

Kayseri EA Hospital Connects Health Information to Physicians and Nurses in Turkey E-Government Research and Application Center Pilot

“One of the most important transitions to a digital hospital we must make is to enable more efficient mobility among our healthcare professionals. This project allowed us to lay the foundations for a very useful system that enhances both staff productivity and patient safety. I would like to thank METU, Birim Bilgi, Cisco, and Intel for working with us to make this happen.”—Dr. Ismail Tamer, chief physician, Kayseri EA Hospital

In Brief

EDMER is a public-private-academic consortium mandated by the Turkish prime minister’s State Planning Organization (SPO) and the Ministry of Industry to collaborate and customize global practices, demonstrating e-transformation initiatives within a local context, with the aim of scaling the experience nationwide. Managed by the rectorship of the Middle-East Technical University (METU), it includes major global and local industry partners such as the Cisco® Internet Business Solutions Group (IBSG), Intel, and Turk Telekom. Healthcare is a key domain within Turkey’s national e-transformation goals, and it is also the top priority for Turkey’s number one telecommunications operator, Turk Telekom, as the nation’s leading provider of solutions to the healthcare sector. Taking up Cisco IBSG’s offer of partnership, EDMER identified a proof-of-concept (PoC) project with Turkey’s largest publicly funded education and research hospital, Kayseri EA Hospital. The hospital is a benchmark for many transformational projects, and was the first hospital to launch its own network security infrastructure. In 2008, it launched PACS, a digital X-ray imaging and archiving system, and is carrying out full automation of the entire hospital system. Kayseri EA has 275 specialist physicians, 20 general practitioners, 500 nurses, 275 medical officers, 192 auxiliary services staff, and 1,104 hospital beds, providing health services around the clock to 10,000 patients daily in the province of Kayseri.

Customers

EDMER and Kayseri EA Hospital, Turkey
Turk Telekom

Industry

Public Sector
Service Provider

Challenges

Kayseri EA Hospital recognized that advancements in information technology have resulted in producing and processing high volumes of health-related data and knowledge, rendering conventional paper-based models inadequate to respond to the increasing demands of modern, information-intensive healthcare.



Cisco Internet Business Solutions Group (IBSG)

Although the hospital has digitized some functionality, the conventional paper-based system heavily prevails, due in part to:

- Technophobia of staff, particularly among nurses.
- Lack of business and IT integration into daily clinical processes for the patients, doctors, and hospital administration staff. Use of email, word processing, and other tools must be mapped into daily processes and staff trained and coached for effective change management.

The hospital information system (HIS) in which patient records are stored is typically stationary. Access to records is maintained from one or more desktop computers in each ward, so when the healthcare professionals are away from the computer, access to patient information is not direct and patient care is prone to repetitive work, concurrent use of paper charts and records, and time-consuming procedures.

Solutions

In consultation with Kayseri EA Hospital and EDMER, Cisco IBSG identified and designed a digital hospital PoC focused on extending the HIS to connect physicians, nurses, and patients to the information they need. Whether health professionals were at the bedside or on the move, the goal was to enable them to respond promptly and enhance patient care and experience, particularly in emergency cases. Twenty-one participants were actively involved, with more than 50 percent being nurses.

The objective was to show quick impact and change the mindset of the hospital staff by making their job easier, enhancing productivity.

Key components of PoC project included:

- Integrating mobile applications and RFID technology with voice and video communication and telemedicine consultation.
- Increasing the quality of application usage, such as proper access to electronic patient records, real-time asset tracking, and patient blood matching.
- Enhancing overall patient security and response time as well as reducing cost of treatment per patient by saving time.

Other EDMER partners contributed to project management, systems integration, training, and on-site support (Birim Bilgi), hiring of mobile clinical assistants (Intel), and observations and evaluation (METU).

Next Steps

- Jointly define a go-to-market solution with Turk Telekom to present to the Ministry of Health and the 1,000 public hospitals where the solution can be scaled.

Projected Results / Benefits

- Although more than 70 percent of the participants had little or no ICT literacy, conversion was significant during the seven months of the project. Access times, as compared to conventional systems, were seven times faster for patient information, 500 times faster for laboratory results, and 130 times faster for imaging results. Overall, the new approach reduced waste by cutting down on the 10 sheets of paper that were being used per patient per day.

- There were also significant changes in participants' attitudes: 61 percent cited a preference for mobile solutions over the conventional system; 85 percent of physicians found mobile solutions helpful in decision making about treatment; 85 percent of nurses found mobile solutions helpful in taking more reliable notes; and 66 percent of participants believed that mobile solutions can effectively reduce their workloads.
- Overall, participants agreed that the improvements in access time to patient records will increase quality of care and staff productivity while reducing medical errors, contributing to patient safety and care.
- A video case study was presented to stakeholders, including Turk Telekom, generating interest from the company's leadership to develop a partnership with Cisco IBSG in addressing the health sector.

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