The third cycle: Analysing IS resources and IT infrastructure

"A new information system is rarely build upon a green field site."

Again, the cycle begins with a review of current issues and progress in implementing IS decisions and plans. Thus, if new issues have occurred after the beginning of the second cycle, they can now be addressed.

The planning during the third cycle concentrates on assessing current information and communication technology (ICT) architecture and IS skills, and in preparing for the future. The cycle can be seen as comprising the following three planning tasks:

1. Planning the ICT infrastructure
2. Planning the ICT organisation
3. Development of a preliminary project portfolio

The third cycle adds realism to planning by bringing in resource capacities and constraints under which the information systems function operates. A concrete objective is to develop a preliminary project portfolio that includes both IS development projects and projects for improving the ICT infrastructure.

Previous IS literature provides many useful analyses that can be used to support managers in these tasks. Some of them are listed below. Furthermore, table 4 describes documents that can be developed, updated and/or used within this cycle.

Weill and Broadbent (1998) provide a large selection of tools and concepts for developing an ICT infrastructure. Such tools enable development of IT infrastructure that supports strategic applications and integration of multiple businesses or functional groups. They also assist in demonstrating the value of IT investments to senior management.

Mentzas (1997) and Ward and Griffith (1996) provide a comprehensive list of tasks for making IS/IT infrastructure decisions: diagnose current state and describe functional descriptions for each process, identify functional inefficiencies, create new business process models and analyse both organisational processes and interdepartmental relations (Ward and Griffith, 1996).

Functional analysis techniques from strategic management can also be helpful in analyses (Stevens, 1997). For each core business area two questions can be asked: why is this area so important and how is it composed (noun/verb analysis). With Functional analysis diagrams a group can identify supportive IS functions (Stevens, 1997).

IS organisation and the development of human resources is an important category in the ICT infrastructure (Earl, 1989; Ward and Griffith, 1996; Galliers and Baker, 1994). A functional centralisation-decentralisation model can be used to describe the structure of the IS organisation (Robson, 1997). The rules, policies and regulations for ensuring integrity of infrastructure and information can now be evaluated and updated (Earl, 1989). Also, questions related to outsourcing of IS services can be addressed (DeLooff, 1997).

Scenario analysis can be used to formulate a preliminary IS/IT project portfolio (Schoemaker, 1995). A comprehensive analysis can involve 10 steps, starting from identification of scenario themes, stakeholders and technology trends and ending up in constructing initial scenario themes, checking for consistency and plausibility, identifying research needs and evolving towards decisions.

The infrastructure is increasingly seen as a fundamental resource that differentiates the competitive performance of firms (McKenney et al, 1995; Weill and Broadbent, 1998). Making right decisions about ICT infrastructure is a challenging task. In principle, the decisions would require multiple analyses from both technical and business perspectives. It is also obvious that the decisions have to be made incrementally, as both business needs and technology options evolve over time.

Making long-term decisions about ICT infrastructure within one comprehensive study is difficult. The advantage of the four cycles method is that the plans for ICT infrastructure and IS

organisation are updated periodically. New infrastructural challenges can be emerging and taken into account.

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