

# Chapter 1

## Towards an Evaluation Framework for E-Health Services: Evaluating Criteria from Users Perspective

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### ABSTRACT

*The purpose of this study is to explore the user's perspective in evaluating e-health services, and to present evaluation criteria that influence user's utilization and satisfaction of e-health services. The evaluation criteria are based on two lines of studies relating to the behaviour of users of new products or services and on broad examining and critical analysis of the existing evaluations initiatives in e-health context. The evaluation criteria can serve as part of an e-health evaluation framework, and also to provide useful tools to allow the development of successful e-health initiatives by assisting the healthcare organisation to address areas that require further attention.*

### BACKGROUND

Globally, the healthcare services are considered to be the biggest service industry, and they are taking top priority, receiving enormous investments, and are growing at a rapid pace in most developed countries (Mitchell, 2000; Pan American Health Organization, 1999)

E-health, which are basically enabled and driven by the use of information and communication tech-

nologies in healthcare have the potential to change the healthcare industry worldwide in terms of their infrastructures, and the costs and quality of services (Wickramasinghe and Misra, 2004; Wickramasinghe and Goldberg, 2004).

E-health is a very broad term encompassing various activities in an evolving field. As such, for practical reasons, in this paper the used definition is the one that has been adopted by the World Health Organization. According to the Organisation, E-health can be defined as 'being the leveraging of the information and communication technology (ICT) to connect

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provider and patients and governments; to educate and inform healthcare professionals, managers and consumers; to stimulate innovation in care delivery and health system management; and, to improve our healthcare system' (Hans Oh et al. 2005).

E-health evaluation may be carried out during planning, development, or operation of an e-health system (Brender, 2006). The purposes of e-health evaluation are also varying from one case to another. For example, the purpose could be to encourage the use of information systems in healthcare through assessing the risks and benefits for both users and government institutions (Friedman and Wyatt, 2000), or the purpose could be to provide the basis for the decisions about an e-health system under investigation or its implementation context (Brender, 2006).

E-Health evaluation involved many stakeholders, users being the most important (Gustafson & Wyatt, 2004). Therefore, assessing e-health from users' perspective should address all the key factors that influence the users' acceptance to the new adopted technologies including the risks and benefits associated with the design and implementation of the e-health initiative in specific contexts.

The research in the area of information systems evaluation in general and e-health evaluation in particular is a complicated and difficult subject (Friedman and Wyatt, 2000; Serafeimidis and Smithson, 2000; Peffers and Saarinen, 2002). The complexity and difficulty lies in the challenges faced at the intersection of three areas, each well-known for its complexity; healthcare services, information systems, and evaluation methodologies.

Healthcare services are well-known to be a complex domain. This is related to the fact that healthcare is a safety-critical area, dictated by complex regulations especially those that apply to manage directly patients information, medical knowledge itself and methods of healthcare delivery which are changing rapidly (Friedman and Wyatt, 2000)

Information systems and their evaluation is also another complex domain, especially when considering both the social and technical context of their use. This is due in great part to the opinion that information systems research and e-health systems as a part of it, is a social science as much as an information systems science (Mingers, and Stowell, 1997). The case of e-health is even more complicated, as its social aspects have greater impact on the system success or failure than any other information system.

The final and more important challenges are the complexity and difficulty of establishing evaluation methodologies, while the evaluation domain is suffering from the limited experience of using methods, the unfamiliarity with evaluation techniques and the difficulty in interpreting results (Ballantine et al. 1999; Farbey et al. 1999; Powell, 1999).

The main aim of this study is to explore the users' perspective in evaluating e-health services and to present evaluation criteria that influence users' utilization and satisfaction of e-health services. The evaluation criteria can serve as part of e-health evaluation framework, and also to provide useful and necessary tools to allow the development of successful e-health initiatives by assisting the healthcare organisation to identify and thus address areas that require further attention. The selection process of the evaluation criteria will take into account the challenges faced at the intersection of the three areas, healthcare services, information systems, and evaluation methodologies.

## **THE RESEARCH APPROACH**

To explore the users' perspective in evaluating e-health services and to present the evaluation criteria that influence users' utilization and satisfaction of e-health services, it is imperative to select a relevant research approach that takes into account the general aims of the research study.

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