2006

Information strategy – research and reality

Martin Mocker
European Research Center for Information Systems, martin.mocker@ercis.de

Alexander Teubner
European Research Center for Information Systems, alexander.teubner@ercis.de

INFORMATION STRATEGY – RESEARCH AND REALITY

Mocker, Martin, European Research Center for Information Systems, University of Münster, Leonardo Campus 3, 48149 Münster, Germany, martin.mocker@ercis.de

Teubner, Alexander, European Research Center for Information Systems, University of Münster, Leonardo Campus 3, 48149 Münster, Germany, alexander.teubner@ercis.de

Abstract

Strategic information planning and its output, the information strategy, are relevant topics in practice as well as in research. However, current research provides neither a clear nor a consistent picture regarding the concept of information strategy. While unsatisfactory in itself, research in such a state probably also fails to provide practitioners with guidance in developing information strategies. Since practitioners nevertheless widely discuss about information strategy e.g. in practitioner magazines and conferences, the question arises how practitioners understand information strategy. In exploratory interviews, we confirmed a disconnection between research and practice and identified five types of information strategy concepts: Information strategy is understood as a binding guideline, a departmental plan, a change agenda, the market strategy of the IT department or as a set of business unit overarching IT issues. The value of analysing these concepts in practice lies in revealing reasons for the disconnection between research and reality as well as potentially providing a fresh impetus for information strategy research in order to eventually improve the discontenting state of research.

Keywords: Information Strategy, Strategic Information Planning (SIP), Strategic Information Systems Planning (SISP), Information Systems (IS) Strategy, Information Technology (IT) Strategy.

1   MOTIVATION AND INTRODUCTION

Strategic information planning (SIP[1]) is an important topic for managers. As such, SIP is among the highest-ranking issues on management agendas (Galliers 1993, Watson et al. 1997, Gartner 2005, p.7 and Luftman 2005).

Despite its prominence in practice and practitioner publications, SIP is not one of the most frequently addressed topics in academic journals (Lee & Gosain & Im 1999). Nevertheless, a number of research efforts have already been devoted to this topic (see Brown 2004 for a detailed survey). Most published SIP research focuses rather on the process of strategic planning than on the result, i.e. the information strategy[2] (Teo & Ang 2000). In line with this, Brown (2004) identified that only one fourth of all SIP related articles in the last fifteen years cover the output of SIP.

The focus on the process is a surprising fact since as long as the concept of information strategy (what is the output of SIP) is unclear, the discussion on the process (how to develop the output) must necessarily remain vague. Indeed, up to now, there is neither consensus on the concept of information strategy nor are the various propositions of information strategy clearly articulated and reasoned (see Mocker & Teubner 2005 for an overview). Some authors view information strategy as the application portfolio, others understand it as a functional strategy and still others see it as a list of diverse IT issues (e.g. a hardware plan, an education plan, facilities plan), providing little arguments for why this list should be complete or of strategic relevance. Additionally, few concepts are validated in practice (Flynn & Goleniewska 1993, pp 300). For example, Earl (1996, p. 491) – whose proposal has received much attention in research (e.g. Peppard 1999; Ward & Griffiths 1996, pp. 30; McNurlin & Sprague 2006, pp. 134; Galliers 1991) – admits that key aspects of his model are still "conjectural".
Furthermore, the undifferentiated use of terminology supports the impression that the academic discussion on information strategy concepts is still nebulous: Lederer and Salmela (1996) use the terms "strategic information plan" and "IT strategy" – regretfully without explaining the differences between them. The latter term is used by Gottschalk (1999) as well. Chan, Huff and Copeland (1998) use the terms "IS strategy" and "IS/IT strategy". Finally, Smits, van der Poel and Ribbers (2003) use the term "information strategy".

In summary, the mistiness of the academic discussion on information strategy is in itself unsatisfactory but also fails to provide practitioners with guidance in developing information strategies since a practitioner is facing a variety of incompatible answers from research. Especially given the high relevance of the topic in practice, this situation is more than discontenting. Our personal experience from teaching executive courses in information management suggests that academic literature on information strategy is only poorly perceived in practice – maybe also due to the confusing impact of the described situation.

Notwithstanding the lack of guidance provided by research, practitioners discuss about information strategy – usually under the label of IT strategy – more intensively than this is done in academic literature (Lee & Gosain & Im 1999). These discussions take place in dedicated conferences (e.g. "Strategisches IT-Management" run by the newspaper Handelsblatt) or tracks in practitioner magazines (e.g. "IT Strategien" in Computerwoche). Additionally, the fact that it is not uncommon for organisations to have positions termed "Head of IT Strategy" or "Director Strategic IT Management"

---

[1] Strategic information planning is also referred to as strategic information systems planning (SISP).

[2] We use the term information strategy in analogy to the term information management since it is meant to encompass other concepts such as information systems (IS) and information technology (IT) strategy, for details see ((Mocker & Teubner 2005). In practice, the term IT strategy is more popular.

clearly indicates that practitioners spend significant efforts in thinking about information strategy. In other words, there must be original and accepted concepts, heuristics and ideas in practice, that are labelled information strategy. For two reasons it is important for research to understand those concepts in practice. Firstly, they might reveal barriers – apart from the terminological and conceptual aspects mentioned above – for the reception of academic literature in practice. Secondly, they can potentially provide a fresh impetus for research to address information strategy issues that have not been covered there so far. For these reasons, we started an exploratory research to identify and untangle different conceptions of information strategy in practice. The research approach taken to achieve this is outlined in section 2. Section 3 describes the results of our research, particularly different types of information strategy concepts in practice. Finally, in section 4, we discuss our findings and the implications for future research to eventually improve the situation described above.

2 RESEARCH OBJECTIVES AND APPROACH

The objective of our paper is to address two questions that have been motivated above as growing out of a poor state of research in information strategy:

1. We hypothesize that academic literature on information strategy is poorly perceived by practitioners. Is this really the case?

2. If this is the case, i.e. concepts of information strategy presented in academic research do not find their way into practice, though at the same time information strategy is a heavily discussed topic in practice: what is the understanding in practice? This question may be divided into two sub questions:

   a. Is there a common understanding of information strategy in practice?

   b. If not, what are types of concepts used?

We stated in section 1 that some practitioners present their concepts of information strategy in conferences, have published them elsewhere or even formally hold the title of "Head of IT strategy". These practitioners can be expected to deal with the topic information strategy not only marginally but as one of their core tasks. They can be seen as experts who have already devoted much thinking to information strategy. Thus, they are also more likely to have dealt with other sources addressing information strategy issues. This makes them a prime target to answer question 1. Through presenting their understanding in conferences or publications they are also likely to shape the understanding of other practitioners. Consequently, it is also appropriate to start with these experts when turning to practice regarding question 2. To receive a broad overview, we selected companies with diverse backgrounds (regarding industry, size, IT organization). Table 1 summarizes the research sample according to these characteristics.

In order to get meaningful data from the selected experts, we used exploratory, qualitative, open interviews. This approach was chosen for two reasons: Firstly, the state of research described above does not facilitate generating strong hypotheses on information strategy concepts that could be tested solely quantitatively. The level of ambiguity in information strategy terminology and concepts suggests a bottom-up, theory-independent, exploratory approach. Secondly, we are interested in getting deep insights into concepts, i.e. practitioners' understanding. To explore and really comprehend the "what's" and "why's" of information strategy concepts used in practice, a qualitative approach is more suitable than a quantitative approach (Cropley 2005, pp. 37, especially p. 49, Miles & Huberman 1994, pp. 5). Practitioners can reveal their understanding, use and reasoning of information strategy in a face to face discussion much better than it would be possible using quantitative approaches. In using a qualitative approach, we follow other researchers (e.g. Brown 2004, p. 27) who state – again with an eye towards the current situation in research – that "it may be appropriate for more theory-generating research to be conducted, employing qualitative techniques, such as grounded theory […]".

Table 1: Research sample

Industry	Revenue[3] p.a.	Title of participants	Organization of IT	Location of IT strategy planning
1. Insurance	2 bn. EUR	Director IT Strategy	Sub unit of "Accounting & IT"	Staff unit within IT department
2. Insurance	2 bn. EUR	Director IT Development	Main department	IT department
3. Health care	4 bn. EUR	CIO	Profit center unit	IT department
4. Public institution	n/a[4]	Director Information Systems	Main department	IT department
5. Telecommunication	50 bn. EUR	VP Corporate-IT-Management	Profit center unit & distributed across BUs	Corporate unit
6. Financial services	50 bn. EUR	CIO, Director IT Department	Main department	IT department
7. Investment Bank	24 bn. EUR	Director IT Department	Main department	IT department
8. Logistics	17 bn. EUR	Head of IT	Profit center unit & distributed across BUs	Staff unit within globally distributed SBU
9. Universal bank	320 bn. EUR	Deputy Head of IT Strategy	Profit center unit & distributed across BUs	Corporate unit
10. Pure online bank	48 mio. EUR	Head of IT strategy	Fully outsourced, only two staff members remaining	Head of IT strategy
11. Transportation	23 bn. EUR	Head of IT strategy	Profit center unit & distributed across BUs	Corporate unit

In total, we conducted twelve interviews (one expert was interviewed twice). Each interview took around two hours. All interviews except two phone interviews were conducted at the respective company's site. All companies are headquartered in a German speaking country. Four companies were active only in their respective country the others were engaged in Europe or even globally. The interviews were conducted in German as this was the native language of the participants. The questions we asked in our interviews are introduced in the next section along with the summary of answers.

3 FINDINGS: LITERATURE PERCEPTION AND INFORMATION STRATEGY CONCEPTS

This section presents the findings from the interviews conducted up to now for the two research questions introduced in the previous section. Overall, the experts were very open to share their thinking on information strategy with us. Many of those who documented their strategies additionally provided us with or gave us temporary access to their official information strategy documents and presentations, at least on the level of the table of contents. In summary, we could confirm our hypothesis that academic information strategy literature is poorly perceived and above this identified five types of information strategy concepts in practice.

---

[3] 2004 figures. premium income for insurance, assets under management for investment banks, credit volume for banks.

[4] Supra-national, public administrative body.

3.1 Perception of academic information strategy literature in practice

To answer the first research question, we asked each expert whether any literature was used to develop the information strategy. If so, we asked for titles. We specified that we were interested in all kinds of books, articles, online resources or other materials used. We asked these questions only after having finished the interview on his or her understanding of information strategy in order not to influence the participant.

All interviewees immediately negated to use any academic literature as a direct input for developing their information strategies. Only two of them were able to name the most recent publications used by them in the context of SIP after some time of thought. Both referred to the book "IT Governance" (Weill & Ross 2004) and to the article "IT doesn't matter" (Carr 2003). One other participant mentioned a book concerned with team building as a used input. Two participants stated that they used online resources provided by practitioner magazines. Some interviewees rely on recommendations made specifically for their company by management consultants who had advised the company in the past or on reports by industry analysts such as Gartner, IDC and others.

When confronting the experts with the fact that during a literature analysis we found more than 130 books that directly refer to SIP or information strategy, we asked them for reasons not using any of them. They stated that either academic literature tends to be irrelevant in that it rather discusses terminology than actual content. Or they claimed to be "in a special situation" so that neither general guidelines provided by research nor specific case studies from other contexts would be useful. One interviewee stated that rather than ploughing through the wealth of opinions in literature, he would much more like to write his own articles and books, because that "would make [him] think the whole thing through [him]self".

Overall – since most experts did not use at least any academic literature – we could preliminarily verify our hypothesis that academic literature is only poorly perceived in practice. This encouraged us even more to find out the information strategy concepts used in practice as they were not based on academic research findings.

3.2 Types of information strategy concepts in practice

In identifying a concept of information strategy, we had to face several challenges. First of all, such mental concepts are not obviously visible. You cannot ask a practitioner about his or her concept of information strategy. You also cannot merely rely on the actual information strategy agenda, i.e. the IT decisions which are currently regarded as strategic and should be based on an information strategy concept. The agenda depends on situational factors and thus changes frequently – in contrast to the concept or understanding of information strategy which is valid more long term. That means that two practitioners with the same understanding of an information strategy might currently deal with different IT decisions on their actual information strategy agenda, because their companies are in a different situation (different industry, growth phase vs. consolidation phase, etc.). The agenda is thus only one potential indicator, but certainly not sufficient evidence for the underlying type of strategy concept. To get insights into the information strategy conception behind the agenda, we asked for past agendas and for the reasons for putting the label "information strategy" on these agenda items instead of only asking for the current strategy agenda. A second challenge for our research was a gap between the desired concept of information strategy ("Well, I think IT strategy should be more focused on …") and the concept behind the information strategy actually in work – this relates to the difference of espoused theories and theories-in-use (Argyris 1976). Some interviewees tended to outline desired concepts of information strategy. In order to distinguish between wishful thinking and actual concepts used within the company, we asked for documents or presentations. If these were not accessible, we asked how other people within the company would react to a certain understanding. We also asked for how strategic IT decisions made in the past related to the stated understanding.

In the next paragraphs we present the types of information strategy concepts derived from our interviews so far. For this, we boiled down the experts' statements to the core descriptions of the respective information strategy. In order to underpin our findings, we provide important fragments from the interviews.

3.2.1 Type 1: Information strategy as a binding guideline

Practitioners who understand information strategy as a binding guideline see the necessity to determine the direction for certain IT decisions such as general technology choices (e.g. platforms, architectural principles) or IT skill sets. Making these directional decisions has a huge impact on whether "IT [can fulfil] business needs long term", i.e. whether it can provide its services not only today, but "in a sustainable way". While determining the direction, they want to manage the risk that certain decisions regarding IT would lock the company into the chosen direction for a long time: "once you decided to use SAP, you don't change that decision easily any more". Furthermore, these decisions have to be made under a high level of uncertainty, e.g. in dynamic business environments on the one hand and changing technology markets on the other hand. Thus, practitioners have to plan those decisions very carefully or – as they call it – strategically. In this sense, information strategy is also seen as setting "guiding pillars", "cornerstones" or "setting the overall direction" for future IT use that one would have to stick to in order to provide sustainable IT services.

3.2.2 Type 2: Information strategy as a departmental plan

"The business objectives for 200x foresee to secure market leadership, […] growth and […] profitability. […] to reach these objectives, [the IT] department has to [focus on] the following [activities] in the planning period" is a statement by interviewees who understood information strategy as a departmental plan. A department has to plan its activities and resources needed to fulfil certain targets that are typically set by top management. "Business objectives" or "key performance indicators" are broken down for each department from the company-wide objectives such as "Target x: reduce IT cost by y%". For example, the IT department has to plan which IT operations activities will be required next year and which development projects will have to be staffed in the next years. For these activities the IT department needs a certain budget, a certain headcount and skills for the IT staff. The objectives and plans to reach them are laid down in a document referred to as the information strategy. Potentially the document might be entitled differently, e.g. "IT conception" or "IT department plan".

3.2.3 Type 3: Information strategy as a change agenda

In some companies we found situations which necessitated a radical change in the use or management of IT within the company. This might be a "big bang" migration to an enterprise wide platform or hiving off the IT department to also serve the external market ("We did a yearly planning, but that was not strategic. What I would really call a strategic shift was carving out the IT department [...] the complete […] redirection [of IT]"). It might also be a change in how the IT department and business units work together, also referred to as IT governance ("now, the business units have an IT budget and negotiate with the IT department on projects […] in the past, the IT department had the budget and a committee decided on projects"). Whatever the decision is, the way IT is used or managed within the company is not the same as before any more. These new, innovative, ground-breaking and radical change decisions – which differ over time – are then labelled information strategy.

3.2.4 Type 4: Information strategy as the market strategy of the IT department

A number of interviewees used the metaphor of a market strategy to express their understanding of information strategy. As such, they referred to the IT department as providing "products", i.e. IT

services, to "customers" within the company, i.e. business units. In this sense, business units' demand and IT department's supply create a market within the company. Just as a company has to develop a market strategy on how to define itself within that external market, the IT department has to develop an information strategy. This strategy defines the "vision and mission" of the IT department, the "market, i.e. the IT department's customers and products" and "IT internal product structures, i.e. architectures. In order to deliver this product structure, one has to think about the delivery organisation with the structure and processes of the IT department." Understanding information strategy as a market strategy thus means to plan the IT department as a business within the business.

3.2.5   *Type 5: Information strategy as the set of overarching IT issues*

IT related tasks (such as software development) are not always centralized within one IT department but more often spread across the organisational units of a company (e.g. strategic business units for mobile communication, fixed line communications and Internet based communications in a telecommunication company). Thus, all these units make IT related decisions (e.g. which technologies to use). Typically, companies facing these issues (such as groups or holdings) expressed the need to coordinate those IT decisions impacting multiple units centrally. Choices for certain technologies of company wide interest are one example for those business unit overarching IT issues: "one business unit might want to introduce mobile devices. Mobile devices might become a topic for other business units later on as well. Thus, they have to be orchestrated and made to talk to each other." Another example is IT governance, defining the "rules of the game" or more specifically the IT decision rights which have to be followed by all business units. "[A]ll those decisions that have an impact across several business units or have a significant financial impact on the group as a whole" are understood as the information strategy of the company. Not included in the information strategy are the decisions that only have a local effect on a single business unit and thus require no "orchestration": "The question is how much individuality does a business unit require to differentiate itself and how much synergies can we generate across business units".

<p style="text-align:center">* * *</p>

The five types of information strategy concepts described above can be characterized by a number of criteria: purpose, trigger of the development of an information strategy, degree of formalization and core themes of the information strategy agenda. These characteristics can also be used to distinguish the different information strategy concepts from each other. Table 2 displays the types of information strategy concepts along those characteristics. It should be noted that different types might be used within a single company. However, no case exhibited more than three different types.

Table 2: Types of Information strategy concepts

Character-istics of concepts	Information strategy concepts: Information strategy is understood as a …				
	1: Binding guideline	**2: Depart-mental plan**	**3: Change agenda**	**4: Market strategy of the IT department**	**5: Set of overarching IT issues**
Purpose	Ensure that IT services can be provided in a sustainable way. Mitigating the risk of locking the company into a wrong direction. Making fundamental, directional decisions regarding IT in an uncertain and complex environment	Ensure that department contributes its part to fulfilling company's targets	Change the way of how IT is currently conducted fundamentally. Make the CIOs work interesting.	Define the IT department's fields of actions, customers, products and how to deliver products	Coordinate and regulate decisions of single business units for the best of the whole group. Balancing standardization and differentiation.
Trigger	Business demand cannot be fulfilled any more (either because IT is in desolate state or business situation changes)	Regular business planning	IT outdated Information strategy agenda gets empty	Regular review of information strategy	Decisions or requests by business units
Degree of formal-ization	High, forms a contract and sets guiding principles	High, proves that targets can be achieved	Low, only certain decisions get documented, no coherent "information strategy" document	High, is the constitution of the IT department	Medium to high, sets regulations for business units where needed
Core themes on the information strategy agenda	IT platform selection due to merger situation or because current platform not sufficient any more Governance and role of the IT department vis a vis the business units (how do we interact)	Financial plan of the IT department (budget) HR plan of the IT department	Hiving off the IT department to serve external market Role of IT department vis a vis the business untis (how to gain power)	Mission and Vision of the IT department Definition of customers and products Internal organisation of the IT department to best deliver services to customers	Use of standard software vs. individual software IT standards Corporate wide IT decision rights (governance)

The *purpose* of an information strategy describes what the information strategy is used for. A striking difference in the purpose of information strategies can be found between type 1 (information strategy as a binding guideline) and type 3 (information strategy as a change agenda). While a type 1 strategy is aiming to ensure that IT services can be provided in a sustainable way, a type 3 strategy aims at changing how IT is used and provided within the company radically.

A *trigger* is an event that initiates the development of the information strategy. Types 2 (information strategy as a departmental plan) and 3 (information strategy as a change agenda) differ significantly

regarding the trigger of the strategy development. Information strategy as a change agenda is triggered by a demand for radical change: e.g. "Our IT landscape is in a desolate state. It cannot meet the business demands any more" or "the company decided to not only sell products, but also services – our legacy IT systems could not support this". They might also be triggered by the CIO herself in case she does not have any interesting issues to deal with. In this case information strategy as a change agenda is used to provide the CIO with an interesting job: "then, SAP was introduced. So we had nothing to do anymore. Bad, Bad. […] Since the company was changing anyway […] we [the IT department] decided to also address the external market with an own IT product and services". In contrast, an information strategy as a departmental plan is usually planned regularly, for example in the course of yearly business planning and budgeting sessions.

The *degree of formalization* of an information strategy is expressed in the level of documentation. For information strategies as a change agenda (type 3), there will usually not be a coherent and comprehensive document called information strategy. This is because the decisions which are "strategic" in a specific time are not necessarily connected to those in a different point in time. Information strategy decisions rather are documented one by one, e.g. in different board presentations. On the other extreme, information strategies based on type 5 are documented well. Type 5 information strategies are regulations that one has to be able to come back to in case of doubt, similarly to a law document. Whenever a regulation is added or changed, it will be added to a central document that includes all "agreements".

Information *strategy agendas* have been defined above as the actual instantiations of an information strategy concept in a certain situation. Although strategy agendas change over time, they can still serve as an indicator for the used concept. For example, typical items on the strategy agenda based on type 4 (information strategy as a market strategy of the IT department) are likely to be mission and vision statements of the IT department, the definition of services provided per business unit, etc. Whereas typical information strategy agendas for type 5 (information strategy as overarching IT issues) would include IT governance issues or corporate wide IT standards. These agenda items reflect the idea of setting the rules that help coordinating decentralized IT decision making and orchestrating it towards overarching objectives.

4 DISCUSSION AND OUTLOOK ON FURTHER RESEARCH

In section 1, we motivated to look into information strategy reality for two reasons: Firstly, understanding practitioners' concepts might reveal barriers for the reception of academic literature in practice. Secondly, they can potentially provide a fresh impetus for research to address information strategy issues that have not been covered there so far. This section discusses our findings in this context and their implications for further research.

In our interviews, we confirmed a disconnection between research and practice. IS research literature is ignored by practitioners and thus has little influence on how information strategy is understood by practitioners (research question 1). Whether this is due to the lack of clarity in SIP research is addressed in our research by presenting the concepts proposed in SIP research to practitioners and asking them to assess its relevance for their understanding of information strategy. This is done in a second, structured part of the interviews complementing the open, theory-independent part that this paper is based on. Even without a thorough analysis, which still has to be done, practitioners seem to be able to follow parts of the concepts proposed in research.

A second reason for the disconnection between research and practice – apart from the lack of clarity in research – could be different conceptual realms: practitioners might have completely other problems to be solved 'strategically' than researchers are thinking of. For example, one common reason for labelling decisions as "strategic" as provided by the market (e.g. Porter 1980, transferred to IT by e.g. Porter & Millar 1985, McFarlan 1984) or resource based view (e.g. Barney 1991, transferred to IT by e.g. Mata & Fuerst & Barney 1995) is to gain a 'competitive advantage'. It is striking that almost no

interviewee mentioned gaining a competitive advantage as a purpose of information strategy. This already indicates that it is necessary to dig deeper into practitioners' reasons for their concepts of information strategy. It is dangerous for research to blindly follow practice. For example, Galliers (1995) questions more generally for information management as a whole the "extent to which the research agenda should be dictated by concerns in the world of commerce and industry". One reason he provides for this is that "IT directors too readily follow the latest 'silver bullet' and are taken by the hyperbole surrounding certain of the management fads" (Galliers 1995). In other words, current IT trends might influence practitioners' understanding of information strategy which should not be fed back to research uncritically. One recent example for this was the e-commerce hype. This is to say that reasons provided by practitioners for using the label 'information strategy' have to be explored in depth. After understanding practitioners' reasons, they have to be filtered in order to focus on those ones that really have the potential to influence SIP research beyond 'current hyperbole'. Since "unlike in IS […], research within strategic management has more fully developed theoretical and operational dimensions of planning systems that can be used to reconcile findings and facilitate a common dialogue across research efforts" (Segars & Grover & Teng 1998), using strategic management theory to reconstruct practitioners' arguments can be a good start to provide a basis for this filtering.

Another danger of adapting the SIP research agenda uncritically is to follow the interests of a small group of "gurus" in practice. In our research, we deliberately selected experts in information strategy (see section 2). It is noticeable that the background of our interview partners was typically in mathematics, computer science, natural science or engineering, i.e. rather technical. In addition, information strategy in all cases was very much driven by individuals or a group of individuals within a unit responsible for information strategy or IT in general. In no case was a committee or were business managers charged with developing the information strategy. Though this is in line with findings by Flynn and Goleniewska (1993), who report that SIP is still mainly conducted by the IT department, we have to check whether the results from our group of interviewees are representative, e.g. by using a randomized sampling.

In summary, turning to practice can potentially provide a new impetus for overcoming the unsatisfactory situation in information strategy research. At least, there seems to be substantial difference between research and reality in the used concepts of information strategy. However, before adapting the information strategy research agenda, arguments used in practice have to be understood and validated. With our research we conducted a first step towards understanding information strategy concepts in practice. There is still some way to go in order to make information strategy research more fruitful for reality.

5   REFERENCES

Argyris, C. (1976). Leadership, Learning, and Changing the Status Quo. Organizational Dynamics, 4 (3), 29-43

Barney, J.B. (1991). Firm Resources and Sustained Competitive Advantage. Journal of Management 17 (1), 99-120.

Brown, I.T.J. (2004). Testing and Extending Theory in Strategic Information Systems Planning Through Literature Analysis. Information Resources Management Journal, 17 (4), 20-48.

Carr, N.G. (2003): IT Doesn't Matter. Harvard Business Review, 81 (5), 41-49.

Chan, Y.E., Huff, S.L. and Copeland, D.G. (1998). Assessing realized information systems strategy. Journal of Strategic Information Systems, 6, 273-298.

Cropley, A.J. (2005). Qualitative Forschungsmethoden: Eine praxisnahe Einführung. Dietmar Klotz, Eschborn.

Earl, M.J. (1996). Integrating IS and the Organization. In Information Management: the Organizational Dimension (Earl, M.J., Ed.), pp. 485-502. Oxford University Press, Oxford et al.

Flynn, D.J. and Goleniewska, E. (1993). A survey of the use of strategic information systems planning approaches in UK organizations. Journal of Strategic Information Systems, 2 (4), 292-319.

Galliers, R.D. (1991). Strategic information systems planning: myths, reality and guidelines for successful implementation. European Journal of Information Systems, 1 (1), 55-64.

Galliers, R.D. (1993). Research issues in information systems. Journal of Information Technology, 8, 92-98.

Galliers, R.D. (1995). A Manifesto for Information Management Research. British Journal of Management, 6 (6), S45-S52.

Gartner, (2005). The Gartner Scenario 2005. IT Leaders' Next Big Decisions.

Gottschalk, P. (1999). Strategic information systems planning: the IT strategy implementation matrix. European Journal of Information Systems, 8 (2), 107-118.

Lederer. A.L. and Salmela, H. (1996). Toward a theory of strategic information systems planning. Journal of Strategic Information Systems, 5 (3), 237-253.

Lee, Z., Gosain, S. and Im, I. (1999): Topics of interest in IS: evolution of themes and differences between research and practice. Information & Management, 36 (5), 233-246.

Luftman, J. (2005). Key Issues for IT Executives 2004. MIS Quarterly Executive, 4 (2), 269-285

Mata, F.J., Fuerst, W.L. and Barney, J.B. (1995). Information Technology and Sustained Competitive Advantage: A Resource-Based Analysis. MIS Quarterly, 19 (4), 487-505.

McFarlan, F.W. (1984): Information technology changes the way you compete. Harvard Business Review, 62 (3), 98-103.

McNurlin,B.C. and Sprague, R.H. (2006). Information systems management in practice. 7th Edition. Pearson Prentice Hall, Upper Saddle River.

Miles, M.B. and Huberman, A.M. (1994): Qualitative Data Analysis. 2nd Edition. Sage, Thousand Oaks.

Mocker, M. and Teubner, R.A. (2005). Towards a Comprehensive Model of Information Strategy. European Conference on Information Systems, Regensburg, May 2005.

Peppard, J. (1999). Information management in the global enterprise: an organising framework. European Journal of Information Systems, 8 (2), 77-94

Porter, M.E. (1980). Competitive Strategy: technics for Analyzing Industries and Competitors. Free Press, New York et al.

Porter, M.E. and Millar, V.E. (1985). How information gives you competitive advantage. Harvard Business Review, 63 (4), 149-160.

Segars, A.H., Grover, V. and Teng, J.T.C. (1998). Strategic information systems planning: planning system dimensions, internal coalignment, and implications for planning effectiveness. Decision Sciences 29 (2), 303-346.

Smits, M.T., van der Poel, K.G. and Ribbers, P.M.A. (2003). Assessment of information strategies in insurance companies. In Strategic Information Management (Galliers, R.D. and Leidner, D.E. Eds.), p.64-88, Butterworth-Heinemann, Oxford.

Teo, T.S.H. and Ang, J.S.K. (2000). How useful are strategic plans for information systems?. Behaviour & Information Technology, 19 (4), 275-282.

Ward, J. and Griffiths, P. (1996). Strategic planning for information systems. 2nd Edition, John Wiley & Sons, Chichester.

Watson, R.T., Kelly, G.G., Galliers, R.D. and Brancheau, J.C. (1997). Key Issues in Information Systems Management: An International Perspective. Journal of Management Information Systems, 13 (4), 91-115.

Weill, P. and Ross, J.W. (2004). IT Governance. Harvard Business School Press, Boston.