Introduction to Minitrack: Information System Adoption, Diffusion, Implementation, Use and Evaluation in Healthcare

Ton Spil (a.m.spil@sms.utwente.nl)        Ken Trimmer (trimkenn@isu.edu)
University of Twente                   Idaho State University
Cynthia LeRouge (lerougec@slu.edu)       Carla Wiggins (wiggcarl@isu.edu)
Saint Louis University                Idaho State University

Successful adoption, implementation, diffusion, and evaluation of information technology (IT) innovation in healthcare continue to challenge research and practice. Information Technology is seen as an enabler of change in healthcare organizations but (information) technology adoption decisions in healthcare are complex due to factors such as uncertainty of benefits, the rate of change of technology, and the need for relevance. In the health sector, each decision to adopt has individual, project, organizational, and policy/system level implications. Each of these levels manifests factors of success and associated risks. This minitrack focuses on the role of adoption, implementation, diffusion, and evaluation factors and the interaction of these factors at various levels to healthcare system success.

The best paper nominee in this track, Towards a Framework for Health Information Systems Evaluation by Yusof, et. al., underscores the various levels of innovation impact by introducing a new framework for HIS evaluation that combines dimensions and measures from current evaluation frameworks in Health Informatics and models in IS. The proposed HOT-fit framework (Human, Organization and Technology-fit) incorporates the concept of fit between technology, human, and organization as a means to improve current methods of HIS evaluation.

On a system-level, reimbursement structures, regulations, inter-organizational concerns, and the existence of standards may have an explanatory role. To this end, Sherlock and Chismar argue that the evolution of computerized reservation systems (CRSs) provide lessons learned to analyze problems and issues in the development of electronic health records. CRSs turbulent systems evolution was driven by environmental, technological, and structural factors, which these authors assert is analogous to current trends in the health care industry and that similar patterns of adoption will occur in electronic health records (EHRs).

On an organization level, the previous strategic choices, strategic priorities, size and location of the organization, information assurance, and many other factors may play a role. Maass and Eriksson highlights some managerial challenges encountered during the adoption of a Picture Archiving and Communication System (PACS) at Turku University Central Hospital (TUCH). The results are based on a five-year survey consisting of statistical data, cost analysis, modeling, customer satisfaction inquiries, time and motion studies, observation and staff interviews.

On a project level, resources, project management, etc. plays a role. Kiura focuses on the need to explore the project level by reporting on a project establishment undertaking as proposed by the STEPS methodology (Software Technology for Evolutionary Participatory System Design). Project establishment in STEPS is aimed at getting an inner understanding of a project’s environment. This paper focuses on evolving a ‘participatory culture’ to assist in better understanding the project environment.

We also need to learn more about the identification of different adopter-categories in practice and about the role that IT has for various work processes that it may simultaneously touch upon. In this vein, Mantzana and Themistocleous explain the need to improve the adoption of innovations in healthcare, through defining and identifying healthcare actors using a detailed and systematic method. Padmanabhan et. al., also acknowledge the individual level as they point out the need for both objective and subjective measures in their evaluation of a handheld support triage prototype called iTriage to the impact on quality of the triage decision making process.

Dhillan and Forducey draw our attention to the topic of adoption relevance in their telemedicine case study. The authors report that by involving all stakeholders in the project at various stages, without causing perturbation of the basic rehabilitation services delivery process providers were able to increase their revenue and profitability, and the patients, realized savings by avoiding travel to a health care facility, saving valuable time, and in many cases, avoiding serious medical complications resulting from delays in delivery of services.