It has been noted that many of the promises of information technology (IT) have not been realized and the “productivity paradox” has seriously questioned IT investments in organizations (Brynjolfsson, 1993). It is argued here that many such failures are due to simplistic ideas about organizational development and behaviour. The change processes are dynamic and emergent in nature. Therefore, a theoretically more grounded understanding of information technology, organizations and business process change management is needed, as noted recently by Kettinger & Grover (1995).

Organizational change is usually initiated by strategic investments such as IT (Davenport, 1993). However, the ultimate value of IT/IS strategic efforts is quite impossible to achieve unless we harness the learning capacity and ability to share knowledge and views inside the organization. For example, evidence from the IS strategy research field states that implementation of IT/IS strategies is quite heavily related to human resources and organizational learning (Lederer and Sethi 1988, Earl 1993).

The question is how to investigate the holistic entity of an organization when trying to change its direction. It is clear that in IS research many of the technological options are well discussed. However, when we are dealing with vaguer issues, such as user and managerial abilities, our “nice picture” becomes more messy. Constructive, coordinated and longitudinal observation of organizations is very laborious, takes time and radically increases research costs. Therefore, tools are needed to structure and focus the research process.

Here, a conceptual framework - IS-related organizational maturity - is presented as one of the promising guidelines for studying organizational IS-related change. The framework is based on learning and diffusion theories (Auer, 1995) and offers views to evaluate both the current organizational stance and its potential for change. The components of the maturity framework are usage, management and IT. The prerequisite for a smooth organization change is that the components are in balance in their organizational context.

The use of the IS-related organizational maturity model is illustrated here with two mini-cases from the Finnish foodstuffs and retailing industries. The objective of this paper is to motivate and describe i) how to use the framework and - more importantly - ii) how to focus on certain attributes of each
maturity component.

This paper is organized as follows: the theoretical underpinnings of IS-related organizational maturity are first presented. Secondly, two mini-cases based on the model are described and the experiences gained discussed. Finally, we discuss our concluding remarks.

**IS-Related Organizational Maturity**

IS-related organizational maturity offers a conceptual framework to evaluate and understand the current stance of IS utilization (see a detailed description in Auer, 1995; Auer & Ruohonen, 1995). According to our definition "the term information systems related organizational maturity refers to a balance between the information technology being deployed, and the abilities and views to master and use information technology in an organizational context." IS-related organizational maturity definition concentrates on user-organizations. We exclude IS development and maintenance from the definition, since we are emphasizing the utilization and assimilation of IS. IS development activities are seen as external resources to be used when necessary. Our viewpoint emphasizes the idea that both user-organizations and IS management are responsible for their IS together, rather than IS being the duty of IS management alone.

IS-related organizational maturity is comprised of three components - namely usage, management and IT. The usage component implies the user-organizations' abilities to use information systems in their work. The management component mediates between IT and users and supplies the general direction in which to develop IS activities. But this interaction is twofold. Management has to be aware of technological possibilities, and at what rate an organization can achieve changes in the way it works. The IT component (i.e. hardware and software) is a platform for IS development and use.

The components give the phenomenon under study three different perspectives resulting in a richer understanding of the research problem. The different perspectives distinguish the components. For example, we may evaluate even an individual from both the management and usage perspectives. In one role an individual may support his or her work with IS. In another situation the same individual may be responsible for, e.g. an IS development project or user management.

Maturity and its components have to be understood in their context (Kling, 1987). Organizational actors and organizations form their environments - especially their internal environment. But this interaction is also two-way: the environment is the context where learning and diffusion occur. At the same time, the environment enables and disables learning (Argyris, 1990; Kim, 1993). Furthermore, studies evaluating IS generally assume that the system under study has become stable, instead of examining how the process of developing and implementing the system from its very origin affects outcomes (Kaplan, 1991; Rogers, 1983). For these reasons, internal and external factors have to be included in the analysis.

The internal environment includes organizational settings such as organizational structures, work processes, tasks and the division of labour (see Kwon & Zmud, 1987; Rogers, 1983). The external environment includes competitive forces (see Porter, 1985) and state regulations. Porter’s five competitive forces model can be used to analyse the external environment. It is still a very workable framework with which to describe the opportunities and threats that competitive forces may offer. The model summarizes the most important factors; it has nevertheless been said to concentrate on industrial level analyses and exclude macro level forces (Grant, 1991). But it is our view that Porter’s model implicitly summarizes these factors, since the macro environment affects the company indirectly through the structure of the industry.

The state of the usage component is diagnosed by analysing skills and knowledge to use IS, IS views, and actual IS usage in an organizational context. For that purpose a taxonomy including five factors is presented. The list is based on that presented by Zmud (1983) and Nelson (1991), but categories have been combined (IS-product and technical skills into IS skills, organizational overview and target organizational unit into organizational knowledge) and two classes to assess IS views and usage have been added.

**• IS usage - including frequency and amount of use**, division of usage (i.e. delegation and heterogeneity), and types of IS in use.

**• IS skills - including operational skills to use, develop and maintain IS** (from the end-user perspective), and support work tasks with IS.

**• IS knowledge - including knowledge about hardware and software concepts, IS potential, organizational IS policies and plans, and existing IS applications.**

**• IS views - including willingness to utilize IS, develop IS skills and knowledge, IS responsibilities, and views about the role of IS.**

**• Organizational skills and knowledge - including skills or knowledge about interpersonal behaviour, group dynamics and project management, objectives, purpose, opportunities, constraints, internal and external functioning and organizational links.**

The management component is evaluated by analyzing...
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