Outlook

The role of IT and the tasks of those working in the IT sector will be subject to major change in the next decade. The most prominent trend will be the drifting apart of *basic IT supply* and *strategic IT demand.*

- *Basic IT supply* will comprise, in addition to infrastructure, the development and operation of all applications not necessarily company-specific

- *Strategic IT demand* refers to those IT components by which companies can differentiate themselves from their competitors.

There are substantial differences in the objectives, methods, competences, and organization models for these two areas.

Providing basic IT supply at moderate cost

The significance of IT for the business activity of companies will increase dramatically. The more companies of an industry build competitive advantages through IT, the greater the pressure on competitors to follow their example and obtain cost efficiency, as well as innovative, customer-oriented products and services through value-added use of IT. Next, up- and downstream stages of the value chain will get sucked into the wake of this development: 'IT won't work without IT!'

Just like staple foods, energy, air, and water, the quality of IT products and services will no longer be a pleasant surprise but an essential prerequisite for acceptance by consumers and users. To safeguard the basic supply with IT on a constant high quality level, development and production procedures for IT will be further industrialized. In parallel, the demand for basic IT supply will be standardized by harmonizing non-differentiating business processes.

This development, in turn, will permit the basic IT supply to be managed purely from a cost perspective. Cost savings potentials from scale effects and location advantages will clearly reinforce the already visible trend towards IT outsourcing, IT offshoring, and the consolidation of IT providers. In view of eroding margins, cost optimization in basic IT supply will continue to be a central management task. In most cases this will mainly refer to request management, procurement, and supplier management. Following the same logic, companies will not stop there: In addition to IT, they will increasingly outsource standardized, non-differentiating processes – ideally to the same outsourcer providing the company's basic IT supply. The development into a Business Process Outsourcing

(BPO) provider will, in turn, result in new requirements to these providers. In short: As in IT outsourcing, customers and providers have a steep learning curve ahead of them.

Using strategic IT demand for value increases

The burst of the Internet bubble and the general disappointment about broken promises by the IT industry have given rise to the general belief that IT is vastly overestimated ('IT does not matter') and should be reduced to basic supply functions. We would like to caution against such premature conclusions: In the next decade, too, IT will continue to be a major source of competitive advantages – more so than nanotechnology, the fuel cell, or genetic engineering.

Almost every company has a chance to obtain competitive advantages through specific combinations of IT and process or product qualities. Areas where innovation leaps will be possible include the following:

■ Much more than before, the value chain will be penetrated and interlinked by IT ('digitalized'). A *digitalized supply chain* integrating suppliers and customers has often been promised but never implemented. Even today, there is no technically and economically viable solution so far. Other, equally high barriers to this next advance in streamlining consist in organizational problems. The lesson learnt from past failures is that automation is not always the best solution.

A first mover in this field, establishing a wholly digitalized value chain, will gain a significant competitive edge in terms of speed, quality, and customer focus. Commoditization ('supply chain from the shelf') is not likely to happen anytime soon.

■ Products are increasingly coupled to services (finance, warehousing/transportation, maintenance, disposal, and others) to increase sales and enhance customer retention. An essential prerequisite for that is the *higher information intensity of products*. Even today, the continuous price decrease for hardware products permits more and more industrial and consumer products to be equipped with data technology. The bottleneck for gaining competitive advantages through these new possibilities consists in companies' processing capacity, which is much too low at present. In addition to new processes, also high-performance architectures, algorithms, and applications will need to be developed.

The automotive industry, which had a pioneer role in this development, had to learn from painful experiences that processes for complex products (such as airplanes, elevators, and others), after having been handled well by plant engineers on an industrial scale, can present a mystery when transferred to large-scale serial production.

■ The third area where companies will be able to differentiate themselves based on IT is the *better use of corporate intelligence:* The idea is as old as data processing itself: Business intelligence, knowledge management, document management systems, and collaborative planning are only a few examples of IT-based approaches to improved planning and decision-making. These approaches have only been successful in well-structured sub-areas, and have not been able to deliver on their far-reaching promises.

In parallel to these approaches – and independent of them – the workplace of the average employee (now: 'knowledge worker') has changed completely over the past years. Email, voice mail, PDA has become everyday tools. This development has proceeded powerfully – almost as if it was a law of nature – and seems to continue at undiminished speed. According to a recent study, 80 percent of companies' documented knowledge is contained in e-mail files. It is obvious, though, those companies' organizational capabilities are not keeping up with technological progress: 'Arming' the workplace with new IT tools has not accelerated or improved corporate decision-making – on the contrary, the cost-benefit ratio of these activities has continually declined.

Using IT to better exploit corporate intelligence has not worked out so far, as the respective processes are not sufficiently understood. Input/output models used for modeling supply chain processes do not suffice to describe the processes of developing, deciding, and reaching agreements. Without a deep understanding of the process, however, technology cannot be put to best use, and without clear targets there will be no satisfactory RoI. The task is clear, the solution is not obvious – but the reward will be enormous: A first-class challenge to management, science, and consulting.

To ensure that IT can cover a company's strategic IT demand, corresponding conditions must be created with regard to workforce and technology. The *working environment of IT people* – including the CIO, IT managers, software engineers, Java programmers, computing center operators, and others – will change even more drastically than in the 1990ies:

■ The majority of operative IT staff will migrate to spin-off system vendors, increasingly also to large IT outsourcing providers

■ The development and operation of IT – in particular in basic IT supply – will be further industrialized: Division of tasks, process disciplines, standardization, quality assurance, automation. Requirements to IT staff will be higher in this environment; their performance will be more transparent and comparable, jobs will be less secure.

■ The difference between commercial and technical IT will disappear. Competitive differentiation through IT will increasingly be possible where technical, commercial, and planning processes are integrated.

- IT procurement will be professionalized and be autonomous in purchasing large parts of the IT services needed.

- Strategic IT management tasks will be increasingly re-centralized, and integrated in the management of value creation processes.

- Individuals in charge of IT will have to assume responsibility for the results of using IT for the benefit of the business.

IT people will be evaluated based on their ability to fulfill the role of business shapers. By the same token, the role of the IT department – and with it the qualification profile of staff – will change: Rather than application programmers with extensive IT system know-how, it will be solution-oriented business shapers promoting value-added IT contents with competitive relevance and a clear business focus. This direction will enable companies to exploit targeted IT benefits, and in the long run safeguard IT's right of existence.