



Editorial: E-business perspectives

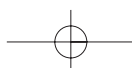
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Abstract: Over recent years, the fast development of new Information and Communication Technologies (ICTs) has been revolutionising the market arena, extending the horizon of competition, and causing radical changes in all business branches. Several business analysts tend to call this process rightly or wrongly as the *Electronic (E-) Business Revolution*. The effects of the introduction of E-Business were an enhanced globalisation process, an even more uncertain and dynamic economic environment, and a technology-driven development of new capabilities, products and services as well as new businesses. In this special issue the *International Journal of Internet and Enterprise Management* aims to highlight successful results and positive implications on the global economy, but also open issues and challenges as well as future trends. However, the perspective will start with a brief analysis of the short but intense history of E-business, in order to learn from the past for the future.

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Biographical notes: Professor Dr Holger Luczak completed his studies in industrial engineering and mechanical engineering at Technische Hochschule Darmstadt, where he also earned his doctor's degree in 1974 and his habilitation in 1977 at the Institute for Industrial Engineering and Ergonomics. From 1977 to 1983 he was Professor for Production Technology with the main field of ergonomics and industrial engineering at Bremen University; there, he founded the Faculty of Production Technology as well as the Bremen Institute for Industrial Technology and Applied Ergonomics. In addition to his position as managing director of the Institute for Industrial Engineering and Ergonomics at Technische Universität Berlin from 1983 to 1992, he also taught as professor in the department of Construction and Manufacturing. In 1992 Holger Luczak followed the call to Chair and Institute of Industrial Engineering and Ergonomics at Aachen University of Technology and took over the function of the Director and Managing Member of the Board of the Research Institute for Rationalisation and Operations Management at Aachen University of Technology. In many books and more than 400 scientific publications, he presents new methods for Ergonomics and Rationalisation. In addition, he participates in editorial boards of several national and international journals and acts as Scientific Expert, Consultant, and Advisory and Supervisory Council Member on several national and international committees.



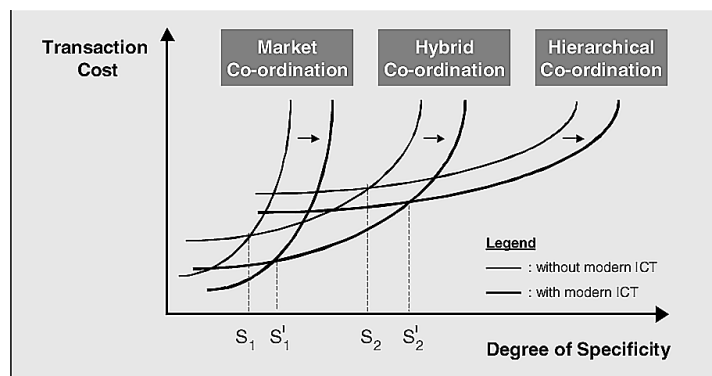
Tomaso Forzi, Dott. Ing., graduated in 2000 in Management and Production Engineering at the Politecnico di Milano (Milan, Italy). Between 1995 and 1998 he was student Research Assistant at the Laboratory for Machine Tools and Production Engineering at the Aachen University of Technology (Aachen, Germany). Between 1998 and 1999 he was Guest Scholar at the Department of Industrial Engineering of the North Carolina State University (Raleigh NC, USA). Between 1998 and 2000 he conducted research work for the Ford European Research Center (Aachen, Germany) as well as for the Institute of Industrial Technologies and Automation, National Research Council (Milan, Italy). Since 2000 he has been working as a Researcher in the E-Business Engineering Department at the Research Institute for Operations Management (FIR) at the RWTH Aachen. His current research focuses on E-Business engineering, virtual organisations, entrepreneurial strategy, and business modelling within a networked economy.

1 The development of E-business: an analysis

The term E-business is referred to as the holistic ICT-based support of (dynamic) *inter-organisational* and *intra-organisational processes* and *transactions*. E-business hence implies the *modification of existing business relationships* and might thus lead to the development of *new or modified business models*.

Transactions (i.e. the transfer of goods between the different economic subjects) and the related costs represent a basic element of economic analysis. Transaction costs vary in function of the specificity of the involved good or job. Furthermore, the management of transactions may take place in the *market* (under various contractual forms), within a *hierarchy* (i.e. an organisation in which transactions are regulated by hierarchical relationships), or within other intermediate forms of transaction governance (so-called *hybrids*). One of the most significant effects caused by new ICTs and the related E-business solutions is the decrease in transaction costs *for all coordination instances* (as shown in Figure 1), which might eventually lead to a change in the transaction governance.

Figure 1 ICTs and transaction costs (Picot, Reichwald and Wigand, 2001)



In fact, ICT-based E-business solutions allow enterprises to design leaner *intra-organisational* processes, with the result of enhancing greater efficiency and productivity within a *hierarchy*. Besides that, ICTs can also strongly influence *inter-organisational* processes (*hybrids* up to *market-like*), by supporting cooperation within entrepreneurial networks as well as by enabling their coordination – by means of internet-based Business Collaboration Infrastructures (BCIs), such as e-marketplaces or collaboration platforms.

Both the initial successful results and the overwhelming expectations in the entrepreneurial field (as well as the speculations in the financial markets) led to a quick-paced E-business development. This accelerated growth generated a remarkable hype with a peak in 1999, and led to a consequent dramatic downturn between 2000 and 2001. Nowadays, the economy is at the end of a consolidation phase, and both managers and financial analysts are gradually starting to regain trust in E-business. This fact is confirmed by the following trends:

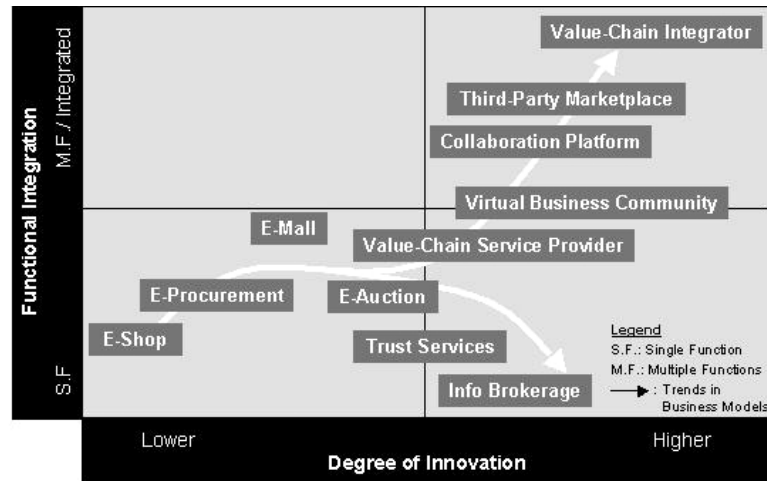
- both *Business-to-Business* (B2B) and *Business-to-Consumer* (B2C) E-business volumes continue to grow steadily
- e-Business is going beyond a simple online order management, in favour of more complex and integrated solutions (e.g. Customer Relationship Management in B2C field or Supply Chain Integrators in B2B field)
- the outsourcing of E-business solutions from Application Service Providers is increasing
- the support of transactions through different e-payment solutions is being gradually accepted
- several global players are already working on the development of the new generation of *mobile-based* E-business solutions.

Thus, E-business is likely to be gradually but steadily integrated into the global modern economy.

2 Typology of business models

E-business and web-based solutions triggered the development of several new business models. Figure 2 shows a typology of so-called *Internet Business Models*.

Among the highly innovative business models of Figure 2, two clear trends can be highlighted: single or multiple function business models. Because of the integrating focus, the latter cluster (e.g. Value-Chain Integrators, Marketplaces or Collaboration Platforms) has some interesting potential for B2B inter-organisational cooperative structures. As a matter of fact, E-business solutions play a crucial enabling role in the inter-organisational field, both for new business models and for those models that, up until now, had a higher value on a theoretical than on a practical level (e.g. Virtual Organisations). Thus, in the next section specific attention will be paid to the implications of E-business in the B2B field.

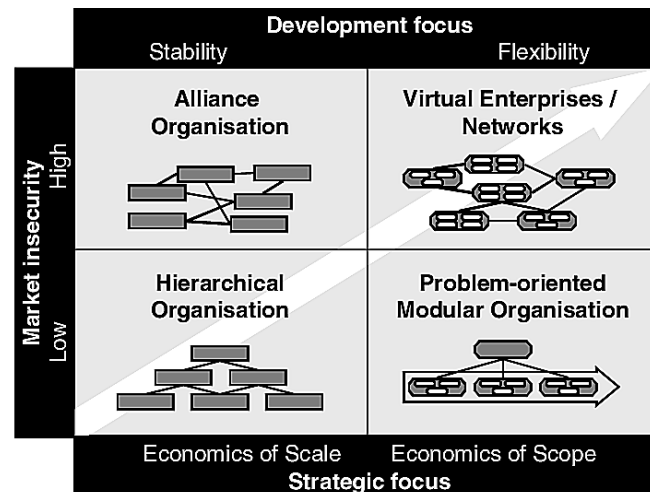
Figure 2 Internet business models (Timmers, 2000)

3 Economic potential and organisational implications

The evolution of economic systems is gradually leading to a progressive blurring of the company borders, to a reduction of physical and information barriers between enterprises, and to a consequent generation of a continuity between internal and external aspects of an organisation. As a result, transaction costs diminish and governance instances then gradually shift from hierarchical to market-like structures.

These facts lead to a trend towards networked organisations which, along with high potential, also offer remarkable challenges. In fact, even if companies remain the fundamental decision-making bodies, they must increasingly come to terms with the general increase in inter-organisational relationships. The growing inter-relationships between functions of different companies are forcing companies to remove their own internal barriers, and the growing interactions with other economic players are forcing companies to deal with a structural instability and a closer interdependence with other economic players. This implies that enterprises are bound to develop a flexible and reactive organisation in order to be able to deal with the modified and dynamically changing requirements of flexible business relationships.

Before starting to cooperate within global networks of enterprises and hence deploy inter-organisational processes, companies tend therefore to concentrate on their own core competencies and to develop an internally lean organisation. This transformation process is crucial for the success of the company's business: the definition of their own core competence (-ies), internal leanness and flexibility represent the precondition for a company to achieve the desired *external organisational flexibility*. Figure 3 depicts such a trend towards networked and flexible organisations. ICTs and E-business solutions play, within the above-mentioned development process, a crucial enabling role, by giving enterprises concrete and efficient tools to inter-connect and to integrate their performance and information systems.

Figure 3 The trend towards networked organisations (Molina, Ponguta, Bremer, Eversheim, 1998)

There are several strategic issues that companies have to face before starting the above-mentioned transformation process to enable flexible inter-organisational relationships, e.g. the new design of a streamlined entrepreneurial organisation, the identification and focus on their own core competencies, and the divestiture of non-core functions. Within the deployment of a network-orientated approach, other crucial aspects have to be defined, such as the readiness of the potential partners to cooperate, and the availability of the technologies and tools required. As a result, new business models of network-orientated cooperation structures can be designed and successfully implemented.

Up until now, the development and adjustment of business models has been performed by companies mostly in a creative way. This was also confirmed by the 'dot.com' crisis, in which weak or improvised business models led both single enterprises and networks to unrecoverable bankruptcy.

To conclude, the trend towards a tightly inter-connected economy seems to be nowadays unquestionable. On the other side, the development process towards a dynamically networked economy has just recently started. In order to be successful within a networked economy, enterprises will thus have to undergo a deep transformation process in their organisational philosophy, in their structure, but also in their approach to interaction with external organisations.

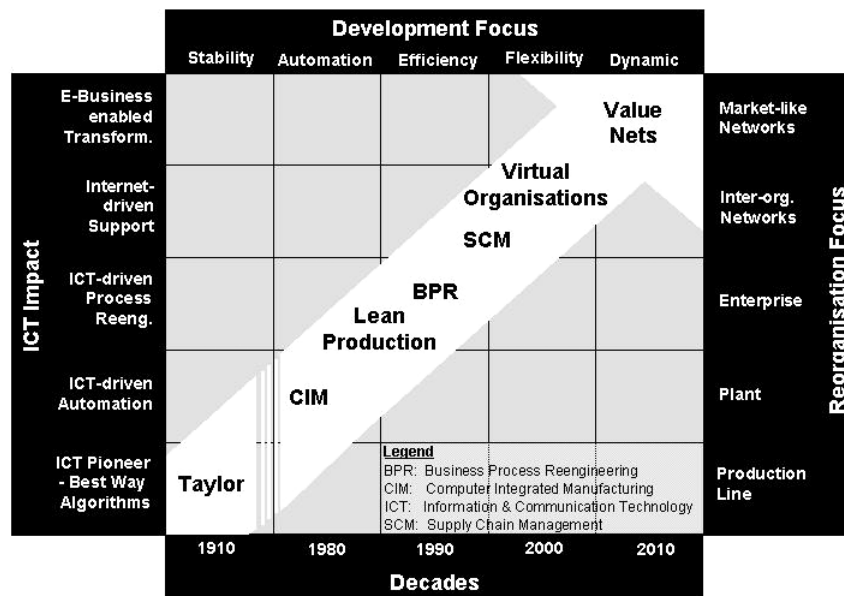
4 Conclusions and future perspectives

The 'E' of E-business (namely the use of ICT-based solutions) is a means that promises higher integration and efficiency, lower costs, profitability and sustainable growth. Though, E-business *is not a revolution*, but another (effective) way of doing business, an enabler that helps to integrate (inter and intra-organisational) performance processes and to make them more efficient. Companies may fail, but not because of the 'E' in their business. More likely, the ones who failed after the hype of 1999 did so, amongst other

reasons, because of a too hastily excitement-driven embedding of E-business solutions into their own organisation and ICT-infrastructure.

The path towards an inter-connected and dynamic economy appears to be a way of no return. As a matter of fact, all business activities of the future will be probably carried out across dynamic webs of companies. There are different possible definitions of this vision of dynamic, inter-networked, internet-based, flexible, hybrid or even market-like, knowledge-driven, agile and web-orientated organisational paradigms: Value-Creating Systems (VCS), Smart Organisations, Economic Webs, Value Nets or Dynamic Internet-enabled Supply Networks, to mention just a few. In Figure 4, which shows the development trend, all such paradigms were clustered under the definition 'Value Nets'. Within a decade, both academics and managers might not mention the 'E' related to businesses anymore. This will not mean that the E-business will have failed: on the contrary, the thorough embedding process will have come to its conclusion, and the inter-organisational integration, probably even 'back-end to back-end', will be a common and accepted reality in the entrepreneurial world.

Figure 4 The path towards Value Nets



The following pages therefore present selected approaches and powerful methods along with their impacts on enterprise management to answer the question: 'E-business, quo vadis?'