Public Policy and Administration Research
ISSN 2224-5731(Paper) ISSN 2225-0972(Online)
Vol.4, No.8, 2014

E-Readiness: A Crucial Factor for Successful Implementation of E-Health Projects in Developing Countries Like Pakistan

Qamar Afaq Qureshi[1] Dr. Allah Nawaz[1] Irfanullah Khan[1] Muhammad Waseem[2]
Dr. Fida Muhammad[3]
1.Assistant Professor, Department of Public Administration, Gomal University, Pakistan
2.Assistant Professor, Department of Management Studies, Hazara University, Mansehra
3.Professor, Gandahara Medical College, Peshawar

Abstract
ICTs are currently being used in developed and developing countries and have been used to improve access to sources of knowledge for both patients and health care providers. However, the undersized health and ICT sector in a country such as Pakistan limits its potential and wider benefits. Adoption of e-health is a change process demanding a lot of behavioral modifications in the work-environment for health workers particularly doctors. Successful implementation and use of IT-applications in healthcare organizations is neither automatic nor purely technical process. It is rather a social process requiring less science and more art of developing, implementing and successfully using the new systems. The success and failure of any digital initiative in the healthcare organizations is squarely dependent more on the questions of use than on the issues of development. The technologies have gradually become less expensive and universally available. The only technical issue in the way of computerizing health services in the developing states like Pakistan is the readiness of healthcare professionals to adopt and use digital technologies. E-Health implementation on average is lower in public sector hospitals of Pakistan than private sector counterparts. Options for capacity development in health informatics are very limited in Pakistani institutions and have been reviewed on limited scale by the researchers; hence, it needs to be explored through available literature. This study aims to determine the readiness of doctors for successful e-projects' implementation programs in the current situation and the way forward for policy makers in managing this critical issue in future.
Keywords: e-readiness, e-project implementation, Developing countries

1. Introduction

The primary focus of e-health systems is to improve the quality of health care with a key focus on evidence-based practice. It-applications in healthcare organizations deal with the collection, manipulation, storage, retrieval and classification of information to deliver healthcare and promote health. It has been defined as "the systematic application of information and computer science and technology healthcare practice, research, and learning of the health care professionals (Khoja et al., 2008). ICTs in healthcare are used for more rational decision-making, evidence-based practice, and efficient resource management. As informatics is prevailing with a great pace across the health sector globally ,trained professionals are needed to utilize and implement health informatics tools to get maximum benefits. Computers and mobile devices like physicians' digital assistant, and computerized physician order entry system are commonly in use nowadays and are therefore an essential part of the e-health (Malik et al., 2008).

Healthcare professionals of Pakistan will be benefitted with the use of information technology and applications for the advancement of knowledge in the health care sector. Without the support of a competent workforce, IT applications deployment in public sector hospitals of Pakistan is not possible until a competent workforce is hired and trained for successful implementation and use of information technology. The success of e-Health programs and systems need multifaceted balancing of the rival views and concerns of the various stakeholders. Some doctors and physicians look at the new technology with doubts; they have fears that these new e-Health systems are threats to their professional independence and status. Patients often get hold of the potential benefits but they are also conscious about the safety and privacy issues of electronically held patient's data. Healthcare professionals may require using IT-applications to bring real improvements in patient care. Policymakers may need to be persuaded that initial expenditures in the new technology will bring the benefits assured. All these contradictory beliefs and points need to be addressed while starting any e-Health project (Brian et al., 2012).

Public sector organizations must show effective involvement to consider the needs of a large number of stakeholders' in healthcare organizations. Also the governments must develop policy structure for a proper guidance about the adoption and use of ICTs. Lack of a proper national policy structure for adoption and use of IS/ICTs in healthcare sector is a further an obstacle to achieve successful introduction of IT-applications into health programs (WHO, 2004). Still where policies and methods exist, technology developers, dealers, users, and decision-makers must be conscious of them and the impact they may have on their decision regarding the

acquirement, expansion, use, and operation of health ICTs.

Policies must, essentially, be in consonance with any overall informatics policies in a country as well as with its overall healthcare sector policies. The national health ICT policies, in turn, impose restrictions to any policies that may be established lower in the hierarchy, at regional or local levels. Once devised, they must be executed in a coordinated manner (Shaqrah & Amin, 2010). The goal of establishing national strategies for ICTs is to provide a rational and logical national agreement directed to facilitate implementation of e-Health projects, developing a proper infrastructural setup, take full advantage of the benefits for invested financial resources in IT-applications for healthcare organizations and enabling healthcare professionals to work more effectively.

2. e-Health Readiness

E-health Readiness means the preparedness of healthcare organizations or societies for the expected change caused by plans associated with IT-application (Khoja et al., 2008). E-readiness is defined as the facility and capability to follow value creation chances assisted by the utilizing the Internet. Or it is a country's capability to support and sustain the development of ICTs. Likewise, organizational readiness comprises infrastructure, related systems, and technical skillfulness. E-Readiness is not only a problem with the subordinate level employees, but expanded to top management also (Durrani et al., 2012). Endeavors to develop willingness assessment tools for e-health projects have taken place in the Canadian provinces of Alberta and Ontario where tools to evaluate e-health readiness in hospitals and medical institutions and the public were developed (Khoja et al., 2008). In spite of being really complete, these tools give attention to developed countries, and do not deal with the factors of slow adoption and use e-Health systems in developing countries. It is, therefore, significant to develop tools and devices that are more particular to the challenges faced by developing states (Nyella & Mndeme, 2010). The readiness of general public depends on their attitude as according to several researchers make a distinction between client types: Internet believers and non-Internet believers.

a. The Internet believers have knowledge and have the expertise in using internet and belief and they have a totally engrained e-habit. Such users consider use of internet as a normal every day's activity; somewhat that is not yet worth talking about with their friends.
b. Non-believers are those who start to utilize the Internet. Such users require considerable persuasion to develop trust and expertise so that they start developing their e-Habit. Once they are online these users tend to be surprised and pleased of their achievements and want to pass on this news to their friends and colleagues. After turning them into believers they take the next step and become rectors − a viral effect where users acquire more users (Ferraro, 2008).

The arrival of web technology comprises a new medium of business which puts the people in a situation to directly and quickly interact with the web services. Though, developing nations keep on delivering most of their services and products using traditional delivery channels, particularly paper-based organizational networks. This is mainly due to the resistance of organizational members to new technologies (Kundi, 2010).

There are many crucial decisions in the implementation of e-Health systems for instance hospitals' privacy policy and procedures appropriately examined by the interrelated governmental regulatory bodies. Secondly the main concern should be focused on e-Health disclosure policies to completely identify the hospitals' duties and responsibilities and also those of its clients (patients) regarding the E-Systems (Alvarez, 2004). The issues relating to ICTs are also concerned with the management's weak understanding of ICT's cost-related concerns. The healthcare-organizations' concentration is mainly on advantages from e-Health plans and projects and ignores cost implications. A Hospitals' authorities calculate approximately huge benefits and maximum cost savings from their investment in IT-projects. This makes the organizations to wait extra number of years just to get the estimated financial returns from IS exploitation and use. Finally, the organization faces lower efficiency and competitiveness due to lengthened use of outdated technology (Mengiste, 2010).

3. Readiness in public-sector healthcare organizations of Pakistan

Though, introduction of IT-applications to change existing paper-based data collection tools and devices in public healthcare organizations of developing nations like Pakistan is a tough procedure of change often loaded with a number of context-sensitive issues for example: shortage of sufficient resources (such as poor financial resources and mismatched infrastructural arrangements) (AbouZahr & Commar 2008; Mosse and Sahay 2003); insufficient expertise and knowledge at a local level to control new e-systems uneven and uncoordinated organizational structure and variety of stakeholders along with political and bureaucratic limitations (Kimaro & Nhampossa 2005).

In order to generally evaluate e-health readiness of doctors and physicians in healthcare organizations of developing states, the e-gadgets must tackle the key determinants of accessibility to e-health systems pertinent to their environment, along with other major planning issues such as needs assessment, execution, and evaluation (Malik et al., 2008). Importance of these issues should permit greater access to e-health for healthcare providers of different genders and levels of organization, and patients of different genders and socioeconomic groups. Handling these issues of unfairness in access to e-health could, in turn, help in resolving the issue of the digital divide, which is so common in the developing countries (Ansari et al., 2012).

The e-Health devices have also been converted into the country's local language (Urdu) to enhance their usability in more insignificant and remote areas of the country, where language can otherwise be a major obstacle to participation and growth. The existence of e-health readiness assessment tools should help in improving the quality of planning of e-health programs in healthcare organizations of Pakistan, as well as developing the awareness, support, and belief among doctors, physicians, other staff and planners linked with IT-applications previously in use(Brian et al., 2012). The tools should also help solve technology-related and learning issues amongst staff, e-devices must also support improved communication between the healthcare organizations, the people, and the healthcare providers, and also remove the barriers regarding the use of ICT associated with gender and socioeconomic circumstances (Robert et al., 2012).

According to Thielst (2007), following an assessment of different studies in the healthcare area established that perceived usefulness is a forecaster of technology acceptance in healthcare organizations. Ease of use was not found to be important. In terms of technology diffusion, (Horan et al., 2006) found that in order to diffuse technology in an organization, it is important to determine physicians' behavior, their workflow practices and their opinions regarding the value of specific information systems.

4. Implementation of e-health projects in developing countries

Implementation of IT-applications in developing states requires not only a transfer of technology but also the presentation of the culture that go with these systems. What is transferred are not only machines, hardware, software, skillfulness and knowledge but also the behaviors, the value systems together with the social, political, and cultural makeup. As it may be comparatively very easy to transmit the technical work of art, it is far more difficult to transfer the socio-cultural environment to other settings. Like all other technologies, IT is also context sensitive and ensuring technological learning is essential for its successful transfer to developing countries. Thus, we need to understand that computerized HIS in developing states is a kind of IT transfer which matters (Ansari et al., 2012).

Most of the software being purchased in developing countries is proprietary software where developers put curb on the rights to their software and charge fees for each copy (limited number of computers). Proprietary software means software that has an owner who has the control over the software by imposing restrictions on its use and copying the same. The obstacle to use, copying, or modify can be achieved by lawful or technical means. Technical means include releasing machine-readable binaries only, and withholding the human-readable source code. Legal means include software licensing, copyright and patent law. Other authors emphasize that the owner is of major importance, in contrast to 'free software', where the liberty of computer users is most important (Brian et al., 2012).

The impact of the organizational aspect on successful adoption and use of ICTs' has been explained and investigated in multiple perspectives. Some of the researches have used different terminologies including contexts, environment variables, and factors when talking about the organizational dimension. Management style is a measure of organizational context which is characterized as mission, size, goals, top management support, health information system (HIS) executive hierarchical placement, maturity of HIS function, size of this function, management philosophy/style, evaluator perspective, culture, and IS budget size. In addition, organizational factors that influence ICT usage as organizational structure, size, managerial ICT knowledge and awareness, top management support ,finances, goal configuration and budgeting method (Hussain et al., 2007).

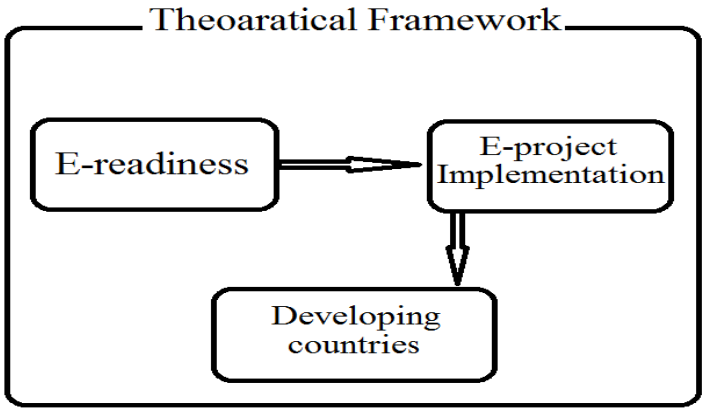
Some researchers recognized new technologies that consist of knowledge-sharing between various stakeholders, information systems development for organizing and controlling patients' record, training and education, developing awareness among people about major causes of a specific disease and prevention from different illness. However, these issues are exposed for debate surrounding the ICT field with a variety of terminology differences. These wide focus areas of ICT applications in achieving health MDGs are mostly suggested from the viewpoint of developed countries where both demand-side and supply-side of information are of main value. However, 'information and knowledge society' being a key matter in development settings implies that access to

information should be the base and best represented by demand-driven ICT use. Knowledge, as the core of development agenda that fundamentally contributes to interconnect all information-related digital divides, can be another 'strategic resource' to be exploited in a resource-poor setting (Malik et al., 2008).

Successful engagement with doctors and physicians is critical for successful implementation of ICTs in healthcare. ICT can be very challenging to the independence and professional status of healthcare providers. The dispute arises from the potential of ICT that changes the work pattern of delivering healthcare services, allows different skill-mixes in clinical teams, empowers different doctors to make decisions about patient care, and empowers and enables the patients to self-care. Illustrating the separate roles for different stakeholders is important in ensuring that their efforts are harmonizing (Panos, 2005). For instance, the international donor community plays a role in managing funds for ICTs and health programs. State governments should concentrate on developing a clear rigid structure for promoting equal involvement of stakeholders, and manage implementation. Civil society organizations, the private sector, educational institutions, and healthcare organizations are expected to go ahead on implementation and in monitoring, assessing, and learning from experience. Grassroots organizations and local governments have roles to play in identifying needs (Khoja et al., 2012).

When investing in ICTs, a number of significant criteria for assessing and approving the project must be taken into account. Investments in ICTs are not so dissimilar from other important investments in terms of the measures and actions that must be followed and the need for thoroughly-built business plans (PAHO, 1998).The cost-benefit analysis of an e-Health system includes the questions of sustainability (starting, maintaining and nourishing the e-Projects). Interventions need to be designed that will have an impact not only in the immediate future but for many years to come. Sustainability issues can include continuous improvement and upgrading, training, and maintenance of the system. ICT ventures, mainly those dealing with information systems, are infamous for running over time and over budget, still they fail to carry-out all the particular tasks in an acceptable and suitable way. This can be mainly avoided by efficient project management, together with planning, quality assurance, and resource management components. Obtaining a successful system is not simply a process of competitive tendering, local development, or acceptance of an externally funded donated system. The procurement process should be designed and planned, in order to go with the explanations of the need and circumstances. This in turn needs a systematic approach to defining the requirements and the available resources, including running costs and staff availability (Shaqrah & Amin, 2010).

4.1 Theoretical Framework



5. Research Methodology

In this study literature survey from the existing sources was done. After exhausting the relevant sources of information, in next step a Computer based software ATLAS.ti was used for qualitative data analysis. The main concepts and variables were fed into ATLAS.ti for coding, extraction of quotes and memos creation. Furthermore, like experts of qualitative research, we also examined, categorized, tabulated and recombined the data for analysis. We used hermeneutics (James, 1992), discourse (Max, 1990) and heuristic (Moustakas, 1990) analyses to find the fact. The below figure demonstrates the relationship between the independent (e-readiness) and the dependent variable (e-project implementation). This model is the conceptual framework of the questions addressed in the current paper.

6. Discussions

Healthcare organizations adopting and utilizing e-Health systems admit and receive a number of advantages, for instance, decrease in medical errors, reduction in cost of delivering healthcare services and enhancement of physicians' competence. In spite of knowing about all these potential benefits of IT-applications in health, doctors and physicians still resist to include and integrate computer technology while attending patients. These healthcare providers prefer to write prescriptions by hand rather than using the technology for the same. The resistance by the healthcare professionals is due to a number of reasons (Shaqrah & Amin, 2010). Healthcare professionals argue the process of obtaining patients records from a range of computer applications is not a clinical skill of doctors and is just wastage of time. Yet another reason of resistance by the doctors for IT-application in health sector especially in developing states is Lack of their training and education in ICTs. For a successful adoption and execution of IT-applications in hospitals all over the world, computer skills of physicians and staff involved is a must (Saleem, 2009).

E-Readiness refers to the preparedness of a community or an institution to implement successfully any program that involves information and communications technology (ICT). Assessment of e-readiness can facilitate the process of change for individuals and organizations to adopt ICT, and avoid chances of relapse and failure. Many research studies which used some of the current forecasting models of user awareness and readiness of healthcare professionals for the new technology are found to be poor in a healthcare perspective. Chetley, A. (2006) recognized that only perceived usefulness is important and ease of use was insignificant while predicting Internet use by applying the Extended Technology Acceptance Model (TAM) to the Healthcare Environment. (Lapointe, Lamothe & Fortin,2006) recognized that TAM as designed by (Davies et al., 1989) is not right for e-Health systems while examining the dynamics of IT adoption in a most important change process in healthcare delivery services. They explained that adoption/resistance aspects may be group related as opposed to the essential basis of TAM which is individualistic, effect of intra and inter organizational factors, linkages to cultures, environmental factors as well as the complication of the organizational environment.

Problems regarding implementation of health information system (HIS) in developing countries are many in number. Issues in connection with the implementation of HIS in developing countries mainly relate to cost, poor infrastructure, lack of ICT skills poor strategies and donor policies, as well as more sensitive issues such as power dynamics and identity forming (Kimaro & Nhampossa, 2005). In particular, the most well-known research on HIS adoption and use in developing countries explain that the issues are hardly ever related to (or at least not limited to) the technology itself. Power dynamics, politics, identity formation, everyday-routine-integration and other societal aspects are often what make the difference between implementation and non-implementation HIS (Nyella & Mndeme, 2010). Earlier studies also highlighted that healthcare providers, particularly physicians, have a trend to be unwilling for the new technology (Fitzgerald, 2008).

7. Conclusions and suggestions

Generally, there is small investment in ICTs for healthcare settings in majority of the developing states. This condition is because of various types of IS/ICTs are being obtained from different donors. A small number of public healthcare organizations have proper IS or ICTs available with them, and there is no dependable infrastructure to enable inter-organizational transmission of information. Consistently, there is no nationwide health information and IT infrastructure to strengthen and improve the delivery of healthcare services. WHO (2004) emphasizes that the technologies and devices adopted and used must be according to the specific requirements of healthcare organizations, if they are to be well thought-out as essential investments. Literature also reveals that there are a relatively low number of healthcare institutions offering the capacity building in Health Informatics in Pakistan which reflects the lack of availability of trained healthcare professionals and thus their willingness to adopt e-health systems. Considering the factors responsible for this state of affairs, urgent and concrete strategies must be developed to address the concerns of academic institutions as they represent a highly sensitive domain of health systems of Pakistan.

Improving the overall health informatics, review of institutional capacity and promotion of health informatics education might bring about a positive numbers in health workers. The e-health education in Pakistan is in its infancy stage. The central strategy, strong leadership and appropriate funds focusing on health informatics education and training are lacking in Pakistan. Moreover, a great number of personnel are needed to be trained in the health informatics discipline at various levels of healthcare organizations. Currently there is a great need of IT-professionals in Pakistani public sector hospitals. These professionals must possess knowledge and understanding of both IT and health care. There are many different ways for promoting universal e-health systems view and one of them is to develop persistent partnership between established universal health centers and institutes which are located in developing countries. Training needs should be assessed from multiple

perspectives of hospital, public, educational and corporate sectors. A suitable approach to e-health capacity building is needed, which can blend in with the medical and educational culture of Pakistan. Current and future issues and challenges in e-health should be addressed in the capacity building program.

References

1. Abou Zhar C. and Commar. (2008). *Neglected Health Systems Research: Health Information Systems.* Alliance for Health Policy and Systems Research: World Health Organization.
2. Alvarez, A. J. S. (2004). Challenges of information systems implementation in organizational change management: Insights from the health sector in Equador. *Electronic Journal on Information Systems in developing Countries*, 16(6):1-16.
3. Ansari B.I.H., Shaikh A.A., Khan R.A. & Hamirani N.S. 2012 Telemedicine Enlightment: A Smart Health Care System for Rural Areas. *Journal of Emerging Trends in Computing and Information Sciences*, Vol. 3, No. 2.
4. Brian S McGowan, Molly Wasko, Bryan Steven Vartabedian, Robert S Miller, Desirae D Freiherr, Maziar Abdolrasulnia (2012). Understanding the Factors That Influence the Adoption and Meaningful Use of Social Media by Physicians to Share Medical Information; *J Med Internet Res*, 14(5):117.
5. Chetley, A. (2006). Improving health, connecting people: the role of ICT in the health sectors of developing countries a framework paper. *InfoDev*, 31 May 2006.
6. Davies, F.D., Bagozzi, RP & Warshaw, P R. (1989) User acceptance of computer technology: A comparison of two theoretical models. *Communications of the ACM*, 35, 982-1003.
7. Durrani, H.; Khoja, S.; Naseem, A.; Scott, R. E.; Gul, A.; Jan, R. (2012). Health needs and eHealth readiness assessment of health care organizations in Kabul and Bamyan, Afghanistan. *Eastern Mediterranean Health Journal*, 18(6):663.
8. Ferraro, N. (2008) ³Africa‘s Portal to the Internet. *Informationweek*, February 4, pp. 36–42.
9. Fitzgerald G. (2006). *Effective Technical and human implementation of computer-based system (ETHICS) in Information system development: Methodologies, Techniques and Tools.* Berkshire. UK: The McGraw-Hill Companies.
10. Horan, T.A., Tule, B. & Hilton, B.N. (2006). *Understanding physician use of online systems: An empirical assessment of an electronic disability evaluation system.* IN SPIL, T. A.
11. Hussein R, Mohamed N, Shahriza N, Karim A. & Ahlan AR. (2007). The influence of organizational factors on information systems success in e-government agencies in Malaysia. *The Electronic Journal on Information Systems in Developing.*
12. James, P. Gee (1992). Discourse analysis, In: LeCompte, M. et al. (2001). The handbook of qualitative research in education ((Eds). chapter 6), San Diego, Academic Press, USA.
13. Khoja S., Durrani H., Nayani P. & Fahim A.,2012; Scope of Policy Issues in eHealth: Results From a Structured Literature Review. *J Med Internet Res* 2012;14(1):e34
14. Khoja S., Scott R., and Gilani S., 2008,E-health readiness assessment: promoting hope in the health-care institutions of Pakistan. *World Hosp Health Serv*, 44(1):36-8.
15. Khoja, S., Scott, R. E., Casebeer, A.. Mohsin, M., Ishaq, AFM & Gilani, S. (2007). e-Health Readiness Assessment Tools for Healthcare Institutions in Developing Countries. *Telemedicine & e-Health*, 13(4).
16. Kimaro Honest C & Titlestad Ola Hodne. (2008). Challenges of user participation in the design of a computer based system: the possibility of participatory customization in low income countries. *Journal of Health informatics in developing countries*, 2(1).
17. Kimaro, H. C. (2006). *Decentralization and sustainability of ICT based health information systems in developing countries: A case study from Tanzania.* Faculty of Mathematics and Natural Sciences, University of Oslo. PhD Thesis.
18. Kimaro, H.G. & Nhampossa, J.L. (2007). The challenges of sustainability of health information systems in developing countries: comparative case studies of Mozambique and Tanzania, *Journal of Health Informatics in Developing Countries*, 1(1), 1-10.
19. Kimaro, H.G. & Nhampossa, J.L. (2007). The challenges of sustainability of health information systems in developing countries: comparative case studies of Mozambique and Tanzania, *Journal of Health Informatics in Developing Countries*, 1(1), 1-10.
20. Kimaro, H.G. & Nhampossa, J.L. (2007). The challenges of sustainability of health information systems in developing countries: comparative case studies of Mozambique and Tanzania, *Journal of Health Informatics in Developing Countries*, 1(1), 1-10.
21. Kundi, GM. (2010). *E-Business in Pakistan: Opportunities and Threats*. Lap-Lambert Academic Publishing, Germany.
22. Lapointe, L., Lamothe, L. & Fortin, J. (2006). *The dynamics of IT adoption in a major change process in healthcare delivery.* In Spil, T. A. M. & Schuring, R. W. (Eds.) E-Health Systems Diffusion and Use: The Innovation, the User and the USE IT Model. London, The Idea Group Publishing.

23. Malik, M. A., Larik, N. M. &Khan, S. A. (2008). Use of information technology by practicing clinicians in Pakistan: a questionnaire survey. *Journal of Health Informatics in Developing Countries*, 2(2):2-5.
24. Max, V. Manen (1990). Hermeneutical Analysis: Researching lived experience, New York, State University of New York Press, USA.
25. Mengiste S A. (2010). analyzing the challenges of IS implementation in public health institutions of a developing country: the need for flexible strategies. *Journal of Health Informatics in Developing Countries*, 4: 22-6.
26. Mosse, E. and S. Sahay (2003). Counter Networks, Communication and Health Information Systems: A Case Study from Mozambique. *In The IFIP TC8 & TC9/WG8.2+9.4 Working Conference on Information Systems Perspectives and Challenges in the Context of Globalization. M. Korpela, R. Montealegre and A. Poulymenakou (Eds), Athens, Greece*: 35-51.
27. Moustakas, C. (1990). Heuristic research, Academic Press, Newbury Park, USA
28. Nyella, E. & Mndeme, M. (2010). Power Tensions in Health Information System Integration in Developing Countries: The Need for Distributed Control, *Electronic Journal of Information Systems in Developing Countries*, 43(4): 1-19.
29. PAHO (1998). *Information Systems and Information Technology in Health: Challenges and Solutions for Latin America and the Caribbean*. Health Services Information Systems Program. Washington, DC;PAHO/WHO.
30. PANOS, (2005). Information and communication technologies and large-scale poverty reduction. London: Panos, in association with Swiss Agency for Development and Cooperation, Foundation for Development Cooperation, International Institute for Communication and Development, MS Swaminathan Research Foundation, and United Nations Development Program Price water house Coopers 2000. E-connectivity producing measurable results. Health Cast 2010, *Ehealth Quarterly*, November: 1-23.
31. Robert C Wu, Vivian Lo, Peter Rossos, Craig Kuziemsky, Kevin J. O'Leary, Joseph A Cafazzo, Scott Reeves, Brian M Wong, Dante Morra (2012). Improving Hospital Care and Collaborative Communications for the 21st Century: Key Recommendations for General Internal Medicine. *Interact J Med Res,* 1(2):e9.
32. Saleem T (2009). Implementation of EHR/EPR in England: a model for developing countries. *Journal of Health informatics in developing countries*, 3(1).
33. Shaqrah, Amin A. (2010) Adoption of Telemedicine among Health Care Services: The Strategic Adoption. *Journal of e-Health Management*, Vol. 19.
34. THIELST, C. B. (2007). The New Frontier of Electronic, Personal, and Virtual Health Records. *Journal of Healthcare Management*, 52(2).
35. WHO, (2004). *eHealth for Health-care Delivery: Strategy 2004-2007*. Geneva:

The IISTE is a pioneer in the Open-Access hosting service and academic event management. The aim of the firm is Accelerating Global Knowledge Sharing.

More information about the firm can be found on the homepage:
http://www.iiste.org

CALL FOR JOURNAL PAPERS

There are more than 30 peer-reviewed academic journals hosted under the hosting platform.

Prospective authors of journals can find the submission instruction on the following page: http://www.iiste.org/journals/ All the journals articles are available online to the readers all over the world without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. Paper version of the journals is also available upon request of readers and authors.

MORE RESOURCES

Book publication information: http://www.iiste.org/book/

IISTE Knowledge Sharing Partners

EBSCO, Index Copernicus, Ulrich's Periodicals Directory, JournalTOCS, PKP Open Archives Harvester, Bielefeld Academic Search Engine, Elektronische Zeitschriftenbibliothek EZB, Open J-Gate, OCLC WorldCat, Universe Digtial Library , NewJour, Google Scholar