Telemedicine
Introduction to Minitrack

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Telemedicine is about the use of telecommunications technology to facilitate and possibly enhance the practice of medicine and other healthcare activities at a distance. Recent advances in technology and information infrastructures have engineered a global surge of telemedicine, witnessed by an ever increasing number of telemedicine projects and programs spawning in almost every corner of the world. This minitrack serves a miniature of this global surge with papers discussing some of the interesting developments and deployments of telemedicine in the United States, Spain, Australia, and Hong Kong.

The success of telemedicine programs needs to address both technical and managerial challenges. Past research on telemedicine has concentrated on the technological issues. However, more telemedicine projects and programs have been temporarily suspended or even failed because of managerial than technical obstacles. This minitrack strikes for the desired balance between technical and managerial interests by entertaining three papers on managerial issues and four on systems development and other technical issues.

The paper, "Organizational Adoption and Diffusion of Technological Innovations: A Comparative Case Study on Telemedicine in Hong Kong," by Kunihiko Higa et al. investigates the adoption decision making for and subsequent diffusion of telemedicine in two clinical units of a teaching/tertiary hospital in Hong Kong. This study proposes a factor model for organizational adoption decision making, identifies several critical success factors for effective technology diffusion, and explores the relationship between adoption decision making and technology diffusion. The second paper of managerial interest is Robert Doktor's "Assessing Organizational Impact of the Implementation of a Telemedicine System and Proposed Methodology." As one of the five parts of a pilot study under the federally funded "Project Akamai," this study evaluates organizational impact of telemedicine insertion into natural military clinical setting. The other managerial paper, "Suggesting a Diffusion Model of Telemedicine - Focus on Hong Kong Case," by Kunihiko Higa et al. analyzes the response of the public hospital sector in Hong Kong to telemedicine technology using the characteristics of the Hong Kong healthcare system. This study presents a causal model to describe the development path of telemedicine in this region.

On the technical side, four papers are included in this minitrack. The paper, "A Group Decision Support System (GDSS) Framework for Medical Decision Making Incorporating Cognitive Structures and Cognitive Appropriation," by Roa et al. presents a GDSS framework for medical decision making. The contribution of the proposed framework lies in its support of individual interactions and group processes using cognitive and GDSS structures. The second paper, "Object-Oriented Teleconsultations in Global PACS Using Multi-Thread JAVA," by Ralph Martinez and James Yu addresses the need for portability and flexibility in the viewing workstation used for different purposes within a heterogeneous medical environment. This paper details the design and technology employed in developing a prototype teleconsultation system which is valuable to individual and collaborative diagnosis, and continuing medical education. The third paper, "Satellite-Based Telemedicine: A Case for Its Re-emergence," by Tony Greening discusses the circumstances which favor telemedicine using satellite technology. The study analyzes the use of satellite-based telemedicine to deliver healthcare services to the populations located in presently underserved regions. The other paper, "Telemedicina: A Multimedia Broadband Teleradiology Project," by Pedro de Blas et al. describes the Telemedicina project in Spain. The study details a multimedia Unix-platformed teleradiology system, including the system architecture and its clinical applications.