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**A Critical Study of Information Systems
Strategy Formulation**

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Abstract

Over a number of years quite a large body of literature on planning for information systems has been built up. Case-studies have been carried out, success factors have been investigated, and methods for information strategy planning have been examined. However, one does not find a sound conceptual foundation of the planning for information systems in literature. Based on the strategy models of Chaffee, this article discusses the strengths and limitations of the current literature on planning for information systems. Different strategy models are identified, and based on the models various gaps in current literature are discussed. These gaps provide for an agenda for further research.

1. Introduction

If we review the IS literature of the last two decades, several fields of attention have emerged. One is the field of planning of information systems, also called information planning, strategic information planning, or information strategy planning. Numerous articles have been published in this field, for example (Earl, 1989a; Lederer and Mendelow, 1986; Lederer and Mendelow, 1989; Lederer and Sethi, 1988; Waema and Walsham, 1990; Walsham and Han, 1992). These articles address widely diverse aspects of planning of information systems. In some publications, such as (King, 1978), (Martin, 1982) and (Theeuwes, 1987), methods for planning are discussed, whereas in others case-studies of successfully

planned projects are presented, for example, (Copeland and McKenney, 1988) and (Kim and Michelman, 1990). Still other authors, like Lederer and several co-authors (Lederer and Mendelow, 1986; Lederer and Mendelow, 1989; Lederer and Sethi, 1988), carried out extensive surveys of planning projects in order to identify key factors for success or failure of planning.

It stands without doubt that these studies have enriched the IS literature. Based on these studies we have a much clearer view of the role of planning for information systems in organizations, and of the factors that determine success or failure of it. For example, case-studies like (Copeland and McKenney, 1988) and (Kim and Michelman, 1990) show us that specific organizational and environmental settings are key determinants for the success of planned information systems. In addition, research by Lederer and Sethi (1988) on 80 organizations showed that problems still exist with respect to implementation of strategic information systems planning methodologies. The overall satisfaction with new methodologies was not particularly high. Top management commitment and the need for further analysis were the two main problematic areas. Some authors, like Beath (1991) even show that in some situations a formal information plan is counterproductive, and that 'champions' of new technologies are much more important than formal plans.

The examples above show that there is an extensive body of empirical material on which we can build for an information systems planning theory. However,

although we understand the process of information systems planning (ISP) much better than before, the application of various approaches of ISP in practice still proves to be troublesome. If nothing is so practical as a good theory, then we should seriously reconsider the current theories in use.

The objective of this article is to clarify the conceptual foundations of current theories on planning of information systems. The article is organized as follows. In section 2, an overview will be presented of the current literature in this field of study. The limitations of the current literature are discussed. Once these limitations are identified, the next step is of course to assess areas of improvement. Two things are needed to assess these. First, a set of strategy models is needed that describes the various processes of information systems planning. We will use the strategy models developed by Chaffee. These models are discussed in section 3. Next, based on the strategy models the gaps in current research can be identified. Section 4 identifies these gaps. These gaps show areas of improvement in the current research on information systems planning. The findings are summarized in a research agenda that is described in the final section, section 5.

2. An overview and critical examination of the current literature on information systems strategy planning

The received theory about information systems planning is quite diverse.

Especially in the 1980's numerous studies were carried out investigating various aspects of information systems planning. Table 1 presents an overview of the current literature on information systems planning. Based on this table several streams in the field on information systems planning can be identified. First of all, a distinction can be discerned between three types of publications:

- publications that are mainly theoretical or conceptual, including discussion of methods for information systems strategic planning, and discussion of various approaches to the process of planning.
- publications that discuss empirical research on various aspects of information systems strategy planning.
- publications that combined theoretical discussions and empirical research.

Looking at the various publications presented in table 1, we can further divide the three streams in current literature into several areas of attention. The following areas can be identified:

- *mainly empirical*: case studies of successful information systems and the process of implementation and use of these information systems.
- *mainly empirical*: research on critical factors for success or failure of information systems planning.
- *mainly theoretical/conceptual*: description of methods of information systems planning.
- *mainly theoretical/conceptual*: alignment of business strategy and IT strategy.
- *theoretical/conceptual as well as empirical*: stage models and strategic value

frameworks.

- *theoretical/conceptual as well as empirical*: IT champions and learning perspective.
- *theoretical/conceptual as well as empirical*: interpretive and metaphorical views on information systems planning.

The streams in information systems planning show us that the literature on information systems planning is quite elaborate, incorporating many aspects that may be useful to arrive at a sound theoretical foundation of this field of study. Information systems strategy planning is looked at from quite a number of different perspectives.

Nevertheless, so far these streams have remained quite separate. Various publications combine theoretical research with empirical research. But most of these publications, like (Beath, 1991; Nolan, 1973; Nolan, 1979; Waema and Walsham, 1990) are actually discussing the process of information systems strategy planning from a narrow perspective: either the role of the various actors in this process (such as Beath), stages every organization should pass (such as Nolan) or the social and political issues (such as Walsham). No publication satisfactorily builds a theory on different processes of information systems strategy planning, and investigates these processes in practice from different viewpoints. Research by Earl (Earl, 1990) shows one of the first attempts to realize this. More comprehensive research combining theoretical and empirical works would contribute to a sound theory of information systems planning. An

analysis of the limitations of each of the streams may illustrate this point.

case studies of successful information systems

Various publications discuss case studies of very successful information systems. The airline reservation system SABRE, discussed by Copeland (Copeland and McKenney, 1988), is such an example. The article discusses the evolution of airline reservation systems, "from their inception as manually maintained inventories of seat availability, through their description as 'anticompetitive weapons' to obtain and exercise monopoly power" (Copeland and McKenney, 1988 p. 353). This evolutionary perspective shows the interdependence between industry, technology, and organizations. Although the case-study is specific for the airline branch, the authors argue that there are three features with broad implications for the strategic use of information technology. "First, large installed processing capacity can be a source of economics of scale and scope. Second, established technical competence is a necessary requirement for gaining competitive advantage. Finally, sustainable advantage need not be the result of extraordinary vision, but the result of consistent exploitation of opportunities revealed during the evolution of adaptable systems" (Copeland and McKenney, 1988 p. 353).

The example of the case study of airline reservation systems shows the advantages and disadvantages of such an approach. The advantage of such case studies is the thorough analysis of the process of planning, developing and

Authors	Focus
(Bakos and Treacy, 1986)	economic view, critical success factors
(King, 1978)	discussion of a method of information systems planning
(Lederer and Mendelow, 1986, 1989; Lederer and Sethi, 1988)	empirical research on the critical success factors of information systems planning
(Earl, 1987, 1989a, 1989b, 1990)	discussion and empirical research on different methods or processes of information systems planning *
(Waema and Walsham, 1990)	conceptual perspectives on information systems planning
(Walsham, 1993; Walsham and Han, 1992)	interpretive view on information systems planning
(Clemons, 1986, 1991; Clemons and Row, 1991)	economic view on information strategy
(Martin, 1982)	discussion of the information engineering method of information systems planning
(McLean and Soden, 1977)	comparison of information systems planning methods
(Zachman, 1982)	discussion of the concepts of IT architecture
(McFarlan, 1974)	discussion of the strategic value of IT
(Nolan, 1973, 1979, 1984; Nolan and Schotgerrits, 1989)	discussion and empirical research on stage models, alignment of IT strategy and business strategy
(Scott Morton, 1991)	formal methods, alignment of IT strategy and business strategy
(Beath, 1991)	empirical research on the role of IT champions in organizations
(Hopstaken and Kranendonk, 1985, 1987, 1990a, 1990b)	an individual learning perspective on information systems planning, methods of information systems planning
(Kim and Michelman, 1990)	case studies of success information systems planning projects
(Copeland and McKenney, 1988)	case studies of successful information systems
(Trauth, 1979)	discussion of different processes of information systems planning
case-study of big bang on London Stock Exchange	case-study of successful information strategy planning
(Mantz, 1985, 1987, 1990, 1991)	empirical research on the application of information systems planning in practice, critical factors for success or failure

Table 1. An overview of literature on information systems planning

implementing information systems. Such real life stories give us some insight into the dynamics of many factors that influence the planning process and the implementation of these information systems. In the case of airline reservation systems, it shows the industry, company, and technology in detail. However, these studies suffer from the limitations that all case studies suffer (Yin, 1989): the results of such studies are extremely difficult to generalize. The analytical generalizability can be very high, in that carefully described patterns of cause and effect can be valid for other companies or industries, but the statistically generalizability is low. Case studies can offer guidelines for coping with information systems planning in similar (practical) situations, but numerous similar case studies are needed in order to generalize the findings of these studies.

research on critical success factors

Various authors have carried out survey research on the critical factors of success or failure of information systems planning, for example Lederer and co-authors (Lederer and Mendelow, 1986; Lederer and Mendelow, 1989; Lederer and Sethi, 1988), and Mantz (Mantz, 1985; Mantz, 1987; Mantz, 1990; Mantz, 1991). Lederer carried out several empirical research projects on the implementation and use of information systems strategy methods. For example, Lederer and Sethi (Lederer and Sethi, 1988) discuss a survey of 80 organizations in which they examined the problems faced by information systems managers when they attempt to implement such a methodology. Based on existing

literature, they identified several potential problems in the implementation of these methods. A questionnaire was developed, tested, and sent to a total of 251 companies, with a response rate of 65%, of which 32% had carried out an strategic information systems planning project. The results show an categorization of each of the problems identified beforehand, in terms of the extremity of the problem. Top management commitment, the need for substantial further analysis, and team leadership were ranked as highly problematic. Inadequate consultant support, inappropriate size assumptions, and no theoretical framework were ranked as hardly problematic.

Mantz carried out similar research in The Netherlands. Over a number of years, Mantz investigated the extend of use of information systems strategy planning, problems encountered during implementation and use, future use of planning. The advantage of this longitudinal research is that it shows the trends in implementation and use of planning methods. The study shows that the use of methods is increasing, but not taken for granted. Various problems are encountered during implementation and use of these methods, problems that are similar to the problems discussed by Lederer and Sethi.

The critical factors may be used as building blocks for a proper theory on information systems planning. However, neither the research of Lederer nor the research of Mantz is based on a theoretical framework, and neither of the authors tries to develop a framework based on the research. In addition, both

authors do not make a distinction between different processes of information systems strategy formulation.

description of methods of information systems planning

Authors like King and Martin have developed approaches of information systems planning they describe, called information systems planning or business strategy planning (King, 1978; Martin, 1982). These approaches or methods of planning typically consist of a number of phases and techniques. Phases of planning that are identified are, for example, Information Strategy Planning, Business Area Analysis, Business Systems Design, and Technical Design. Applying these phases results in an information plan consisting of various architectures, such as an information architecture, systems architecture, and technical architecture. It also results in the definition of a set of projects to be carried out, described as part of an information plan. Techniques used to arrive at these architectures and projects are for example, task structure, function decomposition diagrams, and matrices.

The approaches described in literature are very much top-down approaches, in that they start with a blueprint of the future IS function (defined as part of the Information Strategy Planning phase), which is worked out in several architectures, information systems to be developed, and projects to be carried out. The approaches give marginal attention to the possibility of a bottom-up approach, in which IT champions or employees in the organization start using

new technology or information systems themselves.

Numerous companies have applied the method of these authors in practice, but empirical studies suggest that the application of these methods are as a whole not successful (Lederer and Sethi, 1988). As we discussed above, the approaches favour the top-down approach of planning, which is only one perspective of looking at the process of information systems planning.

alignment of business strategy and information strategy

It is widely accepted in IT literature that the information systems strategy should be derived from the business strategy (Martin, 1982; Scott Morton, 1991). The methods of top-down information systems planning discussed above are typical examples of approach based on this premise. Some methods have elaborated on this notion by making this a central premise of their approach. Such methods use the term 'strategic alignment' to stress the mutual adaption between environment, organization, and information technology. Typical examples of such methods are Business Process Redesign (Davenport, 1989) and the Strategic Alignment Model (Scott Morton, 1991). These approaches are more clearly based on theory than the approaches by King and Martin, but strategy literature by for example Mintzberg (Mintzberg, 1978; Mintzberg, 1987) shows that business strategy need not always be clearly defined. This highlights two main limitations of this stream:

- if business strategies are not always clearly defined, why should informa-

tion systems strategy be?

- even if information systems strategies need to be clearly defined, if the business strategy is not the process of alignment becomes irrelevant.

Stage models and strategic value framework

The stage model of Nolan (Nolan, 1973; Nolan, 1979; Nolan, 1984; Nolan and Schotgerrits, 1989) and the strategic value frameworks of McFarlan (McFarlan, 1974) and Porter & Millar (Porter and Millar, 1985) are often used as aids or techniques in the process of information strategy planning. These models are very useful in describing the role that IT may have in an organization, for example the strategic value of IT for the organization: does the use of IT in the primary production process have strategic advantages? Or does it have strategic advantage in the products the organization is selling? The models of Porter and McFarlan are useful tools for answering these questions. The model of Nolan is a useful tool for describing the 'maturity' of the use of IT in an organization. Knowing the level of maturity, it is possible, for example, to assess the potential value of certain types of technology for an organization.

Despite the usefulness in assessing strategic values, the models presented above do not describe how the process of planning for information systems should be organized, which is clearly a drawback of each of these models. In addition, empirical research that validates the models is limited. Especially the Nolan stage model has been examined critically, for example, by (King and Kraemer,

1984) and (Benbasat, et al., 1984).

IT champions, learning perspectives

Beath is one of the few authors who carried out case study research on the role of champions of IT innovations (Beath, 1991). The support by champions for developing and implementation of IT may be seen as alternative to the formal information systems planning approach. The result is a much more dynamic view of the information systems planning process than the traditional literature. Her empirical research of several IT champions showed that the role of these people is just as critical or even more critical than a formal process of information systems planning. For example, IT champions play an important role in sustaining commitment of top management, in obtaining resources, and expressing a clear vision on the role of IT in organizations. From this point of view, IT champions play the critical role of 'agents of change'.

Theory and research on IT champions offers an interesting and new perspective on the process of planning of information systems. It stresses the iterative, non-formal aspects of the planning process. Trauth (Trauth, 1979) and Hopstaken and Kranendonk (Hopstaken and Kranendonk, 1985; Hopstaken and Kranendonk, 1987; Hopstaken and Kranendonk, 1990a; Hopstaken and Kranendonk, 1990b) discuss information systems planning from this point of view. The iterative learning perspective focuses attention on the individuals involved in the planning process, such as the IT champion. So far, however, apart

from the research by Beath, Trauth, and Hopstaken and Kranendonk few research has been carried out in this area.

Interpretive methods and metaphors on information systems planning

The final stream in information systems planning literature is the interpretives method. The research carried out in this stream is typically case study research in which the idea of metaphor or structuration theory is used to describe the process of planning and implementation of information systems, see for example (Walsham and Han, 1992). Research in this field of study has come up with some very interesting results: it shows the importance of cultural and political aspects during the process of planning for information systems. Nevertheless, it suffers from the limitation of case study research that was discussed earlier: the generalizability of the results is low, and various case studies are needed in order to arrive at results that may be generalized in a proper way.

Summarizing the streams in information systems planning literature

To summarize, when we reflect on each of these streams and consider their limitations, what seems to be lacking is a clear understanding of the underlying assumptions of each of the streams. No serious attempt has been made to compare the various streams and analyzed their relationships. And this is necessary in order to identify the gaps in current literature and to identify ways to arrive at a proper conceptual foundation of information strategy planning. Even more important, little attention has been paid to differences in the process

of planning for information systems, even at a conceptual or theoretical level.

Therefore, in the next section, we will take a step back and use the concept of strategy models to compare the various streams in IT literature. Using the concept of strategy models, it is possible to arrive at a theoretical foundation for the process of information systems planning. With the help of this theoretical foundation, it is possible to identify several gaps in current literature and identify a agenda for further research. These are discussed in subsequent sections.

3. A classification of IT strategy models

In the previous section an overview was presented of the current literature on information systems planning. It was concluded from studying the current literature that a sound conceptual foundation for planning was still lacking. Consequently, it is useful to take a step back and analyze the general strategy literature for a conceptual foundation. Several authors have developed a set of strategy models, for example Mintzberg (Mintzberg, 1978; Mintzberg, 1987; Mintzberg and Quinn, 1992) and Chaffee (Chaffee, 1985). In this article, we will make use of the models developed by Chaffee, because of the following reasons:

- Chaffee presents a non-linear perspective on the planning process. Different strategy models are not positioned on one continuum of highly formalized to highly informal, but are looked at from different points of view, such as formalization, means, and role of the planning process.

Strategy model	Linear	Adaptive	Interpretive
Sample definition	"...determination of the basic long-term goals of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out these goals"	"...concerned with the development of a viable match between the opportunities and risks present in the external environment and the organization's capabilities and resources for exploiting those opportunities"	"...orientating metaphors constructed for the purpose of conceptualizing and guiding individual attitudes of organizational participants"
Nature of strategy	decisions, actions, plans	achieving a 'match', multifaceted	metaphor, interpretive
Focus of strategy	means, ends	means	participants and potential participants in the organization
Aim of strategy	goal achievement	coalignment with the environment	legitimacy
Strategic behaviours	change markets, products	change style, marketing, quality	develop symbols, improve interactions and relationship
Associated terms	strategic planning, strategy formulation and implementation	strategic management, strategic choice, strategic predisposition, strategic design, strategic fit, strategic thrust, niche	strategic norms
Associated measures	formal planning, new products, configuration of products or businesses, market segmentation and focus, market share, merger/acquisition, product diversity	price, distribution policy, marketing expenditure and intensity, product differentiation, authority changes, proactiveness, risk taking, multiplexity, integration, futurity, adaptiveness, uniqueness	measures must be derived from context, may require qualitative assessment
Associated authors	Chandler, Cannon, Child, Drucker, Glueck, Steiner & Miner	Hofer, Miles & Snow, Mintzberg, Steiner, Quinn, Kotler, Gluck, Galbraith	Pettigrew, Chaffee

Table 2. An overview of strategy models (based on Chaffee, 1985)

- the models developed by Chaffee are based on historical trends in strategy literature. This allows the trends in strategy literature to be related to trends in the information systems planning literature.
- the models stress the importance of the planning process as well as the role of a planning process in the organization. Sometimes, such as role may be highly symbolical.

Chaffee makes a distinction between three different types of business strategy models, which may be useful for the study of information strategy planning as well: the linear, adaptive, and interpretive model (Chaffee, 1985). We will discuss each of these models, and then classify the current information strategy literature based on these models.

The first strategy model is linear focuses on planning (Chaffee, 1985 p. 90). The term linear stresses the methodical, directed, sequential action involved in planning. The model is inherent in Chandler's definition of strategy. Both goals and the means of achieving them are results of strategic decision making. To reach these goals, organizations vary their links with the environment. Chaffee notes that one must assume either the environment is relatively predictable or else that the organization is well-insulated in from the environment.

The adaptive model differs from the linear model in several ways (Chaffee, 1985 p. 91). First, monitoring the environment and making changes are simultaneous

and continuous functions in the adaptive model. The time lag for planning that is implicit in the linear model is not present. Second, the adaptive model does not deal as emphatically as the linear model with decisions about goals. Instead, it tends to focus the manager's attention on means, and the 'goal' is represented by coalignment of the organization with the environment. Third, the adaptive model's definition of strategic behaviours goes beyond that of the linear model to incorporate not only major changes in products and markets, but also subtle changes in style, marketing, quality, and other nuances. A fourth difference follows from the relative unimportance of advance planning in the adaptive model. Finally, in the adaptive model the environment is considered to be a complex organizational life support system, consisting of trends, events, competitors, and stakeholders. Environment is a major focus in determining organizational action. The adaptive strategy rest on several assumptions about the environment. It assumes that the environment and the organization are much more open to each other, and that the environment is more dynamic and less susceptible to prediction.

The third strategy model, the interpretive model, is still emerging. Consequently, Chaffee (Chaffee, 1985 p. 93) describes the parameters of this model as still unclear. A recurring theme suggests that the model is based on social contract, rather than on an organismic or biological view of the organization. Strategy in the interpretive model might be defined as orienting metaphors or frames of reference that allow the organization and its environment to be understood by

organizational stakeholders. On this basis, stakeholders are motivated to believe and to act in ways that are expected to produce favourable results for the organization. The assumptions underlying this strategy model are different from the traditional models in three ways: organizational reality is incoherent in nature; strategy is an organization-wide activity, not just top-management concern; and motivation, not information, is the critical factor in achieving adequate strategic behaviour. These themes suggest a strategy model that depends heavily on symbols and norms.

Given the three strategy models, three different models for the process of information systems strategy planning can be defined as well: a linear IS strategy, an adoptive IS strategy, and an interpretive IS strategy. The linear IS strategy model characterizes the top-down, planned approach to IS strategy formulation. The focus of this strategy model is on ends and the means to achieve these, described in a plan, that is, the information plan.

The adaptive strategy model characterizes the coalignment of the IS strategy with its environment. The environment, from the perspective of IS, consists of the internal environment of the organization, and the external environment. Thus, the strategy model stresses the alignment of IS, organization, and environment. This stresses the coalignment of business strategy and IS strategy as well. An IS strategy based on this model may be planned, but need not always be planned.

The interpretive IS strategy model stresses the legitimacy of the strategy. It focuses on participants in the organization, by developing symbols legitimizing the IS strategy, or by improvement in interaction which stresses this legitimacy as well. An IS strategy based on this model is usually not planned, but communicated to participants in the organization.

Having identified three strategy models for IS strategy, we can describe the current literature on information strategy planning based on these models, and subsequently to identify the gaps in current literature. This is the focus of the next section.

4. Gaps in the current IT literature

Having discussed the three strategy models, we need to analyze the literature on the information systems planning field based on these models. The authors discussed in table 1 can be classified according to the strategy models, resulting in table 3. Table 3 thus gives an overview of the implicit assumptions of the various areas of research on ISP.

It will come as no surprise that the current ISP literature is strongly focused on the linear strategy model, which assumes that an organization (including its IT department) is able to act in a relatively stable way in its environment. Not only the methodological works of Martin and King take this perspective, also empirical works of Mantz, Lederer, and Nolan have a linear focus: there is hardly any

evidence in these works of the role or importance of the environment in the information systems strategy.

If we look at the application of the other two strategy models in the information systems field, we can conclude that the attention for these strategy models is

Strategy model	Related authors in ISP field
linear ISP model	Earl, King, Lederer, Martin, Davenport, Zachman, Nolan, McFarlan, Whetherbe
adaptive ISP model	Rockart, Trauth
interpretive ISP model	Waema, Walsham, Han Chun Kwong, Hopstaken & Kranendonk, Beath

Table 3. Research in the ISP field classified based on the strategy models of Chaffee

limited. Especially the adaptive model, which has received considerable attention in the field of organization studies, has hardly received any attention in the ISP field. The adaptive model considers different types of environment, part of which are unstable and dynamic. The environment as seen by IS researchers, i.e. the external environment and the internal environment of the organization, is apparently viewed as relatively stable, because most IS researchers rely on the linear model. In contrast the interpretive model has got quite some attention by authors in the ISP field.

When analyzing table 3 and comparing this table with the description of the strategy models in table 2, several observations can be made:

- so far, little attention has been paid to strategy models in the ISP literature, nor has there been much research that compares different strategy models for ISP (Earl, 1990 being one of the exceptions, but his research is based on empiry and not on theory).
- current ISP literature is strongly oriented towards the linear model of strategy. Apparently the environment of an organization from the perspective of information technology is seen as rather stable.
- little research has been carried out based on the adaptive model of strategy, although most research in the general strategy field is based on this model. The strategic alignment model of MIT, discussed by for example Rockart (Scott Morton, 1991), is one the exceptions. Although research by for example Trauth (Trauth, 1979) is based on adaptive model as well, no adequate attention is paid to the role of the external environment of an organization.
- in contrast, the interpretive model for information systems strategy is quite popular. Research based on this model either uses the structuration theory (for example (Walsham, 1993; Walsham and Han, 1992)), or using the technology champions theory (for example Beath, (Beath, 1991)).

The observations made above show us the gaps in current literature on information systems planning. These gaps can be classified into four groups. The first gap deals with an overall conceptual framework for information systems strategy. A set of strategy models like the one by Chaffee is still lacking in ISP literature.

The set of models by Chaffee looks promising for describing information systems strategy, but perhaps needs more tailoring to the specific aspects of this kind of planning. Second, hardly any fundamental research has been carried out based on the adaptive model. The strategic alignment model is one of the few exceptions, but was only developed a few years ago, and still has some elements of rationality, of linear thinking. Further empirical as well as theoretical research is needed in this area. The third gap in current literature deals with the interpretive model: more research on the role of technology champions is needed. In addition, a fourth gap related to the interpretive model can be identified: there is still more need for research on the symbolic role and psychological value of an information systems plan. The symbolic value of planning is one of the underlying assumptions of the interpretive model. Analysis based on structuration theory may provide interesting insights into this phenomenon.

5. Conclusions

This article discussed the conceptual foundations of the literature on information systems planning. After an analysis of the current literature in the field of research, several streams of study were identified. These streams were hardly related, from which it was concluded that a sound conceptual basis for information systems strategy planning is still lacking. Taking a step back into the general strategy literature showed that the use of strategy model may give us insights into the gaps in current ISP literature. These gaps present us with an agenda for

further research which may allow the literature to arrive at a sound conceptual base. Four major gaps in current literature were identified:

- the development of a set of strategy models for the information systems field.
- research based on the adaptive model of strategy.
- research on technology champions.
- research on the symbolic role and psychological value of an information systems plan.

Research on ISP can address each of the gaps separately. But it might just as well attempt to integrate various perspectives and address more than one gap at the same time. From this point of view, an integrated longitudinal, participative, ethnographical research might be very promising.

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