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CULTURAL DIFFERENCES AND EMR EXPERIENCES: FROM THE USA TO THE UAE AND THE UK

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ABSTRACT

Electronic medical record (EMR) has gained increasing attention in the healthcare industry worldwide. Unfortunately, the adoption rate has been slower than what healthcare practitioners and IT professionals would expect. While various issues have recently been raised concerning hospitals' and physicians' EMR challenges, this research proposal specifically focuses on cultural differences in those healthcare organizations' and practitioners' EMR experiences. More specifically, a four-layer cultural framework is proposed and discussed. In addition to traditionally perceived national and organizational cultures, the framework further distinguishes institutional and group cultures that might also interact with other cultural elements and healthcare organizations' EMR experiences. Six organizations situated in three culturally contrasting countries with comparative external environments, business purposes, managerial values, IT services, and organizational sizes are selected as potential study sites. An interpretive case study is further proposed to help investigate complex interactions involved in this research phenomenon. With a more comprehensive perspective on cultural effects and emerging nature of EMR systems, empirical research contribution, upon the project's completion, is thus anticipated.

Keywords: electronic medical record, EMR, culture, case study, healthcare.

INTRODUCTION

Electronic medical record (EMR) is an emerging information system designed to maintain clinical information in electronic databases and in turn to reduce medical errors and improve healthcare quality [1]. Recent IT phenomenon such as Y2K and emerging healthcare institutional movements in the U.S. such as HIPAA (Health Insurance Portability and Accountability Act) and IOM (Institute of Medicine) reports over the years have increasingly urged, if not forced, healthcare organizations to adopt EMR [2]. Economically, with comprehensive clinical functionalities such as laboratory testing, problem diagnosis, allergy alerts, medication references [3], EMR are perceived to have great potential for reducing healthcare operations cost [4]. Some analysts specifically suggest that EMR implementation can save \$84,000 USD for clinics over a five-year period [5]. An interoperable EMR network can save \$81 billion USD annually for the healthcare industry [6]. Other benefits of EMR include efficiency improvement, particularly for smaller clinics [7], error prevention [8], and satisfaction enhancement for patients [9]. However, despite years of advocacy, EMR has not yet penetrated the healthcare institutions as information technology (IT) professionals or healthcare enthusiasts would long expect. More specifically, a survey reported in 2003 showed that only 5% of hospitals have adopted EMR [3]; another survey in 2009 further reported that only 9.1% of hospitals studied have adopted EMR and a comprehensive EMR was merely implemented in 1.5% of them [10]. These statistics implicitly hint that certain barriers and challenges must have been faced by healthcare organizations. Interestingly, the literature has long investigated obstacles commonly faced by physicians and hospitals in the EMR implementation process. For example, in the 1990s, there were major concerns about end users' (i.e. physicians) readiness and acceptance of the technology. Computer experiences, computer anxiety, and perceived organizational support were suggested to influence how physicians accept this emerging technology [11]. Patients' data privacy and confidentiality are also cited as two common concerns [4] [12]. Other studies further pointed out that while physicians and clinics have general concerns about high initial costs and uncertain payoffs, factors such as technology difficulties, complementary support, and physicians' attitudes are underlying barriers that impede a more prevalent diffusion of EMR in the industry [1].

While these studies might help contribute to initial understanding of the EMR literature, what has not been understood is that how these factors play their roles in different healthcare systems. This research proposal thus seeks to investigate contextual differences in various healthcare organizations' EMR decision making and implementation experiences. More specifically, a four-layer cultural framework is proposed and different layers of cultural interactions among one another and with EMR experiences are discussed. The proposed cultural framework intends to examine cultural effects at four different levels (i.e. national, institutional, organizational, and group), which could offer future studies a more comprehensive understanding of cultural effects in EMR experiences in particular and electronic business in general. Upon completion, this project thus has potential to provide valuable insights into consistency and/or disparities that might exist in various EMR systems and in turn help healthcare organizations better evaluate their EMR implementation processes.

CULTURAL IMPACTS

The IT and management literature have increasingly suggested that adopting the same business or IT model for organizations in different cultural systems is problematic because cultural elements could significantly shape organizational structure and business/IT practice which in turn might affect organizational performance and outcomes [13]. More specifically, at the

national level, cultural elements have been found to significantly affect information security policy making and practice [14], individual users' behaviors on self-service technology usage [15], and an enterprise's technology alliance formation [16]. At the organizational level, cultural factors have also been found to distinctively shape an organization's adoption decisions of high-tech products in general [17] and ERP (Enterprise Resource Planning) in particular [18], significantly influence an organization's knowledge management [19], and directly link to successful implementation of information systems [20]. Harper and Utley (2001) further reported that cultural attributes of autonomy, trust, teamwork, information sharing, and flexibility show high positive coefficients for successful IT implementation while rule orientation, compliance, carefulness, preciseness, and predictability demonstrate high negative correlations with IT implementation success. In contemporary globalized, networked business world where multiple cultural systems often co-exist, a better and more specific understanding of cultural differences in business practice and IT management will thus be imperative [15].

Culture is defined in sociology as collective behavior and shared values practiced and recognized by a group of actors [21]. These commonly sanctioned behavior and values guide actors' interaction among one another [22] and in turn shape their collective identity in everyday life [23]. Without such normative guidance, actors would lose their senses of 'who I am' and 'how should I behave' [24]. In comparison with other groups or communities, these underlying social norms distinguish members in one group from those in another [25]. At the national level, these distinctive cultural elements are traditionally categorized and understood in four dimensions: uncertainty avoidance, power distance, muscularity, and individualism [26]. In other words, behaviors and shared values of members in one country can often be understood and analyzed by how members deal with power and uncertainty in life and the degree to which they act and interact with one another in muscular (vs. feminine) and/or individualistic (vs. collective) fashion [14]. At the organizational level, studies of cultural characteristics tend to focus more on how members perform their routines internally such as communication and collaboration with other organization members and how they respond to external environments such as industrial movement or technological changes [25] [27]. When members demonstrate enthusiastic behavior and agile response to environmental changes, an organization is often categorized as more prospective; when organization members, by contrast, tend to comply with rules and structures and focus mainly on existing market values and profits, an organization is mostly classified as bureaucratic and defensive [28].

Although these frameworks offer an overall guidance of cultural studies in business and/or IT practice, the complexity of cultural characteristics require our further understanding of institutional and group differences. Institutional theorists have long argued that organizations often act to gain social recognition as well as cultural and political fitness in their institutional fields [29]. It is likely that organizations situated in the same institutional landscape would act in a similar fashion which is commonly recognized within the institution and could be best understood only by institutional members themselves [30]. Members in certain institutional fields such as the healthcare sector that have distinctive regulations and professionalism would likely to demonstrate a greater tendency to share such cultural understanding and practice [31]. At the group level, organizations members' behaviors in social interaction, group collaboration, power control, and interpersonal relations are often guided by their collective norms [25]. Even within the same organizations, different functional units or project groups might still demonstrate different cultural traits that distinguish themselves from other groups/units and in turn create misunderstanding among one another [32]. Typical tension between IT and user groups [33] and politics and user resistance in IT implementation [34] are some of those examples.

This research project thus proposes a four-layer culture framework to investigate cultural interactions with EMR experiences (Figure 1). National and institutional cultures are considered external effects while organizational and group cultures are internal characteristics that interact with an organization's EMR experiences. The premise of the framework is that organizational experiences of EMR in particular and electronic business in general are shaped and reshaped by these cultural elements internally and externally. The process through which these cultural elements affect an organization's EMR experience is essentially unknown and thus becomes the focal point of the proposed investigation. In addition, certain interactive effects might exist between different layers of cultures. For instance, group culture might be shaped and reshaped by each layer of organizational, institutional, and/or national cultures. Similarly, organizational culture might also interact with institutional and/or national cultures while institutional culture might be shaped and/or reshaped by national culture as well.

These interactions and their effects on EMR experiences are summarized in Figure 1 below. Four layers of rectangles indicate different dimensions of cultural environments and suggest that smaller (inner) cultural elements are embedded within greater (outer) ones. Organizational and group cultures are highlighted because they are essential elements of an organization's actions. The highlight also attempts to distinguish internal settings from external environments. Due to space constraints, the sizes or types of arrows, however, do not represent strengths of interactions but merely illustrate directions of those effects. Bidirectional arrows further imply interactive (instead of causal) effects among different cultural environments and with an organization's EMR experiences, which largely focus on decisions and implementation.

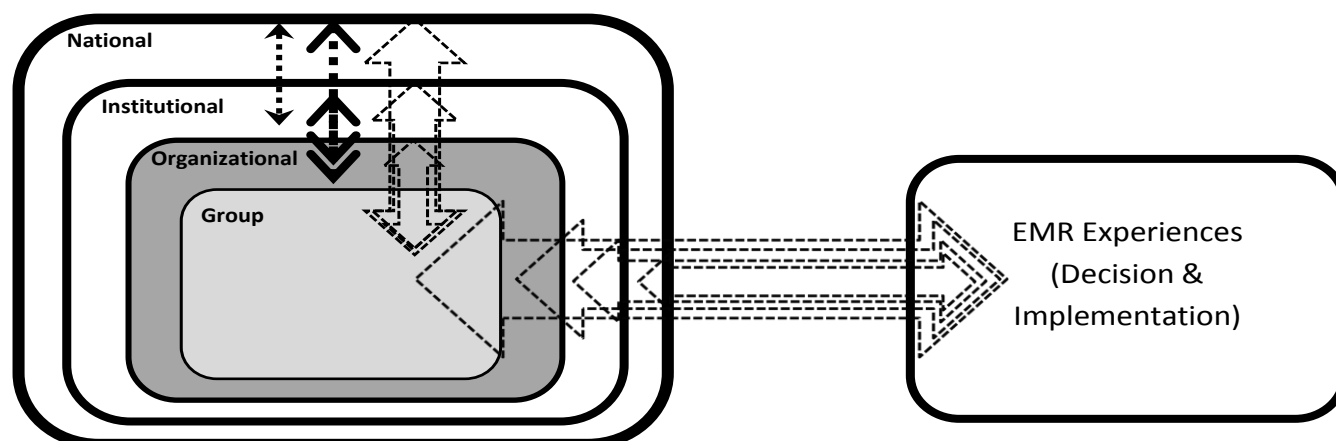


Figure 1. Four-Layer Cultural Interactions and EMR Experiences

METHODOLOGY

Case Study

The emerging nature of the research topic and the multifaceted complexity of cultural interactions and their relations with EMR experiences require an in-depth investigation of factors involved. At the current phase, my intention is thus to first conduct an interpretive case study of six healthcare organizations situated in three countries and different institutional landscapes. While interpretive research helps disentangle multifaceted issues involved and provide authentic insights for research phenomenon investigated [35], case study methodology is most suitable for investigation that is situated in well-defined boundaries [36] and attempts to analyze ‘why’ and ‘how’ questions [37].

Six organizations under consideration, all given pseudonyms in the proposal, are expected to represent four layers of cultural elements and potentially their interactive effects. The first two organizations, Alpha and Beta, are located in one of major metropolitan areas in the U.S. The third and fourth organizations, Gamma and Delta, are from one of major cities in the UAE while the fifth and sixth organizations, Zeta, and Eta, are situated in one of major urban areas in the UK. Although these organizations all reside and compete in the healthcare industry, their geographic areas, population density, demographics backdrop, and business environments provide contrasting institutional landscapes.

Study Sites

The first study site, Alpha, is a non-profit hospital with almost 900 beds. It has been voted on multiple occasions by Fortune as one of the “100 Best Companies to Work For” and by U.S. News & World Report as one of “America’s Best Hospitals.” Its large centralized IT department has enabled the hospital to gain various technology and innovation recognition over the years. The second study site, Beta, traditionally recognized as a community medical center with approximately 180 beds, merged with a large healthcare system in the U.S. and became a small branch of this for-profit hospital chain. Its IT department was recently outsourced to the headquarter’s IT partner and its IT services has subsequently become centralized.

With about 450 beds, the third study site, Gamma, is a local hospital of a large government healthcare agency in the UAE. Due to the headquarters’ centralized IT services and the nature of governmental sponsorship, Gamma’s internal culture can be categorized as centralized and bureaucratic. The fourth study site, Delta, by contrast, received direct sponsorship from military forces and housed nearly 370 beds. Although it has abundant resources for IT services, Delta’s internal characteristics is also largely shaped or constrained by its governmental and/or military nature.

The fifth organization, Zeta, is one of leading hospitals in the UK with approximately 800 beds. The hospital, largely funded by the government, has enjoyed its long tradition and reputation of healthcare innovation and academic partnerships since its establishment decades ago. The last organization, Eta, is a small branch of a large non-profit, private health charity in the UK. With 28 beds, Eta is specifically dedicated to certain healthcare services for a suburban community near one of major cities in the UK. As a relatively small healthcare center of a large healthcare systems, Eta’s IT services are predictably centralized by the corporate IT systems.

These organizations are selected because they could provide comparative insights for four-layer cultural interactions discussed previously. In addition to different national culture and institutional landscapes, these organizations also contrast one another in size (large vs. others), business purpose (profit vs. nonprofit), sponsorship (public vs. private), and IT services (independent vs. centralized). On the one hand, it inevitably increases difficulties in contrasting multiple factors embedded in the four-layer cultural framework. On the other, its potentials for providing analytical insight to various EMR scenarios are highly anticipated.

CONCLUDING REMARKS

Prior studies have examined cultural effects on various business practice and IT management. Most of them only focused on either the elements of national or organizational culture and thus failed to distinguish various properties of institutional and group cultures. Moreover, the existing empirical knowledge tends to assume one-directional effect, that is, cultural impacts on IT management. As Chen (2007) pointed out, IT implementation can also reshape cultural elements in recognizable and/or unexpected manners. In other words, cultural relations with IT projects are most likely to be interactive; as cultural elements affect IT project, the IT projects often reshape cultural norms in return. These interactive effects are depicted by the four-layer cultural framework discussed earlier. Although Figure 1 specifically proposes cultural interactions with an organization's EMR experiences, the framework itself can also be applied to other IT projects situated in different cultural landscapes. Fruitful research venues can thus be expected.

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