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**REINVENTING PLACE:
THE NEW ROLE OF LOCATION IN ELECTRONIC BUSINESS**

**Ralf Reichwald
Kathrin M. Möslein
Frank T. Piller**

Prof. Dr. Dr. h.c. Ralf Reichwald

Chair of General and Industrial Management
Technische Universität München
Leopoldstr. 139
80804 Munich / Germany
Tel.: ++49-89-36078-200
Fax: ++49-89-36078-222
Email: reichwald@ws.tum.de
<http://www.prof-reichwald.org/>

Dr. Kathrin M. Möslein

Chair of General and Industrial Management
Technische Universität München
Leopoldstr. 139
80804 Munich / Germany
Tel.: ++49-89-36078-231
Fax: ++49-89-36078-222
Email: moeslein@ws.tum.de
<http://www.prof-reichwald.org/>

Dr. Frank T. Piller

Chair of General and Industrial Management
Technische Universität München
Leopoldstr. 139
80804 Munich / Germany
Tel.: ++49-89-36078-216
Fax: ++49-89-36078-222
Email: piller@ws.tum.de
<http://www.prof-reichwald.org/>

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REINVENTING PLACE: THE NEW ROLE OF LOCATION IN ELECTRONIC BUSINESS

Location decisions in electronic business are not a question of “anytime & anyplace”. The gradual dissolution of temporal and spatial constraints in business processes through information technology paradoxically shows a gaining importance of location in many fields. Based on exploratory research in 28 electronic business pilots on a national, multi-national as well as global scale, this paper discusses the new role of “place” in electronic business.

1. Electronic Business: Towards Business “Anytime & Anyplace”?

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. Many authors have proclaimed the future of “Global Work” [1], “Virtual Corporations” [2], “Boundary less Organizations” [3], the “Death of Distance” [4] or the “Dissolution of Work Locations” [5]. Business “anytime & anyplace” [6] seems to be the logical consequence. The gradual dissolution of temporal and spatial constraints in business processes through information technology, however, paradoxically shows an increasing importance of time and location in many fields. Electronic business is not a question of “anytime & anyplace”. The decision of “when?” and “where?” seem to play a major role.

This paper discusses the new role of “place” in electronic business. First, we give a brief review of the body of knowledge concerning the role of location provided by traditional organization and management theory (section 2). Then, we will discuss the results of an exploratory research in 28 electronic business pilots on a national, multi-national as well as global scale (sections 3 and 4). 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 5.

2. Organizations as “Timeless and Placeless” Institutions: The Traditional Perspective of 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 [7], numerous location theories have been developed [8]. 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 distributed coordination and leadership. Classic organization and management theory implicitly builds on the assumption of “same time & same place” arrangements. In addition, economic theories traditionally even explicitly look at organizations as “timeless and placeless” institutions [9].

It is only recently, that organization and management theory have put new emphasis on the management of distributed resources [10], the design of IT-enabled distributed organizational structures [11], the growing importance of places and regions [12], the “spatial economy” [13], and changing locational advantages arising 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 have provoked a significant shift in the relative advantage of locations and spatially distributed resources [14]. 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. Overview of the Evaluated 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.

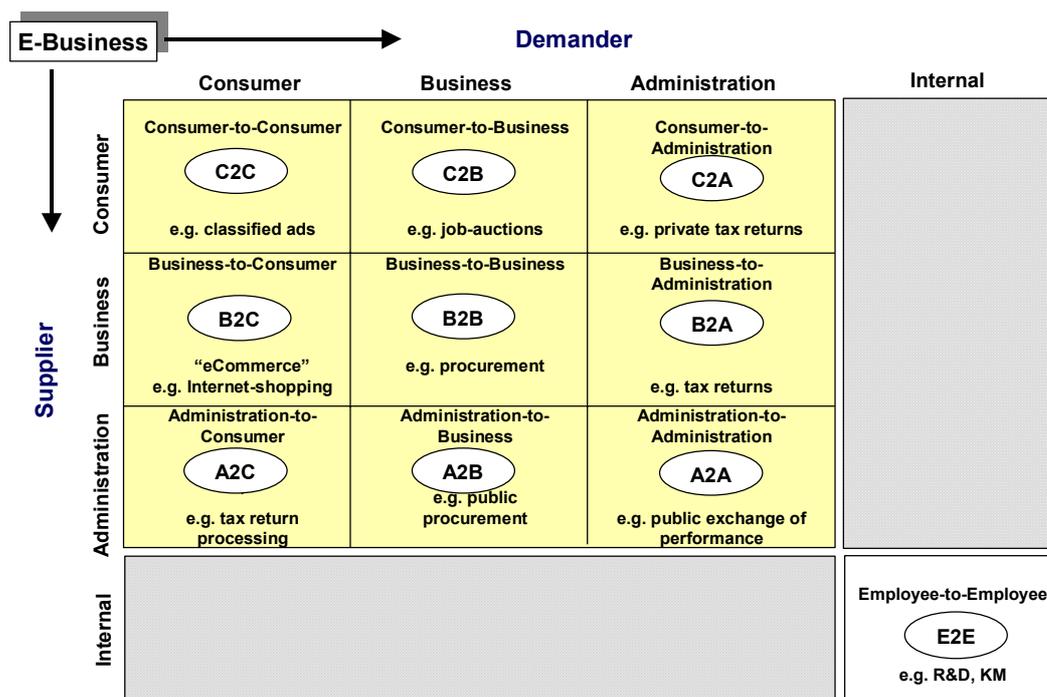


Figure 1: „Electronic Business Matrix“

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 [15]. The first step of moving into new forms of organizational structures is often the implementation of an organizational pilot. These pilots offer a good field for studying organizational change. During the last five years, we carried out economic evaluation studies in 28 of these “innovation experiments” in the field of electronic business. The 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 [16].

Transformation / Evaluation Focus	E-Business Focus	Implementation Strategy, esp. oriented towards ...	No. of Pilots Evaluated	Industry / Branch	Geographic Reach
Workplace Innovation					
	B2B, E2E	... improving cooperation with remote partners	2	Research & Development	global
	B2B, B2C	... overcoming international 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 cooperation 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

Figure 2: Overview of the evaluated e-business pilots

The pilot fields covered different aspects of e-business relationships and can be clustered according to their transformation and evaluation focus as shown in figure 2:

- 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.

4. Findings and Discussion

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 can be sketched on three levels according to the transformation focus of the pilots evaluated: the workplace innovation level, the process innovation level and the overall organizational innovation level.

4.1 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 focusing on substituting traditional work settings by flexible work arrangements with distributed workplaces and flexible work schedules. In contrast to "traditional" 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 [17]. 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 "SpaceNet project" by consulting firm Accenture (former Andersen Consulting) provides a good example to illustrate today's location decisions rooted at the workplace level of organizational design: During the last five years Accenture implemented a Europe-wide concept of office virtualization. Consultants can now make a reservation for office space almost "anytime & anyplace" 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, Accenture 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 at the Champs Elysées. The same applies for the Munich office, now located in famous Maximilianstrasse in the heart of Munich, and for many other Accenture offices in Western Europe. The Accenture 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.

4.2 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 [18]. 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 [19]. 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. 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 [20]. 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.

4.3 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. The vision of virtualization builds the conceptual basis for many corporate e-business strategies of globally operating organizations: 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 transition process as a movement towards virtualization and sketches 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 [21]. 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”.

5. Lessons Learned and Future Research Perspectives

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

- (1) Location matters: Organizations moving towards electronic business, are “re-discovering place” as an organizational design parameter. Location decisions are no longer purely “constitutive decisions”, but show growing importance throughout the organization’s lifetime.
- (2) 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.
- (3) 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.
- (4) 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 “anytime & anyplace”).

- (5) 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 assessment. 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. The importance of place for corporate competitiveness is still not adequately reflected in organization and management theory. “Reinventing place” as a strategic design parameter therefore seems to be of major importance – especially for organizations moving towards e-business.

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