Whitmann Price Consulting: Systems Design, Implementation and Review Considerations

Having successfully completed the first two stages of the systems development life cycle (SDLC) for the proposed Advanced Mobile Communications and Information (AMCI) system, Josh and Sandra are ready to lead the systems design effort. They might still need to return to previous stages of the SDLC as they uncover more information about the design of this system. But for now, the requirements as specified in the systems analysis report will guide the design efforts.

When Sandra and Josh worked on the design of the AMCI system, they laid out the details of the system design and answered many questions that would arise in the systems implementation stage. First, they performed an exhaustive study of currently available handheld devices. They felt that choosing the device before creating a detailed systems design would assist in guiding the design. They decided that the device and associated technologies that best fit their needs was the BlackBerry from Research in Motion (RIM).

The systems analysis report indicated that no changes would be required of the current in-house information systems. Whitmann Price Consulting (WPC) could use BlackBerry Enterprise Solution software to connect their existing enterprise systems to the mobile handheld devices for secure, wireless access to e-mail and other corporate data. The BlackBerries they purchased include Bluetooth technology and a Bluetooth wireless headset for each unit. BlackBerries include text and instant messaging, an organizer with calendar, address book, memo pad and task list, and a fully functional Web browser. Additional software solutions could be purchased from third party vendors.

Sandra and Josh also determined that they could develop custom proprietary software using the BlackBerry Java Development Environment (JDE) and standard Web development tools to design Web forms and reports. Software developers used the XML standard to organize the data for delivery, and they used Java as the primary programming language.

The AMCI system also uses the basic services of a cellular network provider. Additional services include a broadband Internet connection, caller ID, voice mail, text messaging and the ability to initiate conference calls involving multiple parties.

Josh and Sandra recommended purchasing virtual private network (VPN) software from third party vendors and installing it on each BlackBerry to secure data communications over the Internet. Consultants can use the broadband Internet connection to send and receive e-mail, browse public Web sites, and use Web services such as buying and selling stocks and bonds, exchanging instant messages, sending and receiving digital photos, and accessing daily news and stock quotes through information services.

The custom software WPC is developing includes:

- Report tools for all commonly used corporate information systems

- A form to enter hours from the client's location directly to the billing system

- Reports that displayed the billing history of a specified client

- Access to expert systems commonly used within the organization

- Access to a central database with contact information of clients, partners, and corporate personnel

Josh and Sandra combined all of this information and more into the design report and presented it to corporate executives for review. Part of their report offers suggestions for additional functionality, including ideas as simple as purchasing optional GPS functionality with the BlackBerries, to more costly options such as investing in an ERP system for the entire organization to consolidate and simplify the systems. Other suggestions include developing an intelligent agent tool for finding related records in the systems and a presence system that assists in routing phone calls to the correct party.

Whitmann Price executives approved the design report, but rejected the additional suggestions with a note that these suggestions would be considered for other future systems design initiatives.

Next, Josh and Sandra participated in the implementation stage of the project. Some of the activities that traditionally take place in implementation had already been handled in the design stage. For example, the hardware had already been chosen, and that decision affected what programming languages and platforms they used.

The WPC software development team created the proprietary software that would run on the BlackBerries. Systems analysts acquired other software from third-party vendors. Network system specialists worked on the interaction between the BlackBerry and corporate systems.

Maintaining their positions as project leaders, Josh and Sarah supervised the efforts of all teams. Finally, one year later, after many prototypes had been built, tested, and sent back for alterations, Josh and Sandra held in their hands the first of what everyone hoped would be the final product. The BlackBerry-based AMCI device had been thoroughly tested and was ready for trial by fire in the field. After Josh and Sandra approved the final prototype, versions were produced for twenty selected beta testers in the organization – special individuals who were respected information system power users.

After one month, the beta testers provided feedback on what they liked and didn't like about the AMCI system. Fortunately, only minor tweaks were necessary to satisfy the beta testers. The corporate developers spent a month duplicating the final system in 160 BlackBerries for distribution to all the consultants, executives, and field workers within the organization. The final system was completed and in place one month early.

After presenting the completed project to the board of directors, Matt Bollinger text-messaged Josh, Sandra, and the rest of the development team over the AMCI system, inviting them to a celebration dinner that evening at a local Italian restaurant. It would be great to think back on the challenges endured and successes achieved over the course of the development effort – even

though everyone knew that another equally challenging development project awaited them next week. Among the many projects that they would handle over the coming years they would revisit the AMCI system time and time again to tweak, improve, overhaul, and eventually retire in the endless quest to maximize efficiency and effectiveness within the organization and get the right information to the right people at the right time.