Chapter 49

Maturity and Metrics in Health Organizations Information Systems

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ABSTRACT

This chapter discusses the issues and choices that researchers and technicians should consider when adapting maturity models to healthcare organizations needs. It discusses the practical utilization of maturity models, including different manners of exploring a model's usefulness. For a more complete understanding of maturity models and their applicability, the selection of criteria and processes of measurement, called metrics, is briefly reviewed in terms of indicators and daily procedures. Finally, some issues of management information systems security are briefly addressed, along with a note on measuring security assessment.

1. INFORMATION SYSTEMS MATURITY MODELS: DIMENSIONS AND CONCEPTUALIZATION

1.1. Is Maturity an Easy Concept?

Applied to the field of information systems, the concept of model is not easy to explain because of the set of information complexity and diversity of uses that these systems may have at the services of healthcare organizations, in particular to support of medical decision making processes.

Many organizations are using several methods and techniques to examine and improve their current maturity level of Information Technology (IT). Although IT evaluation studies based on IT maturity stages have been conducted widely, the stages theory has not been confirmed through statistical testing. IT evaluation activities can present managerial implications to an enterprise by determining where it stands within the stages theory. The results of some studies tend to indicate the meanings and the opportunity of newly defined five stages of IT maturity: initiation, recognition, diffusion, control, and integration (Leem et al., 2008; Davis, 1992; King & Kraemer, 1984).

Information Systems (IS) and consequent advances have always been essential elements for
organizations functioning and development, but nowadays the characteristics, the differentiation and the overload of data, technical information and equipments demand that IS assets should be managed in an explicit and intelligent way, moving towards maturity levels. A maturity model is a structured set of elements of any nature that has the characteristics of processes, practices, procedures, and protocols. This set is arranged by levels of specific subsets of elements that an organization must have to achieve a certain maturity level.

Before gaining organizational value from operational users, it is necessary that managers know which is their level of maturity in a given situation, who produces solid and mature information and how it can be maturely used. Information Systems Maturity also integrates a set of processes to locate, to evaluate, to get and to share information throughout all the organization. The process maturity framework is incremental, but maturity requires a long-term commitment.

Health data is one of the most vital, strategic assets hospitals and other healthcare organizations possess. They depend on this complex set of different data to develop adequate services, make critical strategic decisions, protect property rights, push marketing initiatives, manage projects, process transactions, attract potential clients, and generate revenues. Large amounts of critical data are created and patients’ hospital records are compiled automatically, manually, and stored in the records department for retrieval whenever needed.

It has not always been easy to describe what “good recordkeeping” looks like. Yet, this question gains in importance as regulators, shareholders, and customers are increasingly concerned about the business practices of organizations. Some recordkeeping principles would be needed in order to guide records management professionals in designing comprehensive and effective records management programs. These principles can help multi-national organizations to establish consistent practices across a variety of business units.

An important question can be placed: how can a maturity model be used? A model of this kind can help the health organization to evaluate their recordkeeping programs and the practical procedures that are used daily. A detailed account of the practices of the health organization enables players to make an initial analysis of the maturity of information management. But it is important to note that the maturity model represents an initial assessment. A requirement for greater efficiency and a more thorough analysis of organizational policies and practices may be needed.

The maturity model will be more useful to decision makers who want to achieve maximum benefit from the implementation of policies for information management. The effectiveness of the control of information requires ongoing attention. But to begin, healthcare organizations can look for the following steps:

- Identify gaps between current practices and the organization’s desired level of system maturity;
- Assess the risk (s) for the organization, taking into account the gaps analysis;
- Determine whether the additional information and analysis is required;
- Develop priorities and assign responsibility for program development.

Issues in Information Systems: In a strictly logistical cooperation, information systems do not present a priori any particular difficulties when they do not affect the data subject to special protection. However, in case of cooperation on a medical-technical activity, the strong link between activity and support the patient involves the use, management, or sharing personal medical information, subject to secrecy. Let us imagine a set of institutions for cooperation in medical biology, which focuses on the sharing of activities and technical means, namely applications for processing biological data and its storage. In this context, this cooperative group will manage all
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