Perfect Match? Generation Y as Change Agents for Information Communication Technology Implementation in Healthcare

Kwang Chien YEE a,b,1, Erin MILLS a,b and Caroline AIREY c
a Royal Hobart Hospital, Tasmania, Australia.
b eHealth Services Group, School of Information Systems, University of Tasmania.
c Royal Brisbane Hospital, Queensland, Australia.

Abstract. The current healthcare delivery model will not meet future healthcare demands. The only sustainable healthcare future is one that best leverages advances in technology to improve productivity and efficiency. Information communication technology (ICT) has, therefore, been touted as the panacea of future healthcare challenges. Many ICT projects in healthcare, however, fail to deliver on their promises to transform the healthcare system. From a technologist’s perspective, this is often due to the lack of socio-technical consideration. From a socio-cultural perspective, however, there is often strong inertia to change. While the utilisation of user-centred design principles will generate a new wave of enthusiasm among technologists, this has to be matched with socio-cultural changes within the healthcare system. Generation Y healthcare workers might be the socio-cultural factor required, in combination with new technology, to transform the healthcare system. Generation Y has generated significant technology-driven changes in many other industries. The socio-cultural understanding of generation Y healthcare workers is essential to guide the design and implementation of ICT solutions for a sustainable healthcare future. This paper presents the initial analysis of our qualitative study which aims to generate in-depth conceptual insights of generation Y healthcare workers and their view of ICT in healthcare. Our results show that generation Y healthcare workers might assist future ICT implementation in healthcare. This paper, however, argues that significant changes to the current healthcare organisation will be required in order to unleash the full potential of generation Y workers and ICT implementation. Finally, this paper presents some strategies to empower generation Y workers as change agents for a sustainable future healthcare system.

Keywords. Socio-technical integration, qualitative research, organisational culture

Introduction

The healthcare system is at a cross-road. Advances in technology over the last few decades have improved the delivery of care and significantly improved life expectancy.

1 Corresponding Author: Kwang Chien Yee, School of Information Systems, University of Tasmania, Private bag 87, 7001, Hobart, Tasmania, Australia.; E-mail: kwang.yee@dhhs.tas.gov.au
This legacy, however, is now the biggest challenge in maintaining a sustainable, high quality healthcare system. Our patient population is ageing rapidly and the care deliveries of patients with multiple co-morbidities have rapidly increased in complexity [1]. In the coming decades, the healthcare system will have to undergo the biggest transformation of any industry in history in order to deliver best quality care to the community [2]. Furthermore, the increasing emphasis and utilisation of multidisciplinary care creates the need to improve communications and information exchanges among various healthcare professionals [3]. As resources to deliver care are not unlimited, the current healthcare delivery model will not be sustainable in the near future. The only sustainable future for healthcare delivery is one that best leverages technology to improve productivity and efficiency.

ICT implementation in healthcare, however, has not so far delivered on its promise to improve efficiency and safety of healthcare delivery [4]. Significantly, many information technology projects in healthcare fail [5]. When the failures of ICT are analysed in detail, it becomes clear that the problem is not related to the technology itself, but the lack of socio-technical consideration [6]. There has been a recent proliferation of various user-centred design techniques which claim to achieve better socio-technical integration [6] [7]. Future emerging technologies, armed with socio-technical integrated design, will likely lead to a level of renewed enthusiasm in the electronic transformation of future healthcare [8].

From the socio-cultural perspective, there is an equally powerful force which will transform the healthcare system: the entry of generation Y clinicians. Generation Y is commonly defined as those born after 1978 [9]. This generation of young workers has created big impacts in other industries [10]. Their entry and the impact of their entry on the healthcare system are slowly being acknowledged. Their familiarity with technology is likely to influence healthcare organisation to embrace the digital future. Is generation Y the socio-cultural answer to the prayers of enthusiastic health information technologists? Will the combination of emerging technology and generation Y healthcare workers create the momentum necessary to drive us towards a sustainable healthcare future? It is therefore essential and timely for us to investigate the impact of generation Y workers on ICT implementation in healthcare.

The paper firstly describes our qualitative methodological approach to generate in-depth understanding of generation Y healthcare workers. The results to date are then presented. This paper presents the argument that generation Y phenomenon is the golden opportunity to propel electronic transformation of the healthcare system. There are, however, many challenges that healthcare systems will need to face in order to best leverage the potential of generation Y workers. This paper aims to contribute significantly to the health informatics field by presenting some potential solutions through the lens of generation Y to empower this generation of healthcare workers to contribute to the sustainable digital future healthcare.

1. Methodological Approach

Given the new socio-cultural experience created by generation Y in other industries [9], it is imperative that the healthcare system takes generation Y seriously. Firstly, the future design and implementation of ICT within the healthcare system needs to take generation Y into account. Secondly, and more importantly, as generation Y slowly
replaces the ageing healthcare workforce, an in-depth socio-cultural understanding of generation Y is required in order to create a sustainable healthcare future.

Given the scanty literature available on this topic, the main aim of this pilot exploratory study is to generate in-depth socio-cultural understanding of generation Y doctors within the current healthcare setting. This research project has the following objectives:

- To generate an understanding of the impact of generation Y on healthcare.
- To understand the perception of ICT in healthcare among generation Y-ers.
- To generate guiding principles to involve generation Y as change agents for ICT implementation in healthcare.

In order to obtain a holistic understanding regarding the socio-cultural issues of generation Y, we deploy qualitative research methodology, applying interpretivist epistemology as our research philosophy. We use a three-stage approach in order to generate complex socio-cultural contextual insights. Given the technological orientation of generation Y, the researchers take this opportunity to explore the possibility of undertaking technologically-supported qualitative research. The data recorded are analysed using Giorgi's descriptive phenomenological method [11].

The detail description and justification of our research methodological approach has been published elsewhere [12]. Multiple steps have been built into our methodological approach in order to answer the call for improved rigors of qualitative research [12]. A brief description of our research methodology is provided here.

1.1. First Stage; Familiarisation Phase

This phase of the research carried out in 2006, involved the utilisation of ethnography and semi-structured interviews techniques. One of us had the privilege to work with 15 generation Y doctors and especially had the privilege to work closely with five of these doctors at different period of time as a team to deliver healthcare services. These five doctors became the key informants and the other ten doctors became informants of this phase of study, at which social interactions and interviews were documented; especially when it was perceived that these generation Y doctors exhibit certain behaviours to display their cultural believes. The “thick description” method described by Clifford Geertz was utilised in the event-triggered documentation [13]. These field notes, taken over the 12 months period in 2006, were then analysed using Giorgi’s descriptive phenomenological method [11].

The researcher then carried out ten semi-structured interviews with final year medical students. Field notes were taken during the interviews. The interviews were recorded if the interviewees agreed to the process. The transcript of the interviews were analysed using the Giorgi’s descriptive phenomenology methodology [11].

1.2. Second Stage: Longitudinal Semi-Structured Email Interviews

The second phase of the study involves a longitudinal follow up study of generation Y doctors in 2007. All generation Y interns at the Royal Hobart Hospital who are willing to participate in the study were sent weekly emails for the first month and then monthly emails for 12 months. Each email contained five open-ended questions as essential questions. The first response to the email will be screened for the need for clarifications and probing. The analysis of the answers will be carried out within three days and
clarifications will be sought from responders if needed. The data collected will be coded and analysed using Giorgi’s descriptive phenomenological method, by generation Y doctors [11].

1.3. Third Stage: Traditional Interviews at Two Separate Sites

Phase three of the study will be carried out at two separate sites late 2007. All generation Y interns at the Royal Hobart Hospital will be invited to participate in a face-to-face interview. These interviews will be audio recorded and transcribed. This same process will be carried out at a different site to a different cohort of generation Y medical doctors by a separate generation Y researcher. The same research questions and techniques will be used. The data will be coded, analysed and interpreted by the two researchers separately.

2. Results

We have completed the phase 1 study and in the process of carrying out phase 2 and phase 3 of the study. This paper will present results from phase 1 and part of phase 2 data. Our results identify five key characteristics of generation Y doctors, which will affect future ICT design and implementation in healthcare.

Firstly, generation Y doctors are technology savvy. Generation Y doctors are not only familiar with technology but also have strong belief in their ability to rapidly adapt to technology. They, however, prefer to use technology that they are familiar with, rather than cutting edge technology. Generation Y doctors welcome new technology implementation as it provides the necessary simulation and challenges that are vital to the perception of job satisfaction for generation Y. Secondly, generation Y doctors gather information on a ‘PRN’ basis – they want on-demand information and education relevant to what they are doing right now. Electronic means form the most common way of information gathering and obtaining decision support. Google is included in the list of resources that junior doctors learned the most from during their internship year! Online resources provide the bulk of resources used in everyday work and for ongoing education. The expectation of gen. Y doctors is that these resources are made available to them by healthcare organizations. They want these resources to have efficient search engines to provide fast, reliable, relevant, sufficiently detailed and up-to-date information. In generation Y terms: “U get info U wnt 2 ur mates only. ;)

Thirdly, our results suggest that one of the top priorities for Generation Y doctors is a well-balanced lifestyle with plenty of life experience. They thrive in environments that are highly stimulating and those which will challenge them. Generation Y doctors are likely to move regularly from one institution to the other in search for better education, training and life experience. While they acknowledge the current ICT systems are different at different institutions, they do not believe that they need training to adapt to new ICT. They believe that the system design should be “user-friendly” enough for them to adapt without training.

Fourthly, generation Y doctors have very high expectations for ICT in healthcare. They expect that new ICTs continue to be designed and implemented to improve workplace efficiency and to reduce their workload. Furthermore, Generation Y doctors expect well-designed ICTs to be available for utilisation in their working environment;
in their terms “user-friendliness just like google, you don’t need to learn and yet you
can find what you want.”

Finally, generation Y doctors expect the organisations they work for to provide
them with adequate hardware and software. They expect desktop computers to be
available in sufficient quantities and in appropriate locations, each with high-speed
internet access. They also feel that healthcare institutions should provide them with
personalized, portable computers such as Personal digital assistants (PDAs) with
wireless technology. More importantly, despite their very high expectations and
demands regarding ICT, Generation Y doctors dissociate themselves from the design
and implementation of new ICT. They do not believe that they could participate and
assist in the socio-technical integrated design of ICT, nor do they see it as their role.

3. Discussion

Generation Y healthcare professionals have many characteristics which makes them
powerful change agents within the healthcare sector for ICT implementation. They are
not only technology savvy, but they have great confidence in technology. Generation
Yers are confident in their abilities to adapt to new technologies, and they welcome
new challenges. Generation Y doctors will demand and expect organisations to provide
them with well designed ICT solutions to support their work. This will generate
significant momentum to fasten the pace of ICT adaptation and implementation within
the healthcare system. As significant shortage of healthcare professionals continues to
spread across the world, employers have to be creative in recruitment and retention of
staffs. It seems likely that one of the strategies to recruit and retain generation Y
doctors is the implementation of ICT to automate many routine tasks.

Generation Y will move from one institution to another in search of new
experiences and a better lifestyle. The biggest challenge faced with different
institutions is the acquisition of tacit knowledge to effectively fulfill their roles. The
fluidity of generation Y workforce combined with their desire for technology will
motivate institutions to implement better ICT supported organisational tacit knowledge
management strategies.

The more important effect of generation Y in the healthcare, however, is the ripple
effect generated by the combination of generation Y doctors and well designed
technology. The enthusiasm of Generation Y doctors using new technologies to
improve the effectiveness and efficiency of healthcare delivery will affect the
perception of ICT implementation by senior clinicians. If this powerful combination is
leveraged appropriately, a “bottom-up” approach to ICT adaptation will ensure.

The concept that generation Y professionals might be the change agents for ICT
implementation in healthcare is very attractive to health informatics professionals. This
concept, however, faces some steep challenges in real-world. Firstly, generation Yers
have high expectations of potential benefits of technology. The current available
technology might not fulfill the expectation of generation Y professionals. Furthermore,
Generation Y professional cannot fulfill the role of effective change agents within the
current healthcare organizational structure. The healthcare system is traditionally a
hierarchical organization with senior members making critical decisions and the junior
doctors providing the bulk of patient care. The technology gap and generation gap are
widening between generation Y doctors and senior clinicians. More importantly,
organizations, with strong hierarchical tradition will likely to expect generation Y to conform to the culture rather than embrace new changes.

This might explain our observation that generation Y doctors are reluctant to participate and assist ICT design as they lack the autonomy and authority required to be heard. There is a strong need to re-engineer the healthcare hierarchical system in order to best leverage the potentials of generation Y workers. Generation Y workers need to be given the necessary autonomy and be involved in every step of the design and implementation process. In fact, some generation Y healthcare professionals should be encouraged to become leaders to assist ICT design and implementation. Our approach of utilising generation Y doctors as researchers in order to conduct and present research through the lens of generation Y highlights one of these strategies to empower generation Y healthcare professionals for a sustainable digital future!

4. Conclusion

In this paper, we presented our views of changing socio-cultural factors in healthcare. We presented our methodological approach to investigate this socio-cultural change: the entry of generation Y into the healthcare system. We presented our results to date on the potential socio-cultural impact of generation Y on ICT implementation in healthcare. We argued that generation Y workers carry with them many characteristics which allow them to be engaged as change agents for a sustainable digital future. There are many challenges in engaging generation Y in ICT implementation. The most important challenge of all is the hierarchical medical tradition, which prevents them to effectively fulfill that role. There is an urgent need to re-engineer the healthcare system in order to empower generation Y and listening to our view is a good start!

References