Requirements Engineering

Full-Service, Automated Bank Lobby System

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Problem description:

Despite the rapid development of most of banking services, some functions are still performed manually by the teller. Often, clients need to stand in line and wait for a service they want, such as being issued a bank check or money order, cash deposits / withdrawals, etc. Therefore, we have been tasked to develop banking services using an electronic system that does not require a teller. This system will save customers time by not waiting for service and it will increase the efficiency of the branch office by freeing the former bank tellers to maximize their productive time.

Our goal of this system is to provide a new service that helps banks by; saving time by keeping the data in the system electronically, reducing the pressure on bank staff, helping the bank to satisfy its clients by providing new services and being able to serve people with special needs.

The Customer:

A major national bank operating in the United States has requested of us to develop a system that will increase the productivity of their employees, be secure, reduce operating costs and offer a full complement of services for their customers while minimizing their wait time.

The customer states their major stakeholders are their stock owners and their customers. They seek an enjoyable and efficient service for the people who choose to invest their money with them.

Our customer considers all other national banks operating in the United States to be major competitors. They take their standing as a major U.S. bank seriously and are willing to invest in innovation to stay a step ahead of their competition.

The end users:

All bank customers would be able use the system, to include seniors, deaf, blind and wheelchair-using customer. They must have a bank account and would access the system through their own bank card. The design of the hardware and software will be simple enough to accommodate persons with 4^{th} grade reading levels.

We envision five to seven self-service terminals (or kiosks) in use at any given time, per branch lobby location.

At least one of the terminals per office will be fully accessible for persons with disabilities. These terminals will be able to accommodate customers who are blind, deaf, intellectually disabled and use wheelchairs.

Customer Constraints:

Cost is always a factor for implementing new systems of any sort. With that in mind, most of the components will be off the shelf materials, or minimally modified.

The hardware environment should be visually appealing and easy to use for all their customers. The customer requests multiple input methods to accommodate varying levels of accessibility and comfort of their clients. This would include a touch screen display, a keyboard with braille capabilities, a mouse or trackball, a number pad with braille and a microphone and speakers for voice input and confirmation. The hardware needs to be able to accept cash, coin and check deposits. It also needs to be able to print bank statements, checks, money orders and customer receipts. The system should be able to produce paper copies of transaction summaries for the previous six months for internal use.

The operating system needs to support client account access including deposits, withdrawals, transfers, bank statements, investment account summaries, loan and mortgage payments and statements. The OS needs to support software for reading bank cards, scanning check, coin and cash deposits. It needs to support a touch screen interface as well as a physical keyboard, number pad and mouse or trackball inputs. For security purposes, the OS needs to support thumbprint scanning and have an auto logoff system that receives input from a sensing device.

The user environment should produce a feeling of privacy to assure customers with high value transactions. It should also be able to accommodate users who are blind, deaf, intellectually and physically disabled. For the blind, the system will have an automatically triggered audible feature. Along with audible options for the blind to hear, the system will be able to take input via voice so the blind have no problem using the system. A braille keyboard and number pad will also be available. For our deaf customers, the system would have a large display with an OS that is visually easy to navigate. Intellectually disabled customers will be accommodated by an OS designed for a fourth grade reading level. Wheelchair using customers will benefit from some components designed to be adjusted to their unique eye and shoulder heights, such as the touch screen display and a lowered desk area and hardware to accept and dispense money, checks and printouts.

Assumptions:

We assume to be using a version of Apple iOS for the software environment. The OS currently has capabilities for voice input, magnetic card reading hardware, check imaging, Bluetooth for keyboard inputs and is able to support printer functions.

Outstanding assumptions are as follows. We do not know if iOS is compatible with pointing devices, or if it will be able to communicate with the cash accepting & dispensing hardware. These will be verified once a prototype system is in place for testing purposes. If the incompatibilities are verified after a prototype is assembled, our iOS app development team will work to create compatibilities. If these assumptions are completely invalid, using a different OS will be explored.

Risk Areas:

Presently, areas of risk are minimal. Most of the hardware and software is off-the-shelf. For the few instances where it isn't, we are confident in our software engineers of creating compatibilities.