Chapter 9
Adoption, Usage and Efficiency:
Benchmarking Healthcare IT in Private Practices

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ABSTRACT

In the past few decades various industries have adopted new information systems and supply chain management techniques. Unfortunately, although many industries saw significant gains, the health care industry—both large hospitals and small private practices—are slow to consider new technologies. According to the Health Care Information Technology Model (HCIT) and the Supply Chain Operations Reference (SCOR) Model, a necessary aspect in planning and applying new IT and supply chain techniques is the ability to compare and benchmark the organization. Whereas some research is available for hospitals (Malin, 2006), little work has been done for private medical practices. In this paper, the authors benchmark IT practices in terms of staffing efficiency and importance of usage to compare medical practices in the United States and Taiwan. The authors develop a set of efficiency measures for private medical practices that they correlate with types of IT usage, barriers to IT usage and extent of IT usage.

INTRODUCTION

We've got 21st century medical practices but 19th century paperwork system. Doctors are still writing prescriptions by hand. So there's a better way to enable our health care system to wring out inefficiencies and to protect our patients. So medical electronic records is going to be one of the great innovations in medicine. (George Bush, National Institute of Health, Cleveland, Ohio, January 26, 2005).

According to the White House, most American industries are spending approximately $8,000 per worker for IT, but the health care industry is investing only $1,000 per employee. (Roy Mark, January 27, 2005).

Some grocery stores have better technology than our hospitals and clinics. (Tommy Thompson, US Secretary of Health & Human Services (Turner, 2006).

U.S. healthcare providers can learn a thing or two about IT best practices by checking out other countries (Sukel, 2007).

In the last few decades various industries have adopted new computer technologies, and especially technologies related to information systems. Unfortunately, "the adoption of information technology in medicine has been slower than in industry" (Sobol & Woods, 1999). While many industries saw significant increases in productivity, effectiveness and efficiency, and considerable costs reduction, which allowed them to become even more competitive, the health care industry—both large hospitals and small private practices—are very slow even to consider new technologies. Why?

Many studies have been conducted to look at the reasons behind reluctance to implement IT in healthcare. Unfortunately, while researchers concentrated their efforts on large hospitals, HMO's, and large multi-hospital health care organizations, the barriers for adoption of information technology in small to mid-size group medical practices have been overlooked. This is unfortunate because traditional research on Information technology adoption has been divided into three categories (Venkatesh, 2006). It has been studied at the individual level, (Venkatesh, Morris, Davis & Davis, 2003) group level (Sambamurthy & Chen, 1994) and organizational level (Fichman & Kemerer, 1997). Each of these can inform the other. This is especially true in the healthcare arena where private practices band together into large practice groups that have admitting privileges at various hospitals. Thus the potential interactions and conflicts between private practice IT usage and Hospital usage would seem to be an obvious one.

As Kouveles, Chambers and Wang (2006) point out "glaring inefficiencies which remain in fields such as Health Care, Transportation Logistics and Disaster Relief demonstrate the great and immediate need for supply chain management (SCM) researchers to find better and faster ways

to translate research findings into firm behavior" (p. 464). Robinson and Malhotra (2005) find that even though philosophies of quality management and SCM have been researched extensively few have studied these agendas jointly. We propose here to combine benchmarking between two countries to search for more efficient ways to handle IT applications in healthcare.

In this paper we incorporate the results of previous research on barriers to IT usage within hospitals (Sobol, Humphrey & Jones, 1992; Sobol & Smith, 2001) and group practices (Sobol & Prater, 2006) with the results of a recent survey of 102 private group practices in the U.S. and 73 private group practices in Taiwan. This paper also provides an initial snapshot of many of the research areas recently broached by Venkatesh (2006). For example, IT adoptions can cover the various categories of service suggested by Weill and Olson (1989): transactional, informational and strategic. In more recent years Weill and Broadbent (1998) have added building infrastructure capability to the mix although these types of investments are important mainly in relation to their ability to facilitate the transactional, informational and strategic issues of information technology. We provide initial survey findings of these issues.

Extent of use of technology is an important issue in understanding group and individual adoption of business processes (Ventrakaman, 2006). Another issue that has not been considered thoroughly is interventions to foster success. We have asked our respondents about extent of training and whether there were IT champions in the organization who helped to adopt new technologies. Of course, the adoption of medical technology is particularly enmeshed with multiple stakeholder problems. In the hospital particularly there are stockholders, doctors, nurses, administrators, insurance companies and separate units with different equipment that must "buy off" on all major technology adoptions. In private practices there are also factions that must be included in the

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