Giving Healthcare a Hand: Adapting Mobile Scanning Device to Patient Care

by Lisa E. Boyes

The goal to move data quickly and accurately is as important, if not more so, in healthcare as in a warehouse, retail outlet or manufacturing plant—and not just for efficiency, but for timely, updated and comprehensive access to care. Yet hospital staff equipped with wireless handheld devices to input and retrieve patient data at the bedside is still a relatively uncommon sight in Canada.

This was the impetus for Symbol Technologies (now a division of Motorola) to begin a design project with Professor Khalid Danok of George Brown College’s School Of Computer Technologies, along with his students in the three-year Computer Systems Technology diploma program. Students must complete real-world field projects with industry partners in the final semester of their program. The Ontario Centres of Excellence (OCE) Connections program helped fund the project.

Motorola wanted to adapt a Symbol mobile barcode scanner, typically used in inventory applications, to healthcare, so that care providers can input, update and retrieve a patient’s medical history based on scanning the patient’s hospital wristband and linking a wireless connection to a central database server. This would eliminate the need to leave the patient and delay treatment in order to access their information at a dispersed computer workstation.

The project had three parts: developing the new software application for the Symbol/Motorola handheld device, developing a compatible application on a host server, and wireless connectivity that would link all hospital access points. The students used a range of commercially available programming software, database services and operating systems, along with Motorola’s own Software Development Kit (SDK) to create the application. Says Danok, “They put a great deal of focus on researching and learning the technologies necessary to complete the project, while still bringing the project in by the deadline.”

The project was developed primarily at George Brown, using equipment provided by the college or Symbol/Motorola. A second cohort of senior students continued the application suite. It was installed at Motorola Canada, where the functionality of the students’ prototype applications was successfully demonstrated. The students subsequently identified bugs still to be worked out, and discussions are pending with Motorola on the next steps for the applied research and development project.
Says Brent Bloxam, a student involved on the scanner project who is now a systems administrator at Beanfield Technologies: “It was a real-world opportunity to practice the skills gained throughout my semesters at George Brown. Working within a large group with Symbol helped me understand the many facets of successful project planning and follow through that are important in my field.”