



## Dynamic and emergent information systems strategy formulation and implementation

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### Abstract

Early attempts to formulate information systems (IS) strategies concentrated on the analytical task of deriving IS strategies from business plans. The limitations of the static plans that often resulted from these formal studies were, however, soon discovered. The critics suggested informal and incremental planning to ensure flexibility, creativity and strategic thinking to comprise emergent strategies as well as planned strategies.

In previous IS planning research, there appears to be a contradiction between the published planning methods and the generally held views about effective implementation of IS planning process. The explicit methods described in IS literature predominantly assume a comprehensive IS planning process. Despite the fact that many researchers consider incremental approaches to be more effective, methods that can be used to facilitate incremental IS planning are few, not detailed enough and not comprehensive.

The four cycles method introduced in this paper attempts to combine the strengths of both the comprehensive and incremental planning to be able to recognise emerging trends and to make an e-business strategy. The method provides a basic schedule for organising planning activities. IS planning is seen as a continuous process that is periodically adjusted to the expectations of the participating managers. Practising managers can use the method to facilitate implementation of an incremental and continuous IS planning process. For e-business strategy research, the paper provides a theoretically based method that can be tested in future action research projects.

The first results of conducted action research show that the method should not be used as a checklist but as a choice list. Each period had a constant focus on external developments and the fit with internal possibilities. The method provided a flexible and dynamic basis for actions. The emergent nature of the changes and the difficulty of formalising creativity and innovation placed restrictions on the planning process. We learned that a thematic approach where each cycle is given a creative subject helped to “open up” the users in the organisation. Future research should focus on the inter-organisational nature of

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e-business strategy. If it is difficult to get top management participation, it will be even more difficult with more organisations involved.

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## **1. Introduction**

The challenge of aligning information systems (IS) decisions with business needs was discovered already in the early 1980s. For almost a decade, strategic IS planning was ranked on the top of the listings of critical issues in IS management (Niederman, Brancheau, & Wetherbe, 1991). Chan, Huff, Barclay, and Copeland (1997) and Segars and Grover (1998) show that it has not been out of the agenda since. Teo and Ang (2001) studied 138 firms and concluded that there are still many problems to be solved. The problems in launching and developing the IS strategy can be partly solved by using a comprehensive method, the problems in using the strategic plan have to be solved incrementally and that is why we propose a combined strategy.

Most of the formal methods for formulating strategic IS plans were published in late 1980s and early 1990s. While these methods provide clear steps for planning a new IS strategy, the risks associated with large special studies were also soon discovered. Thus, researchers started investigating more dynamic and incremental approaches to IS strategy formulation (Earl, 1993; Ciborra, 1994). In these approaches, explicit planning methods are seen as having only a minor role. The process is informal and rests very much on the ability of key managers to include the right people and conduct the right analyses.

With the advent of new technologies, such as Internet, the challenge of aligning IS with business is perhaps more significant and more difficult than ever. Even if the new strategies are now named e-business strategies (Hooft & Stegwee, 2001; Hackbarth & Kettinger, 2000), the basic tasks in planning are still the same: developing strategic vision, governing the projects, allocating resources, planning the infrastructure and ensuring management commitment (Earl, 2000; Venkatraman, 2000).

This paper is based on a view that the early strategic IS planning methods are too static for formulating IS strategies in the new age. On the other hand, given the complexity of issues in the planning agenda and the broad (inter) organisational implications that the new web-based systems often have, relying on a totally informal and incremental planning process involves risks as well. The objective of the four cycles method is to promote continuous planning that involves sufficient degree of formalism to ensure that all critical areas of IS planning are addressed periodically.

The paper begins with an introduction to IS strategy planning and its objectives and describes both formal and informal ways of carrying it out. It then continues to describe the four cycles method to IS strategy planning. For each cycle, relevant prescriptions, tools and outcomes are drawn from e-business planning, strategic IS planning and strategic management literature. At the end of the paper, the contributions for research and practice are discussed.

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