Chapter 6
DNA Model of IT Service Assets

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ABSTRACT

In this paper, the service assets (resources and capabilities) associated with Information Technology (IT) services are investigated through a DNA (Dynamic Network Analysis) model. An illustrative example for IT services is analyzed using the model. Specifically discussed are the relationships among Agents, the Knowledge and Resources that Agents require to perform their job Role, and the Tasks that the Agents perform during the execution of their job Role. Selected resulting metrics are detailed and the managerial implications are presented for improving the efficiency and effectiveness of organizational process.

INTRODUCTION

Information Technology Service Management (ITSM) is a discipline for managing information Systems (IS). In contrast to technology-oriented approaches to IS management, ITSM focuses on the customer's perspective (Galup, Dattero, Quan, & Conger, 2009; Beachboard, Conger, Galup, Hernandez, Probst, & Venkataraman, 2007) using a set of specialized organizational capabilities for providing value to customers in the form of services (Lynch, 2006). ITSM defines

an IT service as a means of delivering value to customers by facilitating outcomes customers want to achieve without the ownership of specific costs and risks (Lynch, 2006, p. 16). This view assumes that customers seek outcomes but do not wish to be accountable for the associate risks and costs.

ITSM employ people, processes, and technologies to deliver services that are of value to the customer (Van Bon, et al., 2007, pp. 18-20). Resources and capabilities are types of service assets that organizations use to create value as shown in Figure 1. Resources are direct inputs for producing value, while "capabilities represent an organization's ability to coordinate, control, and

Figure 1. Resources and Capabilities Relationships (Taylor, Iqbal, & Nieves, 2007, p. 39)
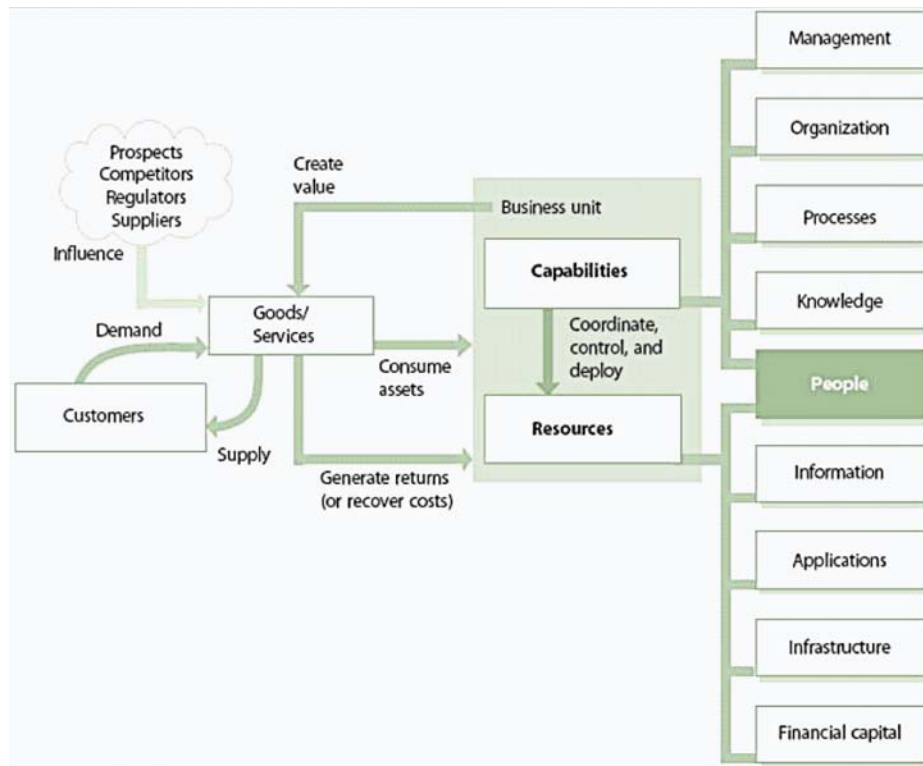
deploy resources to produce value" (Taylor, Case, & Spalding, 2007, p. 38). Resources and capabilities are closely tied in the value creation cycle as follows -- (1) the ability to obtain resources (2) allows an organization to create an organizational strategy and (3) invest resources to develop capabilities (4) enabling the organization to create distinctiveness (5) which increases its ability to obtain resources (Van Bon et al., 2007).

There are five types of capabilities -- Management, Organization, Processes, Knowledge, and People. Management cultivates, co-ordinates, and oversees other asset types through leadership, administration, policy, performance, regulation, and incentives. Organization provides the structure through hierarchies, groups, teams, social networks, etc. (Taylor, Iqbal, & Nieves, 2007).

Processes consist of actionable or transformational items such as algorithms, methods, procedures, and routines. Processes are executed

by people who utilize their knowledge and skills. Once an ITSM process is defined, it should be documented and controlled to ensure that the process can be repeated and managed. If the output conforms to a set norm, the process can be considered effective because the process is repeatable and can be measured and managed. If the process activities are carried out with a minimum use of resources, the process can also be considered efficient (Taylor, Lloyd, & Rudd, 2007, pp. 42-43). Business process modeling (BPM) is often performed so that the current process may be analyzed and improved. A recent comparative analysis on process modeling approaches found that Business Process Modeling Notation (BPMN) was the most comprehensive of the techniques analyzed (Recker, Rosemann, Indulska, & Green, 2009). One shortcoming of BPMN is that knowledge and organizational processes are interconnected (Papavassiliou &

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