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Kathrin M. Möslein

Reprint

Proceedings of the

34th Annual Hawaii International
Conference on System Sciences
HICSS-34

Maui, Hawaii
January 3-6, 2001

IEEE COMPUTER SOCIETY

Washington ◆ Los Alamitos ◆ Brussels ◆ Tokyo

PUBLICATIONS OFFICE, 10662 Los Vaqueros Circle, P.O. Box 3014, Los Alamitos, CA 90720-1314 USA

The Location Problem in Electronic Business: Evidence from Exploratory Research

Kathrin M. Möslein
Technische Universität München, Germany
moeslein@ws.tum.de

Abstract

Information systems open up a broad range of possibilities for new forms of organization and electronic business on a global scale. Traditional organizational boundaries are dissolving and new organizational forms are emerging. Business "any time & any place" often seems to be the logical consequence. The gradual dissolution of temporal and spatial constraints in business processes, however, paradoxically shows a gaining importance of location in many fields. Even in electronic business the decision of "where?" might be of central importance. This paper discusses the new role of "place" in electronic business. Based on the outcome of organization and location theory, on the one hand, and empirical research in 28 electronic business pilots, on the other hand, the paper will show that location does by no means loose its importance in electronic business. The role of location, however, has to be redefined in organization as well as location theory.

1. Introduction

Electronic business and new organizational forms explode the classical boundaries of the firm with respect to time and space. Work places, business processes and even whole organizations are no longer bound to locations the way they used to be. The coordination of tasks gets more and more independent from static or predefined structures. Information systems and the electronic mediation of business processes are seen as the driving force of these developments.

Ten years ago, at the 24th HICSS in 1991, in his plenary speach Robert Johansen, Institute for the Future, presented a simple four-square map in order to visualize the new choices of time and location that are opened up to business organizations by electronic media [1]. This "Anytime & Anyplace Matrix" describes a two-dimensional differentiation between time and space, depending on whether the interaction takes place at the same location or at different locations, at the same time or at different times. It offers a basic conceptualization of spatial and temporal options as a basis for their organizational use. Since then at lot has changed in the business environment of organizations and markets. Many authors have proclaimed the future of "Global Work" [2], "Virtual Corporations" [3], "Boundaryless Organizations" [4], the "Death of Distance" [5] or the "Dissolution of Work Locations" [6].

1.1. Electronic Business: Towards Business "Any time & Anyplace"?

Today, electronic business and the partial dissolution of traditional work locations has become part of our business reality. The gradual dissolution of temporal and spatial constraints in business processes through information technology, however, paradoxically shows a gaining importance of time and location in many fields. Temporal and spatial decisions in global electronic business are not a question of "any time & any place". Even in electronic business the decision of "when?" and "where?" seems to be of central importance. The well-known case of Amazon.com provides a good example [7]:

"(...) In early 1994 two men, an American and a Briton, independently had the same inspired thought about the Internet. (...) In a few month, the two men, who were in their early 30s, had both set up what each claimed was the world's biggest on-line bookstore, one based in Oxford, the other Seattle. Both listed around 1m books, both were equally accessible from anywhere in the world, and both offered similar services for customers, such as e-mail notification when a new book by a favourite author had arrived. Here surely was an example of how the Internet was making a nonsense of geography, making even retailing a global industry?

Not entirely. In May (1997), Jeff Bezos, the American, took his bookstore, Amazon.com, public at a valuation of nearly $500m. (...) Two month earlier, Darryl Mattocks, the Briton, had listed his bookstore, the Internet Bookshop, on Britain's Ofex (...) at about $10m.

In Amazon's case (...) before setting up shop (Mr. Bezos) thoroughly investigated the business. He decided to move to Seattle - partly because it was a hotbed of software talent and partly it was near one of the world's biggest book warehouses (...). (Mr. Mattocks) did not research the industry in the same systematic way as Mr. Bezos. He started his firm in Oxford because that was where he lived, and he liked the town. But Oxford is not a book-distribution centre. (...) Even today, the decision to set up shop in Oxford costs his customers a day's delay in dispatching."

For sure, many other factors despite of the initial location decision have influenced the very different "success stories" of these two online book-sellers. The case of Amazon, however, clearly shows the importance of location decisions even in electronic business.

In sum, we observe the "dissolution of location" by electronic media on the one hand and the competitive advantage that can be derived from location decisions even in electronic business on the other. Michael Porter describes this apparent discrepancy as "paradox of location" in global competition: "In theory, more open global markets and faster transportation and communication should diminish the role of location in competition. (...) But if location matters less, why, then, is it true that the odds of finding a world-class mutual-fund company in Boston are much higher than in most any other place?" [8]. In short, the question is not, whether location matters at all. It matters. The classical location problem, however, has to be revisited in the context of global electronic business.

1.2. Outline

This paper discusses the new role of "place" in electronic business. First, it gives a brief review of the body of knowledge concerning the role of location provided by organization and management theory (section 2). Then, it will present the outcome of exploratory research in 28 electronic business pilots on a national, multi-national as well as global scale (section 3).

All these pilots have been evaluated at the Chair for General and Industrial Management of the Technical University Munich throughout the last 5 years in order to determine the overall economic effectiveness of alternative forms of multi-local cooperation processes in an electronic business environment.

Exploratory research is qualitative by nature. It does not permit the derivation of generally applicable assertions. Nonetheless, it justifies the development of hypotheses that can serve as a starting point for further empirical study. Lessons learned from our exploratory studies and future research perspectives will be sketched in section 4.

2. The role of location in organization and management theory

Organization theory traditionally interprets the choice of location as a constitutive decision usually made when the firm is first established. Decisions concerning location, legal forms or organization structures are seen as long term decisions that determine the framework of organizational choice without being themselves subject to change throughout an organization's lifetime. Since Alfred Weber (1909), known as the founder of classic location theory [9], numerous location theories have been developed [10]. Essentially, these theories analyze and systematize the factors influencing location decisions, i.e. location factors. In addition, they look into the development of decision models for making location determinations.

Regardless of the nature of the location problem, the main goal is usually "optimizing" the location among a set of relevant location factors. Minimizing transportation costs also still plays a major role in these theoretical deliberations, often quite in contrast to actual business practices. Once the "best" possible location has been identified, organization theory simply considers spatial arrangements as part of the organizational framework. As a consequence, traditional organization and management theories placed little emphasis on spatial arrangements. These organization theories do not address the question of location as a question of relevance for organizational design and redesign processes. Likewise, management theories typically ignore the specific questions of coordination and leadership at a distance across multiple distributed locations.

Indeed, problem solving has always taken place in the context of spatial distribution and mobility. Also, organizations have always used special technologies and mechanisms to coordinate the division of labor in such settings. Nevertheless, a closer look at classic organization and management theory shows that it implicitly builds on the assumption of "same time & same place" arrangements. In addition, economic organization and management theories traditionally even explicitly look at organizations as "timeless and placeless" institutions [11].

It is only recently, that organization and management theory puts new emphasis on the management of distributed resources [12], the design of IT-enabled distributed organizational structures [13], the growing importance of places and regions [14], the "spatial economy" [15] or changing locational advantages that arise through the growing information- and knowledge-intensity of products and processes. The transferability and mobility of explicit data or general (codified) knowledge by electronic media on the one hand and the "stickiness" and immobility of implicit or specific

knowledge on the other has provoqued a significant shift in the relative advantage of locations and spatially distributed resources [16]. The basic organizational parameters and principles, however, that should guide redesign processes are still unclear.

For this reason we examined a broad range of e-business pilots in highly information- and knowledge intensive application areas with the goal of determining first answers to the following questions: *What is the role of "place" in organizations moving towards e-business? When do location problems arise and what kind of location problems are we confronted with during the implementation of electronic business processes?*

3. The role of location in electronic business: Evidence from 28 e-business pilots

Electronic business fundamentally changes work processes in business and administration. The electronic support of business processes allows for new workplace arrangements, new process designs and changes overall organization structures. It allows for totally new organizational concepts of closeness and distance: Tasks that have been effected in face-to-face arrangements before (like many banking transactions) can be distributed on a global scale. Tasks that have been subdivided and geographically distributed before (like special treasury functions) can be pooled and re-integrated. Rich communication channels can be assigned to complex tasks and standardized transactions can be supported by electronic media without being bound to face-to-face interaction.

The requirements and effects of a successful implementation of electronic media to support distributed business processes, however, are hardly known. For this reason, numerous pilot projects have been implemented in industry and public administration in order to test alternative forms of media-supported cooperation processes in and in between organizations and markets. Application research that accompanies these pilots has to evaluate systematically success factors as well as barriers of these business innovations.

This section will first give a brief and systematizing overview of different aspects of e-business that have to be taken into account when discussing the e-business phenomenon (section 3.1). It then will discuss the role of pilot projects as innovation experiments in the field of e-business (section 3.2), before presenting the empirical basis (section 3.3) and the evaluation framework (section 3.4) of the present exploratory examination. Section 3.5 provides an exemplified overview of the basic findings that clearly have shown up in the pilot fields under examination.

3.1. A basic taxonomy of electronic business

Electronic business does not simply mean "doing business electronically", as business always goes far beyond the simple mediation of transaction and communication processes. E-business is not only about transactions, but also on building, sustaining and improving relationships, existing and potential, although these relationships have unique new properties in the framework of e-business [17]. Business in the "information age" has still to do with communication processes in between human beings, with trust, risk and expectations and with transportation processes of soft as well as hard goods. For this reason, it is helpful to have a closer look at the different types of relationships and cooperation partners that might be affected by the electronic mediation of business processes.

In general, we are used simply to distinguish between business-to-business (B2B) as well as business-to-consumer (B2C) transactions. Figure 1 shows a more detailed classification of electronic business. It distinguishes different types of cooperation partners - internal cooperation partners (employees) and external cooperation partners (consumers, businesses, and administrations) - on the demand side as well as on the supply side. E-business, from this perspective, is most commonly associated with [19]:

- buying and selling of information, products and services via Internet,
- sharing and transferring information between and within organizations to improve decision making and eliminate duplication of effort, as well as
- building, sustaining and improving relationships, both existing and potential, rather than just building on transactions.

Most organizations in industry as well as public administration have already jumped on the way towards electronic business. They are "experimenting" with different forms of media-supported cooperation within the whole spectrum of x2x relationships shown in figure 1. Pilot projects are usually the first step.

3.2. Pilot projects as innovation experiments

The aim of pilot projects in the field of technologically driven organizational innovations is to test the economic demand and effects of the innovation. Pilot projects as innovation experiments are characterized by [20]:

- the early implementation of a technological innovation as field experiment within the context of real world organizations (in contrary to lab examinations),

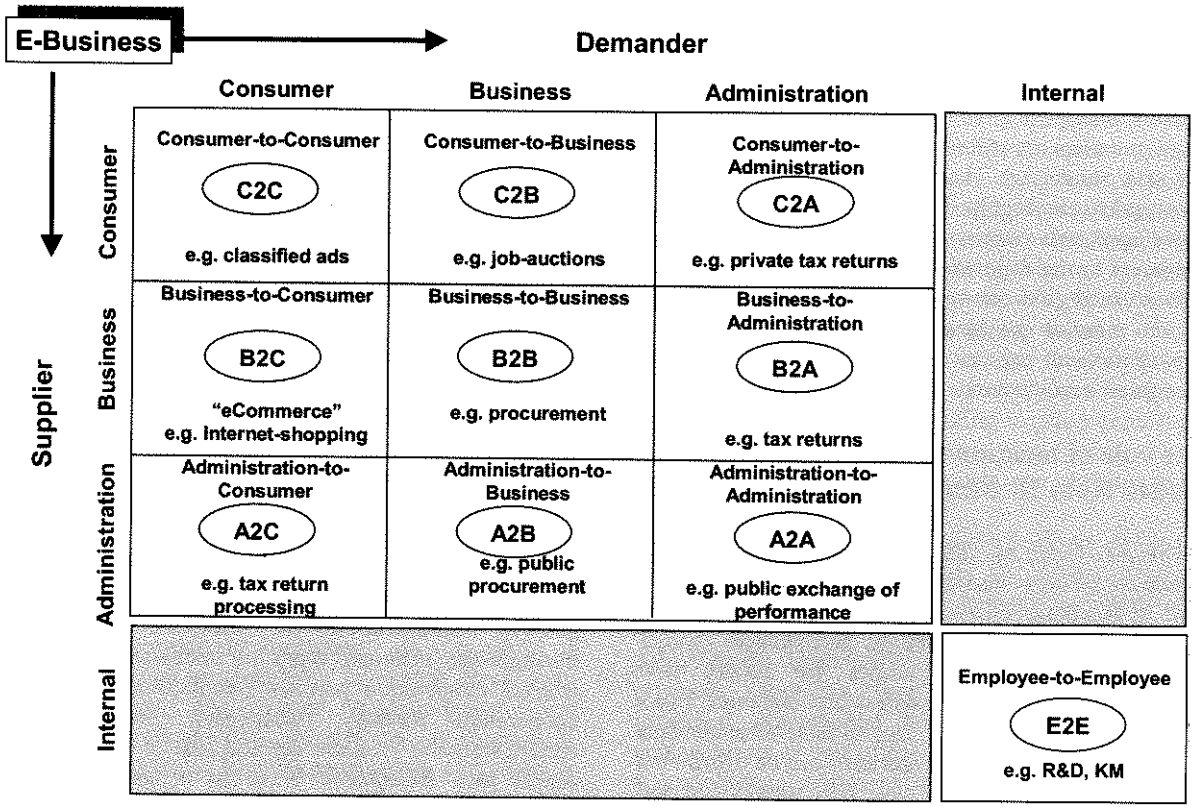

Figure 1: „Electronic Business Matrix" [18]

- the careful design and evaluation of the field experiment according to scientific standards,
- the participation of user groups, suppliers as well as application researchers as project partners of the innovation experiment.

Companies worldwide are "experimenting" with different aspects of electronic business, in order to get a better understanding of the nature and effects of this organizational innovation. Many (if not most) of these projects, however, are not in accordance with the above stated characteristics of a carefully designed and evaluated field experiment that can be seen as a starting point for the generation of hypotheses and further scientific research and as the "necessary formal step between the trial and adoption stages" [21]. For a researcher, to have access to significant organizational innovation processes and to be free to do research in these fields according to scientific standards, is a real chance.

Germany, in this respect, is in a good position: Germany is said to have a "special culture" of innovation experiments in the field of new media [20]. Since the late 1970ies field experiments in the context of technologically driven innovations with far reaching social impact have been a central building block in the early phase of political decision processes as well as the forming of public opinion. They have been mainly funded by public research organizations and in general followed the above stated criteria. In the meantime, however, also many business organizations followed, using carefully designed field experiments for improving their organizational innovation process. Since the mid 1990ies most of the Germany based global players in the manufacturing and service industries made use of scientifically accompanied organizational innovation experiments in the field of media-supported cooperation within the whole spectrum of x2x relationships.

3.3. Overview of the evaluated e-business pilots

During the last five years, the Chair of General and Industrial Management (Prof. Dr. Dr. h.c. Ralf Reichwald) at the Technical University Munich carried out economic evaluation studies in more than 25 innovation experiments in the field of electronic business. The pilot fields covered different aspects of media-supported cooperation within the whole spectrum of x2x relationships and can be clustered as follows (see also table 1):

Transformation / Evaluation Focus	E-Business Focus	Implementation Strategy, esp. oriented towards ...	Number of Pilots Evaluated	Industry / Branch	Geographic Reach
Workplace Innovation					
	B2B, E2E	... improving coopera-tion with remote partners	2	Research & Development	global
	B2B, B2C	... overcoming inter-national communication problems through time and location independence	3	Management & Administrative Services	global / multi-national
	B2C	... overall availability	2	Customer Relationship Management	multi-national
	B2B, B2C	... location independence	3	Service Industry	national / multiple locations
	A2A, E2E	... improving coopera-tion with remote partners	1	Public Administration	national / multiple locations
Process Innovation					
	B2B, E2E	... management and coordination processes	3	Information Technology / Tele-communications	global
	B2B, B2C	... inter-organizational collaboration	2	Multimedia, Entertainment	multi-national
	B2B, B2C	... inter-organizational collaboration	2	Construction Industry	national / multiple locations / mobile
	A2A, A2B (, E2E)	... inter-organizational collaboration	4	E-Government	national / multiple locations
	A2A, E2E (, A2C)	... intra-organizational collaboration	2	Public Administration	regional / multiple locations / mobile
	B2B, B2C	... customer integration	2	Service Industry	regional / multiple locations
Overall Organizational Innovation					
	B2B, E2E	... HR driven company-wide transformation process	1	Information Technology / Tele-communications	global
	B2B, E2E	... engineering driven company-wide transformation process	1	Automobile Manufacturer	global

Table 1: Overview of the evaluated e-business pilots

- Field experiments that primarily focus on supporting special tasks, functions or workplaces by e-technologies in order to improve the communication with customers, the cooperation with remote partners or to reach a higher degree of flexibility at the workplace level without changing overall business processes can be classified as *Workplace Innovation Pilots*. Up to now we have evaluated 11 pilot fields of this category with a total of more than 250 single workplaces and an average pilot phase of 2 years.
- Field experiments that primarily focus on the restructuring of processes and their optimization for e-business can be classified as *Process Innovation Pilots*. Up to now we have evaluated 15 pilot fields of this category covering a broad range of business processes and administrative processes in stationary as well as mobile process environments.
- Overall *Organizational Innovation Projects* that are directed towards the far reaching vision of "corporate virtualization" cover a much broader range of activities than carefully designed pilot fields. In two globally operating corporations we had access to such overall innovation processes that were driven by the vision of virtualization. Innovation experiments that were closely integrated into the overall innovation project have been implemented as elements of the corporate transformation process.

3.4. Evaluation framework

The economic evaluation of these spatially distributed pilot projects followed the strategic evaluation approach of networked efficiency - a multi-level evaluation approach for the implementation and diffusion of IT-enabled organizational change processes. It has been effected itself by means of electronic media, like video conference expert interviews, computer-aided team workshops, critical incident e-mails and a joint groupware data base (for a detailed description see [22]). The empirical basis of the present examination with regard to the question of location is formed by case studies. They are mainly based on expert interviews (with project initiators, project leaders), the CATeam workshops as well as an analysis of the critical incident emails.

By employing case studies, individual situations can be analyzed against the exemplary instance. While case studies are not representative, that is, they do not permit the derivation of generally applicable assertions that are equally pertinent to every organization moving towards e-business, case studies do nonetheless possess an exploratory character that justifies the development of hypotheses in comparatively similar situations, from which explanations and design recommendations may, in turn, be derived [23].

3.5. Evaluation outcome

In studying and evaluating the pilot projects, we have learned a lot about location decisions in today's organizations moving towards e-business. Our most important finding is a simple one: For organizations moving towards electronic business, location is gaining importance as an organizational design parameter. Location decisions are no longer purely constitutive decisions made when a company is first established, but show growing importance throughout the lifetime of an organization.

Depending on the design and scope of the pilot projects, organizations moving towards e-business are confronted with a whole spectrum of location problems that cannot be answered by classical organization and location theory. Based on the results of our exploratory research, the most evident aspects of location problems that arise when organizations move towards e-business will be sketched on three levels: on the workplace innovation level, on the process innovation level and on the overall organizational innovation level.

Location Decisions at the Workplace Innovation Level. In order to meet the needs and requirements of overall customer orientation in e-business, many organizations have started pilot projects with a focus on overcoming traditional work settings and implementing flexible work arrangements with distributed workplaces and flexible work schedules. In contrast to the "classical" telework and telecommuting pilots of the 1980ies the workplace innovation pilots of the late 1990ies were no longer focused on the pure relocation of work to the employee's home or nearby telecenters. They mainly experimented with the spatial distribution of alternative work locations and their specific suitability for selected tasks and work processes [24]. In terms of spatial factors, they combined and contrasted traditional office-based work with home-based work, center-based work, on-site work (taking place at the location of the customer, supplier or cooperation partner) as well as mobile work. All these fundamental alternatives of work location can be combined with different time concepts, contractual rules and technical infrastructures and show quite different advantages and disadvantages for specific tasks and work contexts. They form the basic building blocks of spatial workplace innovation and give rise to a fundamental "location problem" on the workplace level of organizations that is quite different from the "location problem" discussed in classical organization and location theory.

The case of Andersen Consulting's SpaceNet project provides a good example to illustrate today's location decisions rooted at the workplace level of organizational design: During the last five years Andersen Consulting (AC) implemented a Europe-wide concept of office

virtualization. Consultants at AC can now make a reservation for office space almost "any time & any place" around Europe with short notice. They will find their personal telephone, email and IS access there. Their office context will be moved virtually and will be available "right time & right place" for seamless access. In parallel, AC reorganized their office locations all around Europe. The office in Paris, that used to be at the location "La Défense" at the outskirts of Paris, has been moved to the heart of Paris and is now located in the Champs Elysées. The same applies for the Munich office, now located in the famous Maximilianstrasse in the heart of Munich, and for many other AC offices in Western Europe. The AC workplace innovation project might be one of the best examples for the strategic relocation of office space on a multi-national scale driven by the new possibilities opened up by e-technologies and the new requirements of a fundamentally changed business environment.

Location Decisions at the Process Innovation Level. Companies and administrations preparing for e-business by restructuring their processes are, first of all, forced to identify their core competencies and capabilities. This, in general, leads them directly to the question of an adequate modularization of their process structures. E-technologies play a leading role in modularization. As a rule, the combination of the advantages of process-oriented modularization and the advantages of highly integrated business processes can only be achieved through the use of e-technologies [25]. Such process-oriented restructurings are closely related to a special kind of location decisions: Business processes can span substantial portions of the value chain. In contrast to traditional functional organizational structures, integrated business processes usually involve cooperation partners at multiple locations. Strategies of process-oriented modularization and the strategic relocation of modular organizational units, therefore, are closely related [26]. For organizations the media-supported restructuring of their core processes, thus, opens up new spatial design options, it allows for new answers to process integration over multiple locations and for new ways of spatial distribution of process steps in global settings.

This became evident in most of the evaluated pilot projects. In public administration the POLIKOM projects focused on media-supported cooperation (tele-cooperation) between the distributed government locations Bonn and Berlin [27]. In this case, the location decision to move the German capital from Bonn to Berlin was first. The project primarily had to guarantee the governments capacity to act despite of the relocation and distribution of organizational units and cooperation partners. The projects, however, showed at the same time the chances that arise from internal "e-proficiency" for the implementation of external, citizen-oriented e-services by government institutions as well as for the inter-governmental process support at a global scale [28]. In the evaluated industry projects the driving force for moving towards e-business came either from the inside of the organization (e.g. integrating globally distributed engineering capacities) or from the outside (e.g. improving market-orientation and customer relationship management). In both cases, the projects were confronted with the problem of overcoming distances in between spatially distributed cooperation partners, with questions of distributed work, distributed management and coordination processes and the distributed provision of services. The partial relocation of organizational units was a common consequence in order to optimize communication channels despite of (or even because of !) the overall availability of e-technologies.

Location Decisions at the Organizational Innovation Level. At the corporate level far reaching economic effects are expected from the dissolution of corporate boundaries with regard to time and space. Organizational virtualization often stands for the vision of an overall flexible organization with spatially distributed organizational units that reconfigure dynamically. Task-oriented assignments are said to determine the structure of a virtual enterprise at any point in time. Up to now, the interplay of organizational virtualness and economic effectiveness is hardly understood. The vision of virtualization, however, builds the conceptual basis for many corporate e-business strategies of globally operating organizations. The overall organizational innovation strategies that are followed by these globally operating corporations have been discussed by many authors. In a simplified way, they can be described as three main strategies of organizational innovation that are followed by corporations in order to adapt to changing internal and external conditions [29]:

- Strategies of *modularization* of organization structures are followed where products and services are getting more and more complex and the hierarchy therefore lacks the necessary flexibility of the internal communication channels.
- Strategies of *networking and cooperation* are of dominant importance where increasing levels of market uncertainty mean growing risk for integrated corporations. In this case networking with market partners stands for the distribution of risk among several cooperation partners.
- Strategies of *virtualization* try to combine the advantages of modularization and networking and are seen as particularly well suited for those tasks that are characterized by both their high level of complexity and a correspondingly high level of market uncertainty.

SIEMENS AG as a global player in the information technology and telecommunications industry with organizational units in 160 countries worldwide, has chosen the vision of virtualization for its overall organizational innovation process. It describes its vision of future work at SIEMENS worldwide with a nice story - the "Telew@ys 2005" szenario. It's the story of Erwin Schnell, a SIEMENS employee living and working in the year 2005:

Erwin Schnell has just finished successfully a demanding project in the SIEMENS world. Now, on may 15, 2005, he is still on holiday in Honolulu. But after almost two weeks of holiday, life becomes a little boaring - even in Hawaii - and Erwin Schnell is ready for a new challenge. He takes another drink and logs into the SIEMENS intranet in order to apply for a new demanding SIEMENS project somewhere in the world ...

That is just the beginning of the story of Erwin Schnell. The story exists as a written story, as video clip and comic strip, it is told by board members and employees [30]. The Telew@ys 2005 szenario describes the SIEMENS vision of future organization in the age of e-business. It is the guiding vision of the actual transformation process.

Time and location matters: "Honolulu, may 15, 2005". The "virtual organization" described is structured by projects - projects that are characterized by type, location and time horizon. They will require a maximum of mobility from the individual and a maximum of flexibility from the organization as a whole. That is the serious part of the story, but it is also part of the Telew@ys 2005 szenario.

The virtual organization, thus, will be neither timeless nor placeless. In order to reach its appearance of "ubiquity" and "omnipresence", organizations moving towards virtualization, however, will be forced to find organizational solutions that go far beyond the simple availability of a web presence 7x24 hours a week. The problem of dynamic allocation and relocation of resources in a global context is of central importance for this process of organizational virtualization. The economic effectiveness of virtual organizations will largely depend on their ability to allocate resources "right time & right place".

4. The location problem in e-business: Lessons learned and future research perspectives

As "all business will be e-business" in the future, as often said, many organizations are now in a stage of experimentation. On their way towards e-business, they are trying to redesign their "outfit" through more or less far reaching organizational innovation processes by implementing e-technologies in experimental settings. These innovation experiments typically focus on workplace aspects, process aspects or overall organizational aspects and can be grouped accordingly (see figure 2). In all types of projects we have been confronted with location problems different from the problems that are answered by classic location theory in many respects.

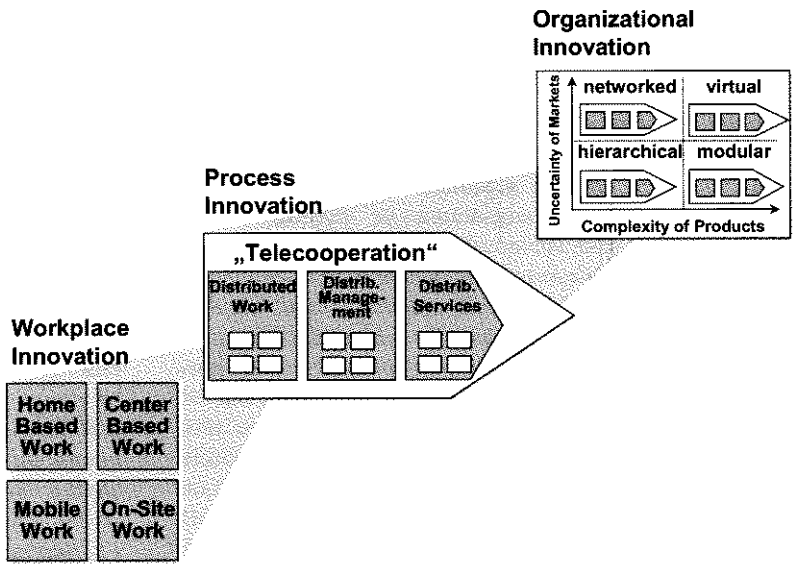

Figure 2: Basic Strategies for the Implementation and Diffusion of Electronic Business

Our findings with regard to the location problem in electronic business can be summarized in five theses:

- Location matters: For organizations moving towards electronic business, location is gaining importance as an organizational design parameter. Location decisions are no longer purely "constitutive decisions", but show growing importance throughout the organization's lifetime.

- At the workplace innovation level, the new options to design work arrangements with distributed and mobile workplaces give rise to questions concerning the spatial distribution of work locations that best meets the special requirements of different tasks and their accomplishment.
- At the process innovation level, e-business opens up new forms to integrate customers, suppliers or cooperation partners. This, again, gives rise to spatial design questions concerning process integrations over multiple locations or the spatial distribution of process steps in global settings.
- At the overall organizational innovation level, e-business is closely related to the vision of virtualization. Virtual organizations, however, are neither timeless nor placeless. Organizations moving towards virtualization are intensively looking for "right time & right place" solutions for the accomplishment of tasks - quite in contrary to general belief (and to the widely adopted vision of "any time & any place").
- Market-oriented flexibility and customer orientation are by far the dominating goals of the evaluated redesign efforts towards electronic business. However, there was striking evidence from the e-business pilots that the key to flexibility at the outside is high "e-proficiency" at the inside of the organization. Organizations are analyzing their core processes, they are searching for their dominant eCRM capabilities and implementing distributed work arrangements and process designs in order to reach the above stated goals. Proficiency especially in the internal employee-to-employee (E2E) field can therefore be seen as key for the successful implementation of e-business in the inter-organizational e-business processes.

This paper examined the role of location in electronic business. It looked at the location problem and its treatment in classic organization and location theory and at the role of location in today's e-business pilots. The evaluation studies that build the empirical basis of this examination had a broad economic evaluation scope and an exploratory design. The theses derived, therefore, need further examination. In order to gain deeper insight into the nature and impact of location decisions in electronic business, future work should specifically address and investigate organizational decision processes concerning location decisions on the workplace, process and organizational level.

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