

HOW DO WE TAKE CARE OF STRATEGIC ALIGNMENT?

Constructing a design approach

Jesper Simonsen

simonsen@ruc.dk
Computer Science Department
Roskilde University

Abstract

The article reviews the concept of 'strategic alignment' and presents the critique by Ciborra in SJIS (Vol. 9, No. 1) entitled "De profundis? Deconstructing the concept of strategic alignment". We present a design approach that suggests how designers, conducting design projects in a specific organization, can take care of and ensure that the design of IT is appropriately aligned with the organization's overall business strategy. We describe a design project using this approach. The project presented took place in a small public organization. Focusing on alignment as part of the design process had a powerful effect: It revealed that the system the organization believed it needed was irrelevant, while the organization needed other systems that had not been thought of beforehand. It also led to findings that challenged the organization's existing business strategy, and it gives an example of how environmental conditions, business strategies, and plans for IT are changing and hence challenge traditional approaches to strategic alignment. The results from the design project are described and related to IS literature and to Ciborra's article.

Keywords:

Strategic alignment, strategic information systems planning, care, Scandinavian approach to systems design, participatory design method, design approach to strategic alignment.

INTRODUCTION

Strategic alignment addresses the problem of coordinating the relationship between the business

domain and the information technology (IT) domain. Improving strategic planning (and hereby strategic alignment) has been the number one key issue within IS management inquiries made in 1980, 1983, and 1986 (Brancheau and Wetherbe, 1987); and it has been the number three key issue in 1990 (Niederman, Brancheau and Wetherbe, 1991). It still continues to be reported as the most important IS management issue among key IS issues (Lederer and Sethi, 1996; Reich and Benbasat, 1996; Gottschalk and Lederer, 1997). The skills and knowledge used for aligning IT solutions with business strategy are believed to be the most critical requirements for the IS profession, as it moves closer towards the 21st century (Lee, Trauth and Farwell, 1995).

The IS literature is dominated by a rational top-down approach to alignment and strategic information systems planning. In the article "De profundis? Deconstructing the concept of strategic alignment" (Ciborra, 1997b), Ciborra launches a strong attack against the dominating IS literature. He claims that this literature proposes abstract models that are not rooted in the empirically observable everyday practice of managers and organizations. Instead, Ciborra suggests an approach to strategic alignment that is related to reflections upon our everyday experiences and rests upon such concepts as care, cultivation, and hospitality.

This article takes its starting point in Ciborra's critique and in his description of the concept of 'care'. The purpose of this article is to present an approach to strategic alignment inspired from the Scandinavian approach to systems design. The article represents the perspective as viewed by the IT/IS-professionals (in the following referred to as 'designers'), who are responsible for implementing IT. This approach should be seen as a supplement and in some cases it might be an alternative to the majority of IS literature that represent a management focused, top-down approach to strategic alignment.

The article is structured into three overall sections: A theoretical section, an empirical section, and a discussion section.

1. In the theoretical section, we present a review of the concepts 'Strategic Alignment' and 'Strategic Information Systems Planning'. Ciborra's critique is outlined and used as a starting point for presenting our approach given in this article. We introduce a contemporary method for participatory design and describe the method's approach to strategic alignment. In this method, taking care of strategic alignment is considered as one out of five overall main activities.
2. In the empirical section, we describe a study based on action research, where we conducted a design project and focused on strategic alignment¹. The project took place in a small public organization. Focusing on alignment as part of the design process had a powerful effect: It revealed that the system the organization believed it needed was irrelevant, while the organization needed other systems that had not been thought of beforehand. It led to findings that challenged the organization's existing business strategy, and it gives an example of how environmental conditions, business strategies, and plans for IT are "drifting" and hence are challenging traditional approaches to strategic alignment.
3. The discussion summarizes the lessons learned from the empirical study and discusses the relevance of the suggested design approach. We reinterpret the design project by seeing it in light of the IS literature and Ciborra's alternative approach, and by presenting an epilogue to

the project. Finally, we conclude and outline some implications for practitioners and researchers.

STRATEGIC ALIGNMENT

Strategic alignment is often discussed in the context of strategic information systems planning (SISP). Strategic alignment (in short 'alignment') and SISP are 'two sides of the same coin'. While SISP addresses the (planning) process of coordinating the relationship between the business domain and the IT domain, alignment represents the result, or product, of that process.

Both concepts are widely used:

- SISP is used by e.g. Earl (1993); Gottschalk and Lederer (1997); Henderson and Sifonis (1988); Lederer and Salmela (1996); Lederer and Sethi (1988; 1991; 1992; 1996); O'Connor (1993) and Premkumar and King (1994a), while others use the shorter Information Systems Planning, ISP (e.g. Premkumar and King, 1994b; Raghunathan and Raghunathan, 1994). Strategic Planning for Information Systems (SPIS) has earlier been suggested by King (1988).
- Alignment is used by e.g. Brown and Magill (1994); Henderson and Venkatraman (1992); Keen (1991); Lee et al. (1995); Parker et al. (1989); and Venkatraman et al. (1993). Other similar concepts like linking (Henderson and Sifonis, 1988; Tavakolian, 1989), linkage (Reich and Benbasat, 1996), and fit (Venkatraman, 1989; Yetton, Craig and Johnston, 1995) are also used.

SISP is explicitly defined as "the process of identifying a portfolio of computer-based applications to assist an organization in executing its business plans and realizing its business goals" (Lederer and Sethi, 1988, p.446)². Seen in this perspective, the alignment approach takes the organization's business strategies as a given and meets these strategies by proposing relevant and supportive IT³. This approach aims at establishing "a long range plan of computer based applications" (Lederer and Sethi, 1991, p. 104), in order to support current and projected business strategies.

The Top-Down Approach to Alignment

SISP and the process of aligning IT with an organization's overall business strategy is generally viewed as a (top) management issue (Keen, 1991; Cash, McFarlan and McKenney, 1992; Hammer and Champy, 1993; Lederer and Sethi, 1996), and is dominated in the IS literature by a rational top-down approach (Henderson and Sifonis, 1988; Premkumar and King, 1994b; Yetton, Craig and Johnston, 1995). Methods used within SISP employ a top-down approach (Lederer and Sethi, 1988; Premkumar and King, 1994a), and they typically begin by clarifying business strategy and typically end by defining appropriate IT design projects that implement the plans (Lederer and Sethi, 1996). Examples of SISP methods are the 'six stages' methodology presented by Kovacevic and Majluf (1993), IBM's Business Systems Planning (Lederer and Sethi, 1992), and Andersen Consulting's Method/1 (Lederer and Salmela, 1996).

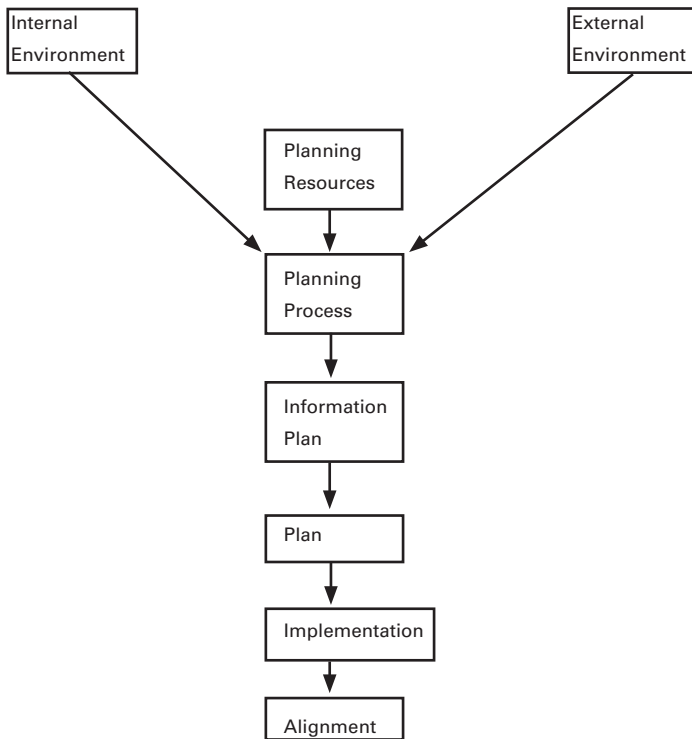
The IS literature's approach to alignment has recently been summarized in a theory of SISP, describing a top-down planning process with environmental issues as input and alignment as output (Lederer and Salmela, 1996), see figure 1. Input is perceived and influenced by external environments (customers, suppliers, competitors, legislation, technology, etc.), internal environments (organizational culture, size, structure, goals, management style, etc.), as well as by plan-

ning resources (the organization’s business strategy and the time, effort, skills, and experiences from management and consultants). The output of the process is the production of a strategic information systems plan, followed by this plan’s implementation (i.e. the initiation and implementation of the recommended design projects), and finally alignment. Alignment is, in this theory, the degree to which the planning process results in strategic information systems. Here, alignment aims at achieving a fit between implemented projects and the organization’s objectives. Thus the theory views alignment as the product or the effect or outcome (Reich and Benbasat, 1996) of the SISP-process.

The typical SISP setting, according to this theory, is a situation where top management in an organization – eventually supported by expensive consultants – produces a strategic information systems plan and implements this plan by deciding and initiating a number of design projects as defined and prescribed in the plan. The plan then envisage that a proper alignm

ent is achieved when the design projects have been carried out. In other words, the external and internal environment as well as the plan itself are taken as relatively stable, and the design project – once initiated – will end in producing alignment.

Figure 1: A top-down alignment model (Lederer and Salmela, 1996, p. 240).



Further on in this article, we refer to the dominating alignment approach as outlined above, where alignment can be defined as “the degree to which the IT mission, objectives, and plans

support and are supported by the business mission, objectives, and plans” (Reich and Benbasat, 1996, p. 56). In specific, our alignment perspective focuses on the relationship between an organization’s overall business strategy and the current or planned IT design projects. We include in the overall business strategy the relation between business strategy and the organization’s environment (this is in line with e.g. (Galliers, 1993)).

Ciborra’s Critique

Ciborra (1997a; 1997b) has recently argued that the dominating and rational top-down planning approaches to strategic alignment within IS literature do not reflect the practices that can be observed in actual organizations and management behavior. He claims – rather polemically – that the IS-research of strategic alignment has failed and that new papers addressing this topic as a result deliberately avoid using this concept (Ciborra, 1997b).

Alignment is modeled as a bridge between business strategy and IT infrastructure, and to Ciborra this is an attempt to bridge two extremely unstable variables. This is bound to fail, since strategy ends up in “tinkering” or “bricolage” (Ciborra, 1991) and the IT-infrastructure tends to “drift”: “[T]here is no observable alignment, nor measurable fit, because strategy now is *de facto* bricolage, while the technology is mostly “out of control”” (Ciborra, 1997b, p. 69). Alignment models are theoretical abstractions that only exist in an “objective” world. Researchers develop these models in order to raise management awareness. New management practices usually develop then when managers tend to grant essence and existence to the models which again leads to breakdowns and “ultimate impotence” (Ciborra, 1997b, pp. 70f).

Ciborra explains the route that research within strategic alignment has taken:

“[R]esearchers made multiple abstractions out of the muddling through and drifting; idealized tinkering and called it strategy; idealized technology as a controllable set of means and called it IT; granted to these concepts existence and essence, transformed them into boxes and traced a line between them. Then, they started the difficult journey back to the real world, and found difficulties in measuring “the strength of the line” or formulating prescriptions that would be followed by managers when tracing the line on the field of practice. They ingeniously provided more and more sophisticated representations of alignment, as more analytical and detailed maps for the actors to operate in the real world. To no avail: the higher conceptual detail remained confined to the world of idealized abstractions, but had little impact on the life worlds of business and organizations. The research wheel was turning on empty” (Ciborra, 1997b, p. 72).

Ciborra’s Alternative Approach

As an alternative approach to addressing the issue of alignment, Ciborra suggests that “[w]e go back to basic evidences, and encounter the world as it presents itself in our everyday experience [...] and reflect upon what we observe” (Ciborra, 1997b, pp. 72f.), using a new language based on three concepts: Care, hospitality, and cultivation. These three concepts are described below.

The concept of *care* suggests a change of focus from viewing alignment as a product of a rational planning process (SISP) to viewing it as a continuous aim of supporting and developing alignment as a relation – a relation which involves various actors beyond management. Care-taking related to strategic alignment thus becomes a part of the agenda of the specific design projects:

“The driving force behind alignment in-action, as opposed on-paper, is a great amount of care taking performed by the various actors involved in the design, implementation and use of IT applications: [...] it is just familiarity, intimacy and continuous commitment from the initial needs analysis throughout constructing the system, training the users, introducing the system into practice, modifying it as new practices emerge, and so on” (Ciborra, 1997b, p. 73).

Care can be expressed in three ways, as intentional perception, as circumspection, and as understanding (Ciborra, 1997b, pp. 73f.):

- Care performed as intentional perception has its domain in artificial “objects” and includes the rational alignment approach from IS literature. It deals with idealizations, abstractions, and rationalizations, and develops methods, concepts, models, and structured designs.
- Care as circumspection deals with the “worldliness” of objects and is concerned with the practical learning and problem solving situated in the specific organizational context. It involves ‘getting our hands dirty’ in managing the process of developing systems and related work organization and work practices.
- Care expressed as understanding is the domain of “worlded” objects that are now embedded in the daily work practices. Understanding alignment ultimately means that this is part of our tacit knowledge.

The *hospitality* concept addresses the organization’s acceptance of the IT that is expected to achieve the strategic alignment. Proposing and implementing new IT is not just a matter of carrying rationally planned changes into effect. It also involves changing work organization and power balances, and it typically involves (at least temporarily) an extra work load in changing existing work practices.

“Acceptance has to face ambiguity: coping becomes hospitality. On its turn, hospitality is an unstable way of coping with the stranger: it can suddenly turn into hostility” (Ciborra, 1997b, p. 74).

Cultivation is a concept which Dahlbom and Mathiassen (1993) define as an approach to change, where there is a reliance on changes being conducted as a series of small steps, and where the existing organization is slowly (but continuously) ‘cultivated’ to meet the new demands for change. Cultivation is thus a conservative approach, in contrast to the radical changes as suggested by business process reengineering (Hammer, 1990; Hammer and Champy, 1993). The concept of cultivation should invite us to interpret organizations as “organisms” with a life of their own, not just changing ‘on demand’:

“Cultivation is a conservative belief in the power of natural systems to withstand our effort at design either by disarming them or by ruining them by breakdowns” (Ciborra, 1997b, p. 76).

A Design Approach to Strategic Alignment

In the following, we present a design approach to strategic alignment. This approach represents a perspective as seen by the designers who aim at implementing IT. Design projects should result in the development of IT that is aligned with the organization’s overall business strategy.

Our approach is rooted in the Scandinavian approach to systems design, also known as Participatory Design (PD) (Greenbaum and Kyng, 1991; Muller and Kuhn, 1993; Schuler and Namioka, 1993). The approach has been developed within a research program, the purpose of which is to develop theories of and approaches for early systems design in an organizational context⁴. We have experimented with different techniques and approaches in a number of projects, in order to develop a method for design in an organizational context. Our experiences from these projects have contributed to the presentation of a coherent method for systems design (Kensing, Simonsen and Bødker, 1998). This method includes guidelines for taking care of the link between an organization's overall business strategy and specific needs for IT-support.

The starting point for a design project might be the result of a preceding SISP-process. But far from all design projects have been preceded by a SISP-process, and if they have, this SISP-process might not have been the result of a systematic and formal method (Earl, 1993). Therefore, a design project often finds its starting point in a rather 'blurred reality' (Ciborra, 1997a).

We have experienced that especially small organizations do not conduct large and systematic SISP-projects. Thus, when a specific design project is initiated, the relation between the project and the organization's overall business strategy might not be clear for all of the involved parties. Similar experiences are reported by Reich and Benbasat (1996). During the project, contradictions, disagreements, and/or lack of policies concerning the strategic business level and the need for IT support might arise.

In agreement with Ciborra (1991; 1997a; 1997b), we argue that the relation between a design project and an organization's overall business strategy is not only a management related issue and should not only be viewed as a top-down process, but it should also be considered as a part of the specific design project. This approach corresponds with what Henderson and Venkatraman (1992) refer to as a 'double-loop transformation process within strategic alignment' and is in line with the approach to SISP which Earl (1993) terms 'organizational'.

Strategic Alignment on the Agenda of a PD Method

In order to prepare for a proper alignment, it is important to seek congruence between the management's long term visions and the designers' long term visions for IT deployment. It is also important to establish a mutual understanding between the management's current objectives and the designers' current objectives (Reich and Benbasat, 1996).

We suggest that it is the responsibility of the designer, conducting a design project in an organizational context, to examine the overall rationale of the design project. This involves clarifying how the organization's overall business strategy is related to and should be supported by the needed IT, and hereby clarifying and delimiting the work domains to be in focus in the design project. Thus strategic alignment (in principle) ought to be part of the agenda of any design project. In our method for participatory design, we suggest that one main activity should be directed towards this aim. We call this activity "strategy analysis". The method suggests that the overall design process is constituted by five main activities: Project establishment, strategy analysis, in-depth analysis of selected work domains, developing visions of the overall change, and anchoring the visions (see figure 2).

Figure 2: An outline of the five main activities that the PD method suggests as the overall organization of the design process. Strategic alignment is the agenda of the activity referred to as “strategy analysis”.

Project establishment.
We always recommend starting with Project Establishment – a systematic way of supporting the clarification and negotiation of the aim, level of ambition, scope, and conditions of the project.
Strategy analysis
Strategy analysis is a management related activity, which clarifies the alignment between business strategy and the overall purpose of the design project. The result of the strategy analysis is to clarify and delimit which work domains should be in focus in the design project.
In-depth analysis of selected work domains
The work domains pointed out as a result of the strategy analysis are in focus when in-depth analyses of current work practices are performed. The purpose is to reveal and develop an understanding of the rationale behind current work practices.
Developing visions of the overall change
Developing one or more visions of the overall change is the central design activity. We emphasize that the visions should not only deal with the functionality and the user interface of the suggested systems, but also include organizational change and changes in qualifications needed by the users.
Anchoring the visions
The purpose of anchoring is to ensure that the vision’s rationale is understood by the management who decides if it should be implemented, by those who will realize it by carrying out the technical and organizational implementation, and by the users who will have to live with its consequences.

The strategy analysis suggested by the method includes that the designers take the responsibility for:

- Analyzing the organizational context in question, revealing the organization’s business strategy and environment.
- Clarifying the degree to which management and other involved parts of the organization understand the relation between the overall business strategy and the current project.
- Assuring that the design project supports the organization’s business strategy, and if not, questioning the design project (or the business strategy).
- Identifying, with reference to the organization’s overall strategies, the work domains that need IT-support.

Strategy analysis clarifies the potentials for investments in IT-support and it investigates organizational, economical, and technical limitations. It involves developing an understanding of environmental issues such as the following: The organization’s situation on a competitive market, which parts of the organization need to be strengthened and how this relates to the current design project, identification and analysis of customers and suppliers (internal and/or external), and which products and services the organization should provide. Thus the focus of the strategy analysis is on the needs, requirements, demands, conditions, constraints, etc. that the environment imposes on the organization and that the design project aims at meeting with IT-support.

Basically, the strategy analysis comprises the clarification or development of a chain of arguments that explain the purpose of the design project in relation to the overall business strategy, and it clarifies the work domains that need IT-support. Furthermore, strategy analysis comprises an awareness of this relation throughout the design project: New insights and perspectives might develop that challenge this relation, especially in PD projects, where different stakeholders and other interest parties are involved. Also, environmental issues that can look stable to an outsider, may drift in unanticipated ways, bringing a design project in a new situation. In this way, strategy analysis is a relevant activity both as a specific activity in the design project and as something to

be continually aware of throughout the project.

We have experienced in some cases that these issues have been thoroughly dealt with before the project starts: Typically then in those cases, strategy analysis becomes part of the project establishment activity and the design team simply takes 'care' of strategic alignment by understanding the implications for the current project and including this in the project charter.

However, we have also found that such issues, though clearly stated in the project charter, become unclear during the project, and this initiates a need for further circumspection of alignment concerns (see for example Kensing, Simonsen and Bødker, 1998).

Finally, we have experienced that the issue of aligning specific IT support with business strategy develops into a primary project activity. This was the case in the project reported on below (section 3).

A DESIGN PROJECT WITH A FOCUS ON STRATEGIC ALIGNMENT

In this section, we present a study based on action research, where we conducted a design project focusing on the strategy analysis activity within the PD method. The study is in the following referred to as the 'design project'.

The project is chosen as the empirical example in this article for several reasons:

- Our experiences related to strategic alignment were initially developed in this project.
- The project represents a case, as mentioned above, where a strategy analysis became a primary project activity.
- The project gives an example of organizational and technological drifting that calls for care-taking throughout the project, as suggested by Ciborra.

We describe the design project in the following by presenting the setting, the starting point of the project, how the project was conducted, and the findings resulting from the project.

The Setting

The Film Board is a public organization in Denmark under The Ministry of Cultural Affairs. At the time of the project (1992) the Film Board had approximately 50 employees and a budget of US\$7.5 million a year.

The Film Board's main function, as specified by law, is to promote information, education, and artistic and cultural activities by producing and buying films and videos along with distributing such films and videos to their customers: Educational institutions, libraries, associations, and individuals. They produce about 100 new films and videos per year and distribute about 300.000 copies to customers per year. The filmcategories of the Film Board include cultural and social conditions, such as documentaries, portraits, and debate films; education; and art, such as experimental video art.

The production of films and videos involves funding and supporting directors and producers, and to some extent managing the production. This is conducted by an Editorial Board, which receives applications for productions of films and videos, decides which of these to support, negotiates the contracts, and supports and manages the succeeding production. Applications are received from producers and directors from the film milieu.

When a film or video has been produced, the Film Board has the right to make and distribute copies from their internal stock. The distribution is handled by a department for order receiving and marketing. The department receives orders from the customers requesting copies of films and videos. The customers are public and private institutions (typically schools and libraries) as well as private individuals. Films and videos are booked by the customers for a specific period of time, e.g. a certain date or week. The main way of ordering films and videos has been by phone, though customers could also order by mail. When customers call to make an order, they often do not know exactly which film or video they want. The Film Board would then during the phone conversation consult the customer regarding which films and videos the Film Board could offer to serve the customer's specific need. All orders were entered into a central booking-system.

The marketing function of the department comprised organizing premieres of new films and videos, producing and marketing a yearly catalogue (in form of a book) of available films and videos, and informing customers of new productions. The latter included regular visits to their main customers. The department referred to these visits as 'fieldwork': Taking care of existing customers and cultivating new markets for their films and videos.

Due to its relatively small size, the Film Board had no internal IT-department, though some of the employees were trained to take care of routine maintenance of their systems. Design and development of systems were outsourced to external consultants and vendors.

Starting Point

A few years before the project, the former president had retired, and a new one was employed with the task of organizational and managerial restructuring and modernization of the entire organization. The Film Board had thus at the project's starting point recently conducted a major organizational restructuring and had decided to achieve a change in its image:

- From 'the old dusty house with films for schools' or 'a public library for films and videos,' which was the way they believed most of their customers conceived them,
- To 'the house for film and video art', i.e. an organization viewed by their customers and by the film producing milieu as a dynamic and cultural center for film and video art.

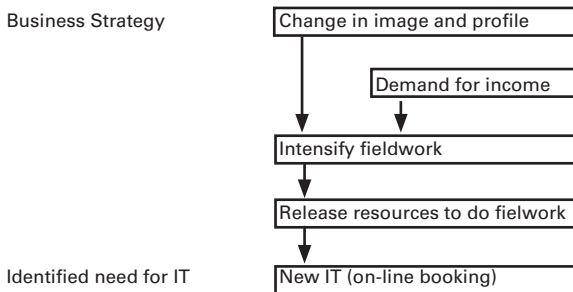
The Film Board's main purpose should be to "ensure that short films and documentaries remain as an art form, where original, experimental, and individually unique artists could have free reign with their creativity" (quote from the Film Board's business strategy).

At this point in time, the Danish government had decided that a number of public organizations (including the Film Board) should increase their own income apart from receiving governmental funding. The purpose of this demand was to force the Film Board to initiate a change from a non-commercial public organization to a more businessoriented organization, having greater attention towards its earnings, expenditures, and productivity.

Changing their profile and image became an important part of the Film Board's business strategy, and management made a SISF that would support this business strategy: The department for order receiving and marketing were to increase their efforts in their fieldwork and launch the new image. Increasing their fieldwork would support the marketing function in general, resulting in distributing more films and thus increasing their income (customers pay a fee for each film or video they borrow). The department thus needed to release resources from current work to sup-

port their fieldwork.

Figure 3. Relation between business strategy and identified need for IT (SISP).



In order to release resources, the organization had decided to invest in new IT-support in the department. The libraries had during the last few years become one of their largest customers. Their orders (along with most orders from the second largest customer, the educational sector) were very straightforward, and they experienced that about 50% of all orders by phone were now a kind of 'automatic' order, where the customer knew exactly what film or video he/she wanted, and hence did not need any consulting. If the department invested in a new booking system, which would provide their customers with the ability to order their films and videos on-line, the management in the Film Board would expect a significant drop in the booking-task. This could release the needed resources for the fieldwork. Hence, the need for the on-line service was related to the business strategy, as depicted in figure 3: This SISP and identified need for the new IT was the starting point for the design project.

Method

The design project was part of an action research project, where we were involved in conducting the project by having roles as designers. Being an action research project, it had two agendas: On the one hand, the organization had a need for specific IT to support its new business strategy. On the other hand, we wanted to experiment with the strategy analysis in our PD method.

As a starting point, management in the Film Board did not see the relevance of bringing an alignment concern into the agenda of the design project, since they believed they had a clear vision of the needed IT (as indicated in figure 3). But since we insisted that the design project also had a research agenda, management agreed to extend the project scope as well as include a strategy analysis for means of clarifying the relation between the overall business strategy and the need for IT-support. After completing the project establishment and agreeing on a project charter, the strategy analysis was initiated.

The design project was conducted by one designer, working 260 hours for a period of three months. The project was however the latter of three action research projects within the organization (Simonsen, 1994), so the designer was from the start familiar with the Film Board. The design process was organized with regular meetings with a design team, with managers and employees from the department for order receiving and marketing, and with a steering committee, including

the president and representatives from other departments in the Film Board. The project comprised an analysis of the environment of the department for order receiving and marketing, including other departments within the Film Board and the organization's customers.

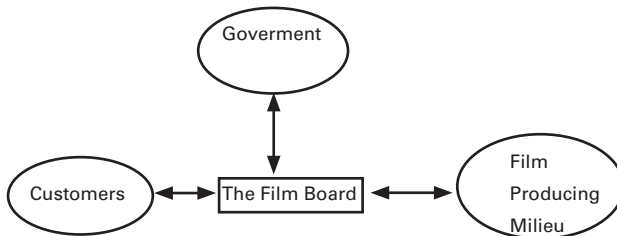
The main data gathering method used was qualitative interviews. All sixteen employees in the department for order receiving and marketing were interviewed as well as the president and 3 managers from other related departments. Each interview was performed 'in situ', lasted for about 1/2-2 hours, and most of them were audio-recorded. In addition to the interviews, bookings by phone and some meetings in the department were observed. A thorough document analysis was performed, as the department produced a large amount of written material (catalogue, status-reports from efforts doing fieldwork, statistics, booklets, leaflets, etc.). Five main customers representing the libraries and the educational sector were selected and interviewed. Each of the five customers were visited and interviewed for 1-2 hours. The focus of the interview was on the trends and prospects for their use of films and videos and on their response to the assumptions that the Film Board, and the department for order receiving and marketing in particular, had about their customers.

Result

The strategy analysis in the design project in the Film Board clarified the relations with the customers and with the film producing milieu (as stated by law) and also the relation with the government and the Ministry of Cultural Affairs, under which the Film Board, a public organization, is a subordinate (see figure 4). The analysis clarified two problematic relations:

- *The relation between the customers and the Film Board.* The Film Board knew which services and products they would provide for their customers, both in terms of which kind of technology they would offer (on-line booking) and which kinds of films they would produce as their products for the customers. But they knew little about the customers' needs for technological service, and they somewhat neglected the customers needs for film products.
- *The relation between the Film Board and the government.* The Film Board was aware of the government's new policy about the demand for income, but the organization did not meet this demand.

Figure 4. The Film Board's three main relations to it's environment.



In more detail the following environmental issues were clarified (referring clockwise to figure 4):

- *Customers do not need an on-line booking service.* Even though the Film Board needed its customers to use on-line booking, their customers did not have an equivalent need. The Film Board's rationale for the on-line booking system was to automate a time consuming process.

The proposed solution however, required that (major) customers should invest in an on-line connection to the Film Board (in 1992 the WWW-technology was not yet available). All the Film Boards' routine booking requests (estimated to be 50% of all calls) came from a corresponding high number of different customers. One library visited was one of their largest single customers. They had only 1 or 2 booking requests per day. In this situation, they viewed the telephone as the relevant technology for ordering films and videos. They would resist paying for equipment for an on-line connection and for the training of their staff to use the booking system that the Film Board had in mind. Even though the Film Board felt they knew their customers, they did not know them from such a technological design perspective.

- *Customers need access to the Film Board's catalogue through their own local databases.* Their two main groups of customers (to whom more than 50% of all films and videos were distributed) were educational institutions (mainly municipal schools) and libraries. All libraries had, or were about to convert, their paper files into electronic databases. Schools had the same trend, as education evolves to being more and more project-oriented, where many subjects are studied in an interdisciplinary form. This creates a need for queries across traditional dictionaries (divided by subject). The trend within the educational sector is to bar-code and record all educational materials into databases, creating the possibility to search by key-words and query for all different materials available at the same time: Books, classsets, videos, tapes, maps, laboratory-equipment, etc. The Film Board had to provide all these local databases with the possibility of getting access to an electronic version of their catalogue. If not, their main customers would search for needed materials using their local systems, while the products offered by the Film Board would still only be available by looking them up in their paper-based catalogue.
- *No focus on customer needs.* Their efforts in the fieldwork were concentrated on launching the Film Board's new profile and image. No systematic work was done in monitoring and analyzing the different customers' needs for films and videos, even though the department for order receiving and marketing knew, from its many visits with customers, that e.g. schools and libraries were not particularly interested in highly cultural and artistic film and video productions. On the contrary, they requested titles within education, films for children, and entertainment. Also, the Editorial Board was not informed systematically about the customers' needs. The customers' needs were to some extent even neglected, partly due to the new profile and image, which supported the relations with the film producing milieu and disregarded the relations with the customers.
- *Not meeting the demands for earnings.* The recent demand for income from the government meant that the Film Board should earn about one fifth of its overall budget (about \$1.5 million out of \$7.5 million). This demand for income was automatically raised by \$30,000 each year. The Film Board did not succeed in earning the demanded sum and had to cover the remaining amount from its operating budget. The only source of income was from the distribution of films and videos.
- *Larger decrease in earnings foreseeable.* In the past few years, the Film Board had slowly experienced an overall decrease in the number of films and videos distributed. During this period a large number of libraries had become new customers so that nearly all libraries in Denmark

were customers of the Film Board. Each new individual library's number of borrowed films and videos stabilized rapidly. Since there were soon no libraries left to add as new customers, the Film Board could foresee an even larger decrease in the total number of distributed films and videos in the future.

- *Lack of management information.* The Film Board's work practice and mentality were not geared to manage their expenditure compared to their income: No one knew if a specific way of distributing films and videos was profitable. Management had no information about the income made by the department for order receiving and marketing – and no one was considering to change this situation.
- *Business strategy primarily supports the film producing milieu.* The film producing milieu acknowledged the new profile and image. This gave the producers better possibilities for producing cultural and artistic films (funded by the Film Board). These productions were considered more prestigious and challenging than their commercial productions, such as their production of advertisements for private companies.

Bringing strategic alignment into the design process caused the project to focus on new (or neglected) issues at the organizational and management-related level, which again, on a technological level, pointed to new domains for systems support not previously considered before the design project's start.

At the organizational and management-related level, the design project led to the conclusion that the new strategic image ('the house for film and video art') and the demand for income contradicted each other. The business strategy of changing to a new image, decided upon by the organization itself, of course had great attention. This business strategy, focusing on a production of artistic films and videos, tended to neglect the needs and requirements from the customers, and hence on the source of income. The demand for income was forced on the organization from the 'outside'. Its purpose was to force quite radical changes onto public organizations, having no tradition of balancing earnings with expenditures. This organization was not accustomed to this new requirement that was difficult to tackle and hence the organization was reluctant in paying serious attention to it. The overall organization, management, and current work practices were not geared towards an awareness of "where do we spend our resources and where do we earn them" as the demand for income entailed.

This result made clear through the design project challenged the Film Board's current business strategy by highlighting a serious choice: The Film Board could neglect the contradiction, insist on the current business strategy, and hope for changes in the overall policy from the government. Or it could try to fulfill the demand for income, which would impose a change in its business strategy. These two possibilities opened a discussion reflecting two camps in the organization: One camp, taking care of the relations with the film producing milieu, was insisting on the current business strategy. Another camp, taking care of the relations with customers, was in favor of the former policy, arguing for a stronger focus on customer needs.

The analysis clarified, on a technological level, new needs for IT-support. The Film Board's customers did not have a need for an on-line booking service to the Film Board. What they needed was to supplement their existing local databases with the Film Board's catalogue of films and videos. The planned new booking system would thus not provide for the expected effect by reducing

resources doing the booking task, and the design project consequently recommended that the Film Board should reject the plans for this system. The design project concluded that besides distributing the catalogue in an electronic form, the Film Board needed IT-support, which could provide management with information in order to monitor income, spending, the consumer market, etc.:

- How much money have we currently earned? And how far is our income from a goal of 20% of the overall budget?
- From where do we get our income? Which kinds of films and videos and how should they be distributed? From which kind of customers?
- Where do we lose shares of the market? Where do we gain shares of the market? Where should we make a specific market campaign? What was the result of our market campaign?

If the design project had not included the alignment issue as part of the agenda, it could have resulted in a design-solution recommending an investment in an irrelevant system. Instead it identified two new systems that had not been thought of beforehand. The strategy analysis moved the perspective from design of a specific system (on-line booking service) into an analysis at the organizational and management-related level, which challenged the organization's business strategy.

DISCUSSION

We summarize in this discussion the lessons learned from the design project and then describe the relevance of the suggested design approach. We reinterpret the design project by seeing it in light of the dominating IS literature, in light of Ciborra's critique and alternative approach, and by presenting an epilogue to the design project. We conclude finally by outlining some implications for practitioners as well as for researchers.

The immediate effect of bringing strategic alignment into the agenda of the design project was a rejection of the proposed on-line system: The service that the planned system should provide did not correspond to an equivalent need from the customer's side. Taking the customers' needs into account, the Film Board had to distribute their catalogue electronically.

The overall effect of the strategy analysis was a shift in focus: From a need for a specific system to the overall needs this system should support. This shift in focus resulted in revealing a contradiction in the overall business strategy when the demand for income was taken into account. Furthermore, in order to support the demand for income, the analysis pointed out new needs for systems specified at monitoring the market of customers as well as the Film Board's related income and spending.

Galliers (1993, p. 201) acknowledge that "information arising from [design projects] might lead to new thinking with regards to the business strategy." We suggest that the following lesson can be learned: *In conducting a design project, you might realize contradictions, or a lack of policies, regarding the relation between the needs for IT support and an overall strategic business level. Taking care of this relation might be crucial for ensuring that the design of systems appropriately supports the organization.*

This lesson points out that part of the specific design project should include giving explicit attention to the project's relation to the organization's overall business strategy. This is often a neglected task within design. *We suggest that it should be the responsibility of the designers, conducting the design project, to ensure that this alignment concern is properly taken care of.*

The Relevance of Strategic Alignment for a Design Approach

The relevance of a design approach to strategic alignment is dependent on how clear the organization's overall business strategy is presented, how clear the initial goal of the design project can be defined, and how clear the involved parts understand the relation between the business strategy and the design project. It is also a question of whether management wants a specific design project to take care of this concern or not. Organizations that do not have an updated and clear IT-strategy and where an intensive SISP process has not taken place (e.g. in small organizations with fewer IT-resources, like in the Film Board), management ought to consider extending the project scope by including an alignment issue as part of the mandate of their design projects. Including activities such as the suggested strategy analysis help to ensure that the relevant IT-solutions are prioritized⁵.

We have experienced, that a helpful guide used in determining to which extent it is relevant to include alignment in contextual design, is to analyze the scope of the design project in terms of 'sub-optimization'. The aim of systems design in an organizational context is to support users who support (parts of) specific business processes, which in turn support (parts of) overall goals of the organization. The scope of a design project might be rather narrow, such as a problem as it is perceived by one department. The scope might on the other hand be broad, such as analyzing which business strategies should be supported by technology, or which overall business processes should be analyzed and redesigned with support from appropriate IT. On the basis of the initial scope of a design project, the design team should critically question what the project aims at optimizing, for example whether supporting a part of a specific business process (included in the project scope) also optimizes its purpose in relation to the overall business process. If there are no obvious answers to this, the design project might only result in a sub-optimization, with few or no effects at all on the overall process. In this situation, the scope of the design project may be too narrow.

Questioning the scope of a design project is far from a trivial task, and it is not always possible for the project members to carry out: In larger organizations, the task of clarifying the relation between specific IT-support and business strategy may be interposed between different organizational units or projects. It is not always possible to include such a clarification in a design project's aim and mandate if the responsibility for this, for example, is delegated to another organizational unit. In this case, the designers should take precautions in establishing the necessary cooperation and coordination with this unit. Who has the final responsibility and how a possible coordination is managed should be clarified during project establishment and clearly stated in the project charter or elsewhere.

In small organizations, like the Film Board, the starting point for a design project may often be that the responsibility for securing a proper alignment is not delegated to any specific person or organizational unit. In such cases, the designers should take the responsibility of defining this task as part of the design project.

The Design Project seen in light of the dominating IS Literature

At the risk of being polemic, we could ask how the design project would be interpreted and judged by advocates of the dominating IS literature as described in section "Strategic Alignment".

First, we would have to realize that the strategic information systems plan by the organization (as indicated in figure 3) had failed. But then we could quickly add that this plan was not rational or qualified enough: The management in the Film Board did not reach this plan as a result of a thorough SISP-process, as prescribed in the IS literature – but rather as a result of ‘tinkering’. So the results that the design project led to could just as well have been achieved by a thorough and rational SISP-process.

Second, if we look closer into the details of the design project, we could claim that this project actually did not address the issue of aligning business strategy with IT after all. Rather it discovered a poor alignment (poor fit) between business strategy and environment – or one could add, a strategy drifting away from the current environmental conditions. This was discovered by exploring how a suggested system would support the initial business strategy. So what is discovered is not about strategic alignment, but about business strategy and environmental fit, and the design project was just the mechanism that led to this finding.

Finally, we need more general findings. In this respect, the design project should trigger further research that could lead to the development of new alignment models. For example, it could be interesting to develop a model about the circumstances under which design projects, and the suggested strategy analysis, might turn out to be the means (or mechanism) whereby organizations identify that they have a poor fit between business strategy and environment. Such a general model could provide management with the ability themselves to foresee and avoid such situations with poor alignment, thus avoiding design projects and designers that reveal and take care of alignment issues.

The Design Project seen in light of Ciborra’s Alternative Approach

Accepting Ciborra’s point of view, we would realize that the poor strategic plan and the ‘blurred reality’, which turned out to be the starting point of the design project, is an example of an observable reality and thus represents the conditions under which designers have to act.

One way to interpret the design project in light of Ciborra’s alternative approach (as described in section 2.3), is to relate the project to the concepts care, hospitality, and cultivation.

A main point related to the concept care is that the issue of strategic alignment should be taken care of by all the various actors concerned with IT in the organization. This includes the designers in charge of the specific design projects, initiated by the organization:

- Embedding this care-taking as the main objective of the strategy analysis activity in our PD method thus corresponds to ‘care performed as intentional perception’.
- Using the PD method and actually bringing this concern into the design process as part of the project’s agenda leads to ‘care as circumspection’.
- And designers very skilled in conducting this job transforms the care-taking into ‘care expressed as understanding’.

The concept of care thus explains our design approach to strategic alignment and our suggested lesson to be learned.

A design approach to strategic alignment explicitly shifts the focus from how to design IT to where is it relevant to apply IT. Alignment “presupposes acceptance and hosting” (Ciborra, 1997b, p. 74), but it might also entail political discussions characterized by power, norms, and traditions

within the organization. Conflicts and power struggles, regarding which business strategies to follow and how, and consequently which domains need to be strengthened by IT-support, may become manifest in a project (see for example Simonsen and Kensing, 1997). The *hospitality* concept addresses this organizational oriented domain, in which acceptance suddenly can turn into hostility. The design project presented in this article gives an example in this respect: Defining and deciding the new image of the Film Board was a result of a recent power struggle. The new image clearly supported one camp in the organization, that supported and looked after the film producing milieu, on the expense of the other camp, that defended the former image and supported and looked after the customers. The design project clarified and brought into focus the new demand for income. This demand not only made manifest the power struggle again by challenging the new image, but it also identified new systems. These systems, when implemented, could work as a tool that supported the camp working for the customers and also their position against the camp working for the film producing milieu.

The concept of *cultivation* invites us to view the organization as an “organism” with a life of its own and with the power to withstand our efforts to change by designing IT solutions (Ciborra, 1997b, p. 76). Cultivation thus especially addresses the implementation of an alignment effort and hence leads us to the epilogue of the design project.

Epilogue

As a major result of the design project, the Film Board rejected the planned on-line system. But after a long discussion in the management group, they also rejected the rational (and SISP-type) proposal of trying to fulfill the demand for income by implementing IT-support to monitor income, spending, the consumer market, etc. Instead they ended up waiting for the environment to change – and they succeeded with this strategy. A few years after the design project, there was a shift of power in Denmark’s government, having a substantial effect on the Film Board: After more than 10 years of a conservative led government, Denmark now had a government led by Social Democrats; the new Minister of Cultural Affairs was very successful in managing to acquire more funding for the film industry; the city of Copenhagen became Cultural Capital of Europe; The Danish film industry celebrated its 100th year anniversary; and the Film Board merged with 3 other small public film organizations and moved into new attractive facilities in central Copenhagen. Today the Film Board, and the Danish film industry in general, is granted with more public funding than ever before and the political ideology behind the ‘demand for income’ is history. The organization (luckily) ignored a design recommendation grounded in an assumption of a stable environment, and waited instead for the situation to drift – while the suggested strategic alignment remained on its piece of paper, real life drifting naturally took place.

Summarizing the three concepts, we see that ‘care’ describes the design approach taken in this article, while ‘hospitality’ highlights relevant organizational issues related to power balances, and ‘cultivation’ addresses the organization’s final strategy of awaiting changes in the environment.

CONCLUSION

The article has presented a study that gives an example of the impact as a result of bringing strategic alignment into the design agenda. The study also demonstrates how business strategies and

environmental conditions drift (change) over a relatively short time horizon. The study challenges the traditional IS literature's top-down and management led approach to strategic alignment. It illustrates a need for taking care of the issue of strategic alignment throughout a design project as a supplement to – or substitute for – the traditional SISP approach. The article has presented one attempt to construct such a design approach to strategic alignment through the main activity, "strategy analysis", aiming at 'care-taking', as suggested by Ciborra. We have argued that all specific design projects potentially might need to give explicit attention to the business strategy they are supposed to support. And we have suggested that it should be the responsibility of the designers conducting the design projects to ensure that this task is properly taken care of.

We will finally conclude by highlighting some suggested implications for practitioners and researchers:

- An identification of the need for a design project might ideally be the result of a thorough SISP process. In many situations though this is not the case, for instance in small organizations with fewer IT-resources. In such cases, management ought to consider extending the project scope by including an alignment issue as part of the mandate of the design project. Management should delegate the necessary responsibility to the designers, in order for them to include strategic alignment in the agenda as part of the overall design process.
- Designers should check for proper alignment as part of any design project. Designers need to take up this challenge, include it as part of their repertoire of competence, and prepare to embed the issue of strategic alignment as part of the design project's scope – for example by introducing a main activity like the suggested strategy analysis. The relevance and level of ambition for a strategy analysis might be decided upon by analyzing the scope of the design project in terms of a possible 'sub-optimization'.
- Promoting this new role requires the development and construction of design approaches and guidelines to strategic alignment and the inclusion of this issue in the educational curriculum. Using Ciborra's notion of 'care', 'hospitality', and 'cultivation' seems to be a promising part of this venue.

Notes

1 The study reported on in this article was presented at the ECIS'96-conference (Simonsen, 1996) and the ECIS'97-conference (Simonsen, 1997), where it was the recipient of the "Officers' Award for Excellence". The study is described in detail in (Simonsen, 1994).

2 In addition to this alignment approach, SISP has been defined as a search for applications "with the ability to create an advantage over competitors" (Lederer and Sethi, 1988, p. 446) and applications that attempts "to impact organisational strategies" (Lederer and Sethi, 1992, p. 70). This definition has been referred to as the impact approach (Lederer and Sethi, 1988; Parker, Trainor and Benson, 1989). The approach investigates new IT in a search for innovative possibilities that might change current or create new business strategies. The impact approach has also been referred to as the 'competitive perspective' of IT (Henderson and Venkatraman, 1992; Venkatraman, Henderson and Oldach, 1993). The impact approach has been widely adopted especially within business process reengineering (Hammer, 1990; Hammer and Champy, 1993). Today, it seems as though the SISP literature still might acknowledge the impact ap-

proach, but it primarily focuses on the alignment approach: SISP "might also entail the discovery of new applications with the potential to create an advantage over competitors", although "alignment is the preferred, final dependent variable" (Lederer and Salmela, 1996, p. 238 & p. 248).

3 Other perspectives to alignment have been suggested (see note 2 above as well as Henderson and Venkatraman, 1992; Venkatraman, Henderson and Oldach, 1993) but the alignment approach is claimed to be the most common and widely understood alignment perspective (Venkatraman, Henderson and Oldach, 1993), and studies of SISP practice show, that the alignment approach is by far the most dominating (Earl, 1993). It is also this perspective that is taken by Ciborra (1997b).

4 Information about this research program is provided by URL: <http://www.must.ruc.dk>.

5 The result of the strategy analysis – identifying and delimiting the work domains that need

References

- Brancheau, J.C. and J.C. Wetherbe (1987). Key Issues in Information Systems Management, *MIS Quarterly*, Vol. 11, No. 1, pp. 23-46.
- Brown, C.V. and S.L. Magill (1994). Alignment of the IS Functions With the Enterprise: Toward a Model of Antecedents, *MIS Quarterly*, Vol. 18, No. 4, pp. 371-403.
- Cash, J.I., F.W. McFarlan and J.L. McKenney (1992). *Corporate Information Systems Management, Business One Irwin*, Homewood, Illinois, Ill.
- Ciborra, C.U (1991). From Thinking to Tinkering: The Grassroots of Strategic Information Systems, *Proceedings of the Twelfth International Conference on Information Systems*, New York, pp. 283-291.
- Ciborra, C.U (1997a). Crisis and Foundation: An Inquiry into the Nature and Limits of Models and Methods in the IS Discipline, in R. Galliers et al. (Eds.), *Proceedings of the 5th European Conference on Information Systems*, Cork/Ireland, June 19-21 1997, Vol. 3, Cork Publishing Limited, pp. 1549-1560.
- Ciborra, C.U (1997b). De Profundis? Deconstructing the Concept of Strategic Alignment, *Scandinavian Journal of Information Systems*, Vol. 9, No. 1, pp. 67-82.
- Dahlbom, B. and L. Mathiassen (1993). *Computers in Context: The Philosophy and Practice of Systems Design*, Blackwell, Oxford, UK, 1993.
- Earl, M.J (1993). Experiences in Strategic Information Systems Planning, *MIS Quarterly*, Vol. 17, No. 1, pp. 1-24.
- Galliers, R.D (1993). Towards a Flexible Information Architecture: Integrating Business Strategies, Information Systems Strategies and Business Process Redesign, *Journal of Information Systems*, Vol. 3, No. 3, pp. 199-213.
- Gottschalk, P. and A.L. Lederer (1997). A Review of Literature on the Implementation of Strategic Information Systems Plans, in R. Galliers et al. (Eds.), *Proceedings of the 5th European Conference on Information Systems, Cork/Ireland, June 19-21 1997*, Vol. 2, Cork Publishing Limited, pp. 981-995.
- Greenbaum, J. and M. Kyng (Eds.) (1991). *Design at Work: Cooperative Design of Computer Systems*, Lawrence Erlbaum Associates, Chichester, UK.

- Hammer, M (1990). Reengineering Work: Don't Automate, Obliterate, *Harvard Business Review*, pp. 104-112.
- Hammer, M. and J. Champy (1993). *Reengineering the Corporation. A Manifesto for Business Revolution*, HaperBusiness/HaperCollins Publishers, New York, N.Y.
- Henderson, J.C. and J.G. Sifonis (1988). The Value of Strategic IS Planning: Understanding Consistency, Validity, and IS Markets, *MIS Quarterly*, Vol. 12, No. 2, pp. 187-200.
- Henderson, J.C. and N. Venkatraman (1992). Strategic Alignment: A Model for Organizational Transformation Through Information Technology, in T.A. Kochan and M. Useem (Eds.), *Transforming Organizations*, Oxford University Press, New York, N.Y., pp. 97-117.
- Keen, P.G.W (1991). Shaping the Future: Business Design through Information Technology, *Harvard Business School Press*, Boston, Massachusetts.
- Kensing, F., J. Simonsen and K. Bødker (1998). MUST: A Method for Participatory Design, *Human-Computer Interaction*, Vol. 13, No. 2, pp. 167-198.
- King, W.R. (1988). How Effective is Your Information Systems Planning, *Long Range Planning*, Vol. 21, No. 5, pp. 103-112.
- Kovacevic, A. and N. Majluf (1993). Six Stages of IT Strategic Management, *Sloan Management Review*, Vol. 34, pp. 77-97.
- Lederer, A.L. and H. Salmela (1996). Toward a Theory of Strategic Information Systems Planning, *Journal of Strategic Information Systems*, Vol. 5, No. 3, pp. 237-253.
- Lederer, A.L. and V. Sethi (1988). The Implementation of Strategic Information Systems Planning Methodologies, *MIS Quarterly*, Vol. 12, No. 3, pp. 445-461.
- Lederer, A.L. and V. Sethi (1991). Critical Dimensions of Strategic Information Systems Planning, *Decision Sciences*, Vol. 22, pp. 104-119.
- Lederer, A.L. and V. Sethi (1992). Meeting the Challenges of Information Systems Planning, *Long Range Planning*, Vol. 25, No. 2, pp. 69-80.
- Lederer, A.L. and V. Sethi (1996). Key Prescriptions for Strategic Information Systems Planning, *Journal of Management Information Systems*, Vol. 13, pp. 35-62.
- Lee, D.M.S., E.M. Trauth and D. Farwell (1995). Critical Skills and Knowledge Requirements of IS Professionals: A Joint Academic/Industry Investigation, *MIS Quarterly*, Vol. 19, No. 3, pp. 313-340.
- Muller, M.J. and S. Kuhn (1993) (Eds.). Special Issue on Participatory Design, *Communications of the ACM*, Vol. 36, No. 4.
- Niederman, F., J.C. (1991). Brancheau and J.C. Wetherbe. Information Systems Management Issues for the 1990s, *MIS Quarterly*, Vol. 15, pp. 475-495.
- O'Connor, A.D. (1993). Successful strategic information systems planning, *Journal of Information Systems*, Vol. 3, No. 2, pp. 71-83.
- Parker, M.M., H.E. Trainor and R.J. Benson (1989). *Information Strategy and Economics*, Prentice Hall, New Jersey.
- Premkumar, G. and W.R. King (1994a). The Evaluation of Strategic Information System Planning, *Information and Management*, Vol. 26, No. 6, 1994a, pp. 327-340.
- Premkumar, G. and W.R. King (1994b). Organizational Characteristics and Information System Planning: An Empirical Study, *Information System Research*, Vol. 5, No. 2, pp. 75-109.

- Raghunathan, B. and T.S. Raghunathan (1994). Adaptation of a Planning System Success Model to Information Systems Planning, *Information Systems Research*, Vol. 5, pp. 326-340.
- Reich, B.H. and I. Benbasat (1996). Measuring the Linkage Between Business and Information Technology Objectives, *MIS Quarterly*, Vol. 20, pp. 55-81.
- Schuler, D. and A. Namioka (1993) (Eds.). *Participatory Design: Principles and Practices*, Lawrence Erlbaum Associates, London, UK.
- Simonsen, J (1994). *Designing Systems in an Organizational Context: An Explorative Study of Theoretical, Methodological, and Organizational Issues from Action Research in Three Design Projects*, Ph.D.-thesis, Writings on Computer Science No. 52, Computer Science Department, Roskilde University, Roskilde, Denmark.
- Simonsen, J (1996). Involving Customer Relations in Contextual Design - a Case Study, in J.D. Coelho et al. (Eds.), *Proceedings of the 4th European Conference on Information Systems, Lisbon/Portugal*, July 2-4 1996, pp. 1153-1161.
- Simonsen, J (1997). Linking Design to Business Strategy Through Functional Analysis, in R. Galliers et al. (Eds.), *Proceedings of the 5th European Conference on Information Systems, Cork/Ireland*, June 19-21 1997, Vol. 3, Cork Publishing Limited, pp. 1314-1327.
- Simonsen, J. and F. Kensing (1997). Using Ethnography in Contextual Design, *Communications of the ACM*, Vol. 40, No. 7, pp. 82-88.
- Tavakolian, H (1989). Linking the Information Technology Structure With Organizational Competitive Strategy: A Survey, *MIS Quarterly*, Vol. 13, 1989, pp. 309-317.
- Venkatraman, N (1989). The Concept of Fit in Strategy Research: Toward Verbal and Statistical Correspondence, *Academy of Management Review*, Vol. 14, pp. 423-444.
- Venkatraman, N., J.C. Henderson and S. Oldach (1993). Continuous Strategic Alignment: Exploiting Information Technology Capabilities for Competitive Success, *European Management Journal*, Vol. 11, , pp. 139-149.
- Yetton, P.W., J.F. Craig and K.D. Johnston (1995). Fit, Simplicity and Risk: Multiple Paths to Strategic IT Change, in J.I. DeGross et al. (Eds.), *Proceedings of the Sixteenth International Conference on Information Systems (ICIS'95)*, December 10-13, 1995, Amsterdam, The Netherlands, pp. 1-11.