processes and providing it with information system support (see Figure 4).

### Bibliography

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### The Competence Centre for "Electronic Business Networking"

The Institute for Information Management at the University of St. Gallen, together with a number of innovative companies, has initiated a program for "Electronic Business Networking" (eBN).

The goals of this program are:

- A business model of the information society:
  The business model should help in understanding the new business forms, and in providing early recognition of their opportunities and dangers.
- A method for planning and implementing inter-organisational processes:
  The Institute for Information Management has developed the PROMET method for Business Process Redesign and introduced it successfully in numerous companies. The eBN program will extend the method specifically for Business Networking.
- Reference processes for inter-organisational processes:
  In collaboration with the partner companies, reference processes for networked companies will be developed.

### Summary

Data integration makes it possible to achieve significant improvements from the integration of internal processes. Telecommunication increasingly allows companies to communicate with each other as they would with internal departments. This opens up much greater potential than internal data integration. Collaboration between companies will use all types of communication (multi-media) and affect the entire Customer Resource Life Cycle.

The transition to the networked company signifies a massive innovative leap at the levels of business strategy, process and information system. Business Engineering is a method-based approach to the systematic management of this transition.