Requirements and barriers for making an e-Health strategic management and economical model

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Abstract

This dissertation aims to illustrate main requirements and barriers for making an e-Health model. We emphasized on a basic World Health Organisation’s (WHO) definition and selected experiential strategic planning under discussion as a well-suit pattern for the e-Health care system. The resource based strategy was considered to present a holistic framework for an e-Health strategic planning. Further, an economical sub-model was essential to cover finances such as Return on Investment (ROI) and Technical Issues. While, there are many information management advantages, we have noted some problematic issues to highlight e-Health barriers. Since, we faced three main factors such as human, ICT and investment resource in e-Health care system, therefore, we selected two research methods. Both qualitative and quantitative methods were used to present social and natural science too. To do this, twice we conducted interviews with 75 e-Health experts. Finally, the holistic and conceptual model and financial sub-model were designed.

Keywords: Road map of strategies; e-Health strategic planning; core philosophical perspectives; ROI strategy.

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1. Introduction

Developing countries represent a large part of the world and many of these countries are working hard to benefit from the IT revolution and become an effective part of the information society. Realising the importance of information health system, as we will discuss in the literature review, has led to many models and frameworks being developed to build up an efficient e-Health system. Few emphasise however, on the special characteristics and barriers in developing countries in which most of them do not follow a holistic approach for solving e-Health problems. The main question is what management and economical model is well-suited for e-Health? The purpose of this dissertation is to investigate the considerations for design and development of an e-Health strategic plan for Iran healthcare system. This research aims to examine e-Health strategic requirements, in order to develop a holistic framework for analysis to design such a strategy.

2. Literature review

Rumi (1273), with his most famous elephant and darkroom’s story offers the light as an approach to see the elephant in a new way. This is similar example for better understanding of multidisciplinary research. It was necessary to define a whole category as a first milestone, and then enlist a reliable light as a research methodology, to combine the relevant parts of puzzle (Gharajedagh, 2004).

In addition, according to De Wit and Meyer (1995), before thinking about strategic planning, it is essential to focus on the dimensions of strategy to clarify a narrow shape of our destination regarding an enterprise or an organisation’s purposes. In their research, De Wit and Meyer referred to all scholars of strategic planning to find those dimensions. They have defined them within what they call the three words of strategy, these are ‘process, content and context’ (De Wit and Meyer, 1995).

The recent advances in ICT sectors have encouraged many governments, investors and customers in developing countries to become involved in planning for e-Health. In doing so, it is necessary to address current health views, aims, visions, missions, strategies and policies and capacities for planning towards the e-Health mission in order to use e-Health advantages through Information Management (IM) to give better healthcare services to patients and other stakeholders (British Colombia, 2011). In fact, e-Health is an extremely broad topic, encompassing the many different domains of information and communication technologies responsible for supporting many aspects of healthcare provisions. Over the past couple of decades, the rise in health care expenditure, the burden of the ageing population, and the growing expectations of citizens are all contributing towards large-scale restructuring in the way that healthcare is provided and supported via use of ICT in developing countries (Black, Anandan, Cresswell, 2008). Whilst previous adoption of ICT in healthcare has been largely in the implementation of distributed systems, it is now apparent that a more holistic approach to e-Health strategies is required both locally and on national levels in order to move toward a new successful model of healthcare (Pagliari, Sloan, Greg implemented and would have considerable advantages for e-Health. For example, they would be considered within designing.
As it is shown in the above diagram, we have selected two important notions for discussion; economics and management. Then, the context of this research (Riazi 2009) will be presented to the Ministry of Health, Medical and Education (MOHME). In addition, several kinds of strategies could be selected based on the organisations parameters, such as culture, size, environment and nature of leadership within the organisation (Kenny, 2006). Now these controversial theoretical foundations need to design a road map as a narrative way in order to make way in these notions of the research. It should be noted that it is just a holistic framework for Iran’s e-Health strategic planning (Makhmali, 2012a) so this framework will need to generate all holistic strategies and consider deploying strategies as well. Whiles, these strategies are resource based such Human, ICT and Capital, it could be planned on goals based or scenario oriented to have some real goals and applied scenarios for that.
The above framework illustrates an important cycle based on the research we conducted; it has been designed in accordance with the Deming Cycle (Deming, 1980), which is a pragmatic process to the deployment of e-Health planning. The first stage will be conducted in medical universities and teaching hospitals and will be a pilot study that will contain a period of trial and error with no doubt. The Deming cycle has been updated to include independent advisors that will provide reports on each section of the process. The stakeholders will be divided into governmental and non-governmental. In this initial framework, the Ministry of Health, Medical and Education (MOHME) will be the main trustee for implementing e-Health in Iran. As we have highlighted, finance and investment remain as an important issue in regards to e-Health implementation. Return on investment (ROI) is a problematic issue, and so we want to highlight some key considerations in regards to ROI (Makhmali, 2012b).
As we discussed one of the most important issues regarding investment for e-Health is the assessment of ROI. It is a difficult and controversial subject, and one in which we have tried to address by asking three fundamental questions:

a. How much investment will be needed to implement e-Health in Iran?
b. When will we see a return on that investment?
c. How much of the investment will be returned?

As we do not have clear information on financial issues in regards to e-Health projects, and we have no example in which we can use to assess investment, we must devise a road map for policy makers that relate to issues regarding ROI. There are many forms of ‘returns’ on an investment, not all of which can be easily
measured. We can however make assumptions that physical returns will be made on saving money in areas like paper; however, areas that we consider to be intangible are things like saving fuel and increasing efficiency (Eysenbach, 2001).

Further to this, some issues are metaphysical, such as having satisfied patients. Coming back to the return on investment covering tangible, intangible and semi tangible areas, it is worth mentioning that many investors would consider investment in e-Health highly risky.

Now, we will note some of the most important problems and limitations during this research.

3. Problem description

This project has been multidimensional and as such it has addressed a number of problematic issues that cannot be solved in a one dimensional way. In the case of e-Health strategic planning we face issues regarding engineering, physicians, management and financial requirements, which will all need to be considered when implementing e-Health. Facing a variety of issues requires the use of separate research methods which then allows us to integrate these and build a consensus. This process was assisted by the use of differing philosophical approaches. Some key challenges were:

- The most important problem is to define “e-Health” because this topic is so vast and there is no consensus between authors on a specific definition. Therefore, we had to develop a general definition of e-Health from this research to highlight some fundamental aspects of strategic planning.

- There are some countries with best practices, and lessons can be learned from them as the world’s e-Health pioneers in using such experiential models (Butterfield, 2011).

- But we cannot adjust to all situations within the context of our research project, especially in the case of a developing country such as Iran.

- We could not find an economical model for predicting return on investment (ROI) in e-Health projects because of complicated and different functions of independent variations.

4. Methodology

When we face an inter-disciplinary research topic, we have to divide our research project into several phases, and more often not to replace our philosophical glasses at different phases. For example, it should be noted that when we want to research about ‘human’ and ‘technology’ as two symbols of social and natural science we must recognise both phenomenon based on ontology with the use of the ‘what’ question (Tabatabaei, 1954). Furthermore, if we want to conduct more research about ‘human’ aspects that relate to social science, we can apply a hermeneutic approach, and if we have to discuss in regards to technology or discuss sub-sets of natural science which will require observation, it should be approached in positivistic way (Blaikie, 1993: 15). Now, one of the most important notes that need to be commented upon is how philosophic schools can show and determine our approach to strategy and research. For example, if we want to research through social science, first, we have to choose a suitable philosophic school of thought, such as Hermeneutic. Secondly, we need to select a logical approach of research such as inductive, an approach that was advocated by Emile Durkheim (1858-1917)
cited in Blaikie, 1993:135). Finally, a strategy is needed to conduct our research, for example, action research based on problem solving (Jayanatra, 1994) within cross-section interview.

After choosing our research topic, such as social science, we can now show the research process. This will help us to respond to the questions we have highlighted earlier as what, why and how. Incidentally, due to the subject being multi-dimensional, it is possible to choose two or more philosophical schools of thought, as well as different methods, approaches and strategies. As we have mentioned, the philosophical school is at the core of the research process and it determines the next stage, such as a qualitative method, inductive approach, and action research strategy. Hermeneutic is a new generic of the interpretive school, as such it does not show differences between historical hermeneutic processes (Makhmali, 2012c).

After collecting data through a 21 questions interview with 40 people who are Iranian’s e-Health experts within standard protocols (Makhmali, 2012d) and analysis of outcome we could design our model in social science section. In natural science also with 35 interviewees within 12 ranking questions as factors to know more about tangible, semi tangible and intangible indicators, we completed the research. In the other phase, we have selected a well-suited philosophic paradigm in the core of this conceptual research approach that is compatible with other research stages, such as hermeneutic for social science and positivism for natural science. Further to this, the two dimensions of natural and social science were discussed and considered along with the differing approaches, methods, strategies and techniques that could be used. In order to fully cover this multidimensional topic our research continued and was followed in two ways, inductive and deductive.

One of the most important criteria in assessing decision making at a managerial level, is to assess the qualitative data through a positivistic research philosophy. Therefore, we would change our research to a qualitative approach with a philosophic research method, as the economic view will be related to natural science.

5. Results and discussion

According to Rumi’s view (Gharagedagh, 2005) in order to see the all parts of an elephant in a dark room one will need candelight, Mintzberg also supports this notion as he argues ‘we are the blind people and strategy formation is our elephant’ (Richard, 1999). In this dissertation our elephant in the room is the strategic plan of e-Health and the way in which we can ‘see’ this entity is through Wit and Meyer’s use of finding a combination of content, context and process. Strategic planning is the crystallisation of many issues that we have mentioned such as economic and management issues. We faced a number of limitations in collecting data, which we reviewed, but this did not stop us in our mission to consider management and economic issues in our framework for e-Health strategic planning.

In the next stage, we provided a narrative map to analyses a number of issues that would affect our research methodology and how we would use action research to achieve the objectives and aims of this research. In line with work done by Wit and Meyer, we adjusted our research process to be compatible with core philosophical perspectives that would justify our data collecting technique and allow us to build a strategic plan of e-Health for Iran.
According to Mintzberg (Mintzberg, 1987) one should apply a pattern and plan if a strategy is to be implemented, bearing this in mind we reviewed Iran’s legal documents as a way of supporting this method. As e-Health issues cover both IT and health topics we had to examine both issues separately in order to assess whether there could be any potential benefits of using IT within healthcare. We have also studied a number of developed countries that had implemented e-Health so that we could take some of the benefits and pitfalls from their experiences and use this to design an e-Health strategy for Iran. As the deployment of e-Health in Iran would involve the assessment of various resources we focused on what we perceived to be the three most important, HR, ICT and capital resources. The main focus of this research was to build a vision towards e-Health implementation in Iran, this was widely influenced by the World Health Organisations identification on what e-Health was and how it was used in other states. Based upon this we tried to apply our own vision to that of strategic planning and used a pattern approach based on hermeneutic methods through action research, which was applied to the social science aspect of our research. Further to this, we reviewed relevant legal documents that related to policy making within Iran, this came from Iran’s five year plans; we then used these findings to draw a comprehensive map of the health system in Iran. We then followed up by collecting data from health experts in the MOHME and linked our findings to the legal documents we found, once this had been completed when we looked to other countries within examples of e-Health so that we could build a holistic plan of e-Health in Iran. We did not mention critical rationalism or realism, but we did use these in the development of our framework.

According to standard protocols for collecting data within a semi-structured interview, we first designed 21 questions consisting of eight approaches related to e-Health strategic planning. In order to give basic information that relates to the research we identified the main experts such stakeholders and divided them into three levels; executives, senior managers and professionals. After completing the interview, we sent the outcome to each interviewee and asked them for a validation on the data and feedback on the interview.

After gathering the data we found that there were some common key comments (Boyce and Neale, 2006), and we felt that this would be helpful in making a basic holistic picture of e-Health strategic planning, by considering, reviewing and analysing data for Iran.

This data shows the main stakeholders views in the Iranian Healthcare system, here we intend to show a flowchart between the provider, purchaser and observer, as well as integrate other information relevant to the Iranian Healthcare system. After which we will begin to analyse some of the problems within its structure.

6. Conclusion and future works

According to the aim and objectives of this research and based on research processes that focus on strategy, we designed a holistic framework for e-Health strategic planning in Iran. This e-Health strategic framework was designed based on our research methodology, theoretical foundation, current e-Health programs and lessons learnt from pioneer countries. In the first stage of research strategy we conducted a literature review of the approaches and conducted interviews with executives, management and professionals in Iran’s healthcare system. We have collected data that relates to our focus on strategy of change, which is based on
realistic and strategic requirements such as Human Resources, ICT Resources and Investment Resources. By doing this, we were able to show original concepts of e-Health and then confirmed perceptions through conducting interviews with experts in the field.

The content and context of this framework was focused on a literature review, requirement of constitution consideration, a socioeconomic and cultural development plan through a comprehensive map of the health system, all of which helped us to draw a scientific map that enabled us to provide a holistic image of Iran’s e-Health requirements. Furthermore, we reviewed some documents of pioneers of world e-Health systems such as UK, Canada, USA, France and Austria, which was helpful in assessing the real limitations and opportunities of implementing e-Health. Then, in order to get comments and confirmation, we have conducted interviews with experts which also involved us assessing the main stakeholders in Iran’s e-Health system. Finally, we could not assess Return on Investment (ROI) in order to clear a road map for investment in e-Health projects. It should be noted about assessing some dimensions in ROI issues such as tangible, semi-tangible and intangible within future works.
References