Chapter 10
Realising the Healthcare Value Proposition
The Need for KM and Technology

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ABSTRACT

Succinctly stated, the healthcare value proposition revolves around access, quality, and value. Healthcare organizations globally are struggling to realize this value proposition with the U.S. being the country noted for having the most expensive rather than the highest value healthcare system. The following discusses how KM and technology can facilitate the attainment of the healthcare value proposition.

INTRODUCTION

Healthcare is a growing industry. Between 1960-1997 the percentage of Gross Domestic Product (GDP) spent on healthcare by 29 members of the Organizations for Economic Cooperation and Development (OECD) nearly doubled from 3.9-7.6% with the US spending the most -13.6% in 1997\(^1\) and today the US spends nearly 20% (Wickramasinghe et al., 2008). Hence, healthcare expenditure is increasing exponentially and reducing this expenditure; i.e. offering effective and efficient quality healthcare treatment is becoming a priority globally. Technology and automation have the potential to reduce these costs (America Institute of Medicine, 2001;
Wickramasinghe, 2000; Wickramasinghe and Schaffer, 2006); thus, the adopting and adapting of technologies and new techniques throughout the healthcare industry, appears to be the way to stem these escalating costs currently facing the healthcare industry worldwide. The adoption of data mining coupled with knowledge management techniques and strategies appears to be a prudent option for healthcare organizations. This is demonstrated by firstly highlighting the current challenges facing healthcare and presenting the key quality areas that need to be addressed as underscored by the Committee on the Quality of Healthcare in America. Then a brief description of knowledge management, the major types of knowledge and the knowledge spiral is given. Next the role of data and information in healthcare is presented before describing data mining and its role in the knowledge discovery process as well as how it can enable the knowledge spiral to be realized is outlined. Following this, the power of data mining is illustrated by applying the techniques of data mining to a healthcare data set. This serves to highlight the benefits of data mining and knowledge management to healthcare by showing that through realizing the knowledge management spiral with data mining not only is it possible to adhere to the healthcare quality aims stated by the Committee on the Quality of Healthcare in America but it is also possible to support and enable superior clinical practice and administrative management throughout healthcare; thereby, making data mining and knowledge management strategic imperatives for this industry. Finally conclusions are drawn.

CHALLENGES CURRENTLY FACING HEALTHCARE

Healthcare is an important industry that touches most, if not all of us. Healthcare is noted for using leading edge technologies and embracing new scientific discoveries to enable better cures for diseases and better means to enable early detection of most life threatening diseases. However, the healthcare industry globally, and in the US specifically, has been extremely slow to adopt technologies that focus on better practice management and administrative needs (Wickramasinghe and Mills, 2001; Wickramasinghe and Schaffer, 2006).

In the final report compiled by the Committee on the Quality of Healthcare in America (America Institute of Medicine, 2001), it was noted that improving patient care is integrally linked to providing high quality healthcare. Furthermore, in order to achieve a high quality of healthcare the committee identified 6 key aims; namely, 1) healthcare should be safe – avoiding injuries to patients from the care that is intended to help them, 2) effective - providing services based on scientific knowledge to all who could benefit and refraining from providing services to those who will not benefit (i.e. avoiding under use and overuse), 3) patient-centered – providing
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