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Chapter 9

Conceptual Model for MIS Flexibility Evaluation

Masaru Furukawa
Toyama University, Japan

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INTRODUCTION

Most leading companies worldwide are striving to achieve agile management. Agility is a company's ability to cope promptly with internal and external changes, an ability indispensable for a company seeking to obtain a competitive edge. Since this ability consists in a company's quick recognition of changes, quick decision on measures to respond to these changes and quick implementation of the measures adopted, then, it is indispensable for the company to make adequate use of IT (information technology). As we know, an MIS (management information system) brings utility only though its use process, so an MIS should be easily acceptable to the organization concerned, as witness the fact that currently recommended for MIS effectiveness evaluation are the following five criteria: "High levels of system use," "User satisfaction with the system," "Favorable attitudes about MIS functions," "Achievement of objectives," "Financial payoff" (Laudon & Laudon, 1994).

But latest MISs have been growing increasingly large in scale and so has the demand for modification of existing ones to cope with rapid changes inside and outside the companies. To agilely dispose of this huge demand, therefore, an MIS should be flexible as well as acceptable.

Focusing on MIS flexibility, this paper aims to present a method for its evaluation. For this purpose, first, we will define MIS flexibility as the ability of an MIS to absorb the demands made on it to cope with changes originating from inside and outside a company." Then, defining cost and time required to dispose of these demands as the "penalty of change," we will give some consideration to this con-

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cept of penalty on the assumption that it serves as an index for quantitative evaluation of MIS flexibility and will also analyze the relationship between cost and time. Finally, we will present our evaluation procedure and end by illustrating it with examples.

MISSION OF MIS DIVISION CONCERNING DEMANDS ON MIS CHANGE

Demands on MIS Change

When an MIS division plans to change the MIS, it has one or more of the following three reasons:

1) Changes in business environment: Policy changes by a government agency, e.g., implementation of the environment accounting and the change of the consumption duty rate, etc. These have to be taken care of by the specified time.
2) Changes of SOP (standard operating procedure): Changes of management strategies and/or BP (business processes), e.g., business plans intended to enhance the rate of return on invested capital, to gain high quality information for business and management, to enhance the sweepstakes capability, to support the accomplishment of business strategies and to obtain a competitive edge, etc. Their importance and urgency to the organization depend on their contents.
3) IT innovations: Changes planned by the MIS division intending to enhance service for MIS users, e.g., new implementation of CASE (computer-aided system engineering), exchange of DBMS (database management system), etc. These are indispensable for accommodating future change demands in anticipation while using an existing MIS efficiently.

Accomplishment of these changes requires a lot of management resources (cost and time for computer throughput, storage capacity, long-term effort by experienced IT engineers). But since in reality an MIS division often fails to have a sufficient reserve of resources required, usually they cannot be expected to dispose of all change demands by the due date. A lag in MIS change (development/modification of subsystems) usually incurs a delay in accomplishment of a management strategy and/or BP change and obstructs the achievement of agile management.

Mission of MIS Division

An MIS is a system consisting of hardware and software. When the system is changed, the change entails potential system-risks (e.g., system breakdown, etc.). And when the risk is realized, it requires cost and time to restore the system. Table 1 illustrates changes of systems, system risks, and common ITs available for risk evasion.

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