Chapter IX

A Framework to Evaluate the Informatization Level

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INTRODUCTION

As information and communication technologies have rapidly developed in the 1990s, enormous changes have taken place everywhere. At work environment, these have been newer tools for increasing organizational productivity, and these are transforming organizations to the degree that *Taylorism* once did (Davenport, 1998). These trends have spread over various fields of society, and have over countries caused economical and cultural innovation and reformation. These phenomena can be summarized as *informatization*. Informatization is defined as "converting the main goods and energy of a social economy to information through the revolution of high data communication technology and utilizing information produced by gathering, processing and distributing data within the vast fields of the society" (National Computerization Agency [NCA], 1997).

Since The United States' NII project has been evaluated as one of the important success factors for economical growth, most countries have considered informatization as one of the most effective means for improving a nation's competitiveness. Similarly, many organizations have considered informatization as a strategy to improve quality of public service and productivity. They have tried to implement informatization and extensive investments are often budgeted and expanded to acquire information technology (IT).

An Information Strategy Plan (ISP) is needed at first to implement informatization of an organization. ISP usually includes business strategy, information technology strategy, project priorities, and an organization's structure strategy. Thus, when an ISP is set up, it describes whether the business or organization's strategic goals and objectives can be achieved through IT, in which field further IT investment will be needed, and whether efficient investment in IT will be made. In order to discuss these topics, the current organization's informatization level first must be known.

Moreover, since the middle of 1990, many countries have put emphasis on performance based management, in which the government has to set up investment plans according to its performance. For example, to budget IT, it is required to first evaluate its performance and results.

In this respect, evaluation of an organization's informatization level in order to review how much organization informatization it achieves is an important managerial concern.

However, this is not a simple problem because informatization includes many intangible factors such as the quality of information and an organization's culture.

In this chapter, framework and metrics are introduced to evaluate the organization's informatization level. This framework is designed to provide reasonable information by gathering and analyzing various IT metrics for determining whether organizations have made efficient and effective use of IT and have achieved the organizational strategic goals and objectives through IT. Therefore, the evaluation results can be used to improve the organization's informatization level.

The remainder of this paper is organized as follows: in the following section, some case studies and background information are presented. The next section introduces a framework, and then future trends are discussed in the next section. Finally, the summary and conclusion are presented.

BACKGROUND

Similar to other countries, Korea has been actively pursuing its vision and goals through informatization since the early 1990s, and will continue to do so. The Information Promotion Master plan was formulated following the Basic Act on Informatization on Promotion (BAIP) in 1996. According to this national master plan, every public organization such as the government, cities, agencies and so on, has established their Information Strategy Plan (ISP) and started to implement IT. The government has allowed a large budget for constructing infrastructure and implementing application software to improve quality of public service and productivity of government.

Recently, the government and public organizations have been interested in how their investments in IT have been made effective and efficient. Although the measurement of the performance of the government is more difficult than that of the business or private companies, where the investment strategy is more easily determined as the way to maximize its benefit, governments nevertheless need to evaluate their outcomes and use them to set a new strategy. They have placed more emphasis on evaluating their informatization level, and are interested in benchmarks to set up their baseline to improve their informatization and IT performance. Based on this circumstance, the development of evaluation methodology was required. To do this, some projects related to evaluation of IT were reviewed.

The first one is about benchmarking. For developing IT budgets and setting IT priorities, it might be helpful to check out how other companies are dealing with these topics. To that end, Dr. Rubin (2000) collects exclusive data which have coverage of key IT metrics and organizational trends, and publishes *The Worldwide Benchmark Report*. Schwarz (2000) stated that companies benchmark all kind of things, but one of the most valuable benchmarks can be the business results. They include measurements such as ROI, return on assets, IT spending per employee, etc. As IT becomes more important to companies, senior executives are demanding that their managers justify the expenditure, which requires measurement of IT productivity. Benchmarks of IT productivity involve analyzing revenue per employee as a function of IT spending per employee. Therefore, with various measures and metrics, benchmarks can alternate as an evaluator. Among Rubin's exclusive data, the following benchmarks are important: work profiles, work by maintenance type, life cycle distribution, language usage, support rates, new development productivity, defect rates, software process maturity, tool inventories, techniques inventories, staff profile, budget, and technology infrastructure/IT priorities (Rubin, 2000).

Since 1996, the Maxwell School of Citizenship & Public Affairs at Syracuse University has performed a project, called the Government Performance Project (GPP), which rates

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