Chapter VIII

Procedure for Mapping Information Flow: A Case of Surgery Management Process

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Abstract

This chapter considers information flow an important dimension of information quality and proposes a procedure for mapping information flow. The surgery management process (SMP) of a public hospital is used as a case in which to illustrate the steps of the developed procedure. The chapter discusses the issues that make information mapping of SMP a challenging task and explains the difficulties associated with traditional process mapping techniques in determining the interdependencies and information flow within and between various elements of SMP activities. The proposed procedure integrates a structured process mapping technique known as IDEF0 with another structured technique referred to as dependency structured matrix (DSM) to map the information flow within SMP. The chapter indicates that it is possible to reduce feedback from other activities that affect the performance of SMP by administratively controlling the information flow through certain activities of SMP.
Introduction

Information has become a critical component of business operations (Sen, 2001). Today’s technology allows businesses to collect and analyse “enormous volumes of information and manipulate it in different ways to bring out otherwise unforeseen areas of knowledge” (Abbott, 2001). Managers make decisions based on information available to them, and misinformed people tend to make poor decisions (Fisher & Kingma, 2001). An information flow system providing quality information in terms of completeness, relevancy, timeliness, and accessibility of information plays a major role in supporting the decision-making process. Information mapping depicts information flow between various entities of a process. Several studies (Bosset, 1991; Evans & Lindsay, 2002; Fadlalla & Wickramasinghe, 2004) stress the importance of process mapping and emphasise the role information flow plays in improving the decision-making process. This chapter considers information mapping as a component of two dimensions of information quality. These are the contextual dimension and the accessibility dimension.

This chapter deals with information mapping of the surgery management process (SMP) in hospitals. Surgery is performed in operating theatres which are equipped for the performance of surgical operations (TheFreeDictionary, 2006). However, SMP is not limited to the activities taking place within an operating theatre. SMP begins when a general practitioner, physician, or specialist determines a patient’s need for a surgical procedure and ends when the patient is discharged from hospital after surgery has been performed. Accordingly SMP is a hierarchical process comprising several stages. Each stage includes several operations and each operation can be divided into activities.

Several studies (District Commission, 2002; New Health, 2002; Schofield, Rubin, Piza, Lai, Sindhusake, Fearnside, & Klineberg, 2005) stress the importance of process mapping and emphasise the role of information flow in improving or redesigning the surgery management process. This chapter deals with process mapping of SMP and provides a conceptual procedure for mapping the information flow throughout the stages of SMP. It divides SMP into seven stages: preadmission, admission, preassessment, perioperative, procedure (or the surgery), postoperative, and discharge.

Dimensions of Information Quality

Customers view quality in relation to differing criteria based on their individual roles in the production-marketing chain (Evans & Lindsay, 2002). Thus it is important to understand the various perspectives from which information quality (IQ) is viewed. Wang (1998) finds an analogy between quality issues in product manufacturing and those in information, and further asserts that information manufacturing can be viewed as a processing system acting on raw data to produce information products. Wang urges organisations to manage information as they manage products if they want to increase productivity. Based on the analogy of Wang, information quality can be viewed by information consumers from various perspectives as “fitness for intended use,” or as “meeting or exceeding customer expectations.”

Just like quality management of physical products, IQ has multiple dimensions. IQ dimensions refer to issues that are important to information consumers. However, there are no uniform lists of IQ dimensions as illustrated in Table 1. The choice of these dimensions
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