Chapter 16
Success of National Healthcare Services Information Systems:
The Multi-Dimensional Views

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ABSTRACT

Due to the rising awareness of national health insurance services and the wide-spread use of information systems, the implementation of National Healthcare Services Systems (NHSS) becomes an important objective to the countries in the world. However, it is not an easy task to implement such a large-scale system because we often counter a great number of managerial problems. This study identifies influential factors and constructs a model from the dimensions of user characteristics, organizational context, and system characteristics for explaining National Healthcare Services Systems (NHSS) success in Taiwan based on the survey of 1215 public healthcare workers. Several key findings have been proposed. First, eight salient factors were influential to NHSS success. Second, the NHSS is not a typical type of IS, since it is designed to provide accurate health information to support the routine NHS activities. The results demonstrate that information quality is the most critical factor in influencing system use and user satisfaction. Third, this study found that service quality has a strong and positive effect on system use and user satisfaction. Fourth, to increase system use and user satisfaction, this study suggests that the NHSS provider should communicate closely with its users to gather information about their needs and preferences, and pay more attention to each individual for providing quality service. It is hoped that the findings of current study can assist governments in other countries in developing more effective NHSS and better e-Government practices.

INTRODUCTION

The development of information technology in facilitating the healthcare services has become a top priority to governments in the world. Waterson (2014) studied the UK's National Health Service, and pointed out that the future development of Health Information Technology (HIT) will be socio-technical oriented. National healthcare services (NHS) is the management policy of healthcare services affairs that deals with the issues of long-term healthcare, disease prevention, and generic health services at the national level. It can be considered as a large scale application that can influence the well-being of people from different social levels. In the U.S., the healthcare expenditure consumed 16% ($1.9 trillion) of the nation's gross domestic product (GDP) in 2004; and is further projected to grow to 17.7% by 2012 (Bhattacherjee, Hikmet, Menachemi, & Kayhan, 2007; Smith Cowan, Heffler, & Catlin, 2006). In the U.K., £12-£20 billion was spent on the national programme for IS to facilitate the applicability of global healthcare and the performance of NHS (Avison & Young, 2007). Investment in IS for handling NHS affairs is prevalent in developed countries.

Likewise, in terms of the developing countries, for improving the quality and effectiveness of the national services to their citizens, the governments in most countries are searching an effective and modern way to conduct national information exchange (Ndou, 2004). The government in Taiwan had invested in developing NHS from 2000 to 2004, and the expenditure rapidly increased from $569,236 to $664,698 (in millions) (Bureau of Health Promotion, 2006). However, the results showed that governing such huge national healthcare system was difficult. The lack of IS assistance would cause many kinds of troublesome management issues (Avison & Young, 2007; Khoumbati, Themistocleous, & Irani, 2006).

National healthcare services systems (NHSS) is a type of e-Government information system in modern administrative practices for providing information needed by public healthcare workers, and helping the managers in NHS have better control (Jeffcott & Johnson, 2002; Khoumbati et al., 2006). The development of NHSS is driven by the needs of public healthcare workers and the impact of complex organizational functions. Despite the information system having been commonly applied in many areas, with many failed applications, its development is relatively slow and difficult in the management of NHSS (Avison & Young, 2007; Hendy, Reeves, Fulop, Hutchings, & Masseria, 2005). To understand and measure the factors affecting the success of NHSS is becoming increasingly important for managing the government's national healthcare services affairs, and it is thus necessary to conduct research on this issue.

Recently, there have been vast amounts of research concerning traditional admin/business IS and healthcare information systems (HIS) (Chang, Chang, Ho, Yen, & Chiang, 2011; Lee & Shim, 2007), but few of them focus on NHSS, particularly understanding how it can be successfully implemented.

Measuring NHSS success is a complex and difficult task because the implementation of NHSS has the characteristics of user heterogeneity and inter-organizational features at different levels of public healthcare centers. Numerous studies suggest that the D&M model has become a prevalent and popular mean for measuring IS success (DeLone & McLean, 2003; Iivari, 2005; Wu & Wang, 2006). From the viewpoint of quality perspective, the DeLone and McLean IS success model (D&M model) seems to be a sound framework and the basis of measuring NHSS success. However, the implementation of NHSS is different from other IS in business and distinct from HIS in common hospitals since it possesses the NHSS feature of user heterogeneity and inter-organizational collaboration. Therefore, the assessment of NHSS success is more than the story of evaluation from a system characteristics, the ability of the updated D&M model in explaining the complex factors of NHSS success is questionable. A multi-dimensional view seems to be a better approach for measuring the success.

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