Chapter 1.17
Healthcare Knowledge Management

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INTRODUCTION

The healthcare environment is changing rapidly, and effective management of the knowledge base in this area is an integral part of delivering high-quality patient care. People all over the world rely on a huge array of organizations for the provision of healthcare, from public-sector monoliths and governmental agencies to privately funded organizations, and consulting and advisory groups. It is a massive industry in which every organization faces a unique combination of operational hurdles. However, what every healthcare system has in common is the high price of failure. Faced with the prospect of failing to prevent suffering and death, the importance of continuously improving efficiency and effectiveness is high on the agenda for the majority of healthcare organizations (Brailer, 1999). Taking also into consideration that the amount of biological and medical information is growing at an exponential rate, it is not consequently surprising that knowledge management (KM) is attracting so much attention from the industry as a whole.

In a competitive environment like the healthcare industry, trying to balance customer expectations and cost requires an ongoing innovation and technological evolution. With the shift of the healthcare industry from a central network to a global network, the challenge is how to effectively manage the sources of information and knowledge in order to innovate and gain competitive advantage. Healthcare enterprises are knowledge-intensive organizations which process massive amounts of data, such as electronic medical records, clinical trial data, hospitals records, administrative reports, and generate knowledge. However, the detailed content of this knowledge repository is to some extent "hidden" to its users, because it is regularly localized or even personal and difficult to share, while the healthcare data are rarely transformed into a strategic decision-support resource (Heathfield & Louw, 1999). KM concepts and tools can provide great support to exploit the huge knowledge and information resources and assist today's healthcare organizations to strengthen healthcare service effectiveness and improve the society they serve.

The key question which remains is the following: *How can we make knowledge management work in healthcare?* The answer is given in the following sections.

The Healthcare Industry: A Brief Overview

The health care industry is one of the largest single industries all over the world and the largest one in the United States. It has increased by over 65% since 1990 and is expected to double by the year 2007.[1] The IT industry is strategically positioned to become a powerful ally to the healthcare industry as it strives to adopt well-managed cost-efficient strategies. Advanced information technologies can give healthcare providers the opportunity to reduce overall healthcare expenses by lowering the costs of completing administrative and clinical transactions. Nevertheless, in comparison to other industry sectors, the healthcare industry has been slow to embrace e-business solutions and other advanced information technologies, as presented in Table 1.

The same study revealed that the healthcare industry spends substantially more on overhead and computer facility maintenance than other industry sectors. In 1997, for instance, the healthcare industry allotted 12% of its budget to maintain existing infrastructure—6% more than the industry norm. The high level of investment in this area by healthcare organizations indicates that many providers operate with the aid of old systems, which require constant repair and maintenance.

At this stage, it is worth emphasizing that the healthcare context differs from other information systems application domains in that it often concerns sensitive and confidential information and leads to critical decisions on people's lives (or quality of life). Thus, stakeholder conflicts have more of an impact than in other areas such as business, trade, and manufacturing. Healthcare is an area with quite intense differences of values, interests, professional backgrounds, and priorities among key stakeholders. Given the complexity of the context, health informatics in general cannot simply focus on technical or information systems aspects alone. It has to take account of their relationship with clinical and managerial processes and practices, as well as deal with multiple stakeholders and organizational cultures and accompanying politics.

Concluding, it should be stressed that healthcare is not only a significant industry in any economy (Folland, Goodman, & Stano, 1997), but also a field that needs effective means to manage data as well as information and knowledge. Man-

Table 1. Percentage of IT implementation in industry (Computer Economics, 1999)

Industry Sector	% in Place
Transportation	57.2
Banking and Finance	52.9
Insurance	48.1
State & Local Government	37.5
Trade Services	36.8
Retail Distribution	35.5
Process Manufacturing	34.9
Discrete Manufacturing	33.3
Wholesale Distribution	33.3
Utilities	26.9
Federal Government	25.0
Healthcare	21.8
Professional Services	21.7

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