PBS_EquipTrack

Proposal to: Barcode Direct

By

Purpose Built
SOFTWARE

1. Executive Summary

Barcode Direct (BCD) are a supplier and reseller of PDA hardware, software, printers and printer consumables.

ProBuild are a broad based construction company operating in the commercial, industrial, retail and residential space.

Purpose Built Software (PBS) are a supplier and developer of software for desktop and PDA hardware.

ProBuild have an internal hire mechanism where assets (tools and other assets) are hired to ProBuild work sites. The assets when not in hire are located at a single warehouse. Movements of these assets to and from worksites together with the accounting for hire charge, delivery and collection, losses etc is presently a manual operation.

ProBuild have requested of BCD to provide hardware and suitable software to perform asset movement, billing and stocktake functionality.

Given their experience with similar projects Purpose Built Software (PBS) have been approached to put in infrastructure that meets the need.

This proposal is based on information received in meetings, documents and emails with Lance Sleeman of ProBuild.

Two software programs are envisaged:

- A Server application: This is a Windows executable. The Server will perform all of the “heavy lifting”, maintain the links and move item data to the PDA devices. It will also upload the transaction data collected on the PDA devices and prepare write it into a suitable SQL based database.
- A PDA application. The PDA application will run on a WindowsMobile based device with integraded barcode scanning. The PDA application will sync (interact) in easy manner with the Server application.

To enable stakeholders within ProBuild to have maximum input, PBS will provide a number of Prototype applications that will allow stakeholders to touch, feel and operate the components. Feedback from the Prototypes will fed back into the development cycle further refining the deliverables. This approach reduces project cost plus PBS finds it keeps the teams engaged and results in successful project outcome.

PBS is proposing a phased approach where the project development cost of $10k exTax will remain fixed provided requests for extensions do not deviate too far from reasonable expectation. Should extensions be requested then PBS will quote them and attain written approval prior to commencing that work. The phases (with costs) are Prototype ($5000), Implementation ($3000) and Rollout ($2000). The sums are payable at the start of each phase. The pricing includes 3 x PDA software licences. Additional licences may be purchased at $600 exTax each.

PDA hardware has yet to be selected. However the Honeywell 70e (Dolphin Black) would seem to be a good fit. Recommended is that $1500 exGST for each PDA be budgeted for.

PBS encourages the stakeholders to remain engaged with PBS during the project development. If they do this then we envisage the Rollout phase could commence as early as week 4 from project start.

2. Proposed Solution

The proposed suite is comprised of two custom built applications (Server and PDA) that communicate with each other via TCP on an internal Local Area Network. The network may include WiFi access points.

The role of each is described below.

2.1. Desktop Server Functions

The Server application is a program that will run on any suitable server PC machine running Windows XP, Windows Server 2003, Windows Server 2008 or Windows 7 in the ProBuild. It follows that the Server program is well behaved and should be ok to run in an environment where other software is running.

- Reading of initial reference (Asset) data from supplied csv files
- Sending of reference data to PDA software
- Receipt of transaction (asset movement, stocktake) data from PDA software
- Sending (writing) of transaction data to SQL database
- Provide an auto-upgrade mechanism to PDA application

2.2. PDA Functions

The PDA software is an executable that will run on a WindowsMobile platform.

- Capture and validate scanned Asset barcodes
- Capture of Asset Movement data transactions
- Sending of transactions to Server
- Ability to auto-upgrade PDA software from Server

2.3. Database

The actual structure, tables and fields of the database will be fully defined during analysis within the Prototype phase, however the following broad outline is offered.

- Asset
- AssetType
- Location (sites)

2.4. Inter team communications and transitions between phases

PBS is offering to implement this project using the proven Prototype + Implementation + Rollout phase project management model. This approach works really well for projects of this size and ProBuild are recommended to adopt this approach. The phases are described below in more detail together with the roles of the teams.

It is important for PBS that ProBuild promptly test releases of the Deliverables provided to them and provide feedback to PBS. Failure to do this tends to result in cost overrun for PBS. PBS requires that communication of change requests and bugs identified is via a ProBuild maintained document called the IssuesList. The IssuesList is acceptable if it is a Microsoft Excel document that has a row containing detail for each issue. Columns should be at least "Issue#", "Version", "Description" and "FixVersion". The Version being the application version that is current at the time the issue was entered. The FixVersion is the application release version that ProBuild agrees addresses the issue. The document is maintained by ProBuild. PBS will increment the version number at each application release and will provide detail of changes made in the release. Should an item from the IssuesList be addressed (from the PBS perspective) then the Issue# will be cross referenced in the PBS maintained release notes. PBS is not obliged to implement an entry in the IssuesList if it is outside the project scope. Feature requests (even those for discussion and/or price request) should get an entry in the IssuesList; in this way the IssuesList becomes a living document communicating project progress and forward planning.

PBS expectation is that ProBuild will promptly test each Deliverable and return an updated IssuesList within 5 working days of advice by PBS of availability of a new release. PBS will advise new releases via email to a nominated ProBuild person; the email will contain a download link and release notes for changes contained in the release. Should ProBuild fail to advise missing functionality or bugs via the IssuesList document within 5 working days of a release then the current project phase is considered completed and the next project phase commences.

We offer ProBuild the option of abandoning the project at any time during the Prototype Phase; should ProBuild do this PBS retains the sum paid at the start of the Prototype Phase and ProBuild agree not to further use the application suite thus far delivered.

PBS reserves the right to abandon the project at any time prior to rollout. Should PBS exercise this option PBS must repay all monies received for the project phases till date. Should PBS abandon the project (and repay monies) ProBuild agree not to further use the application suite thus far delivered.

The Prototype Phase:

This phase is the modern alternative to the old-style traditional paper based specification document. The process uses a rapid application development tool to create driveable versions as first cuts of the application suite. The applications developed will evolve in the later phases to become the finished Deliverables. To achieve this PBS will commence the project by cloning a known base code set from a previous project that has similar requirements from the communications and data interactions perspective. PBS will then supplement that base with screens and flows that address the ProBuild business rules. The PBS framework is very flexible in this regard; near all our projects evolve new code sets in this manner.

There will be several releases of the application suite during the Prototype phase. These releases allow ProBuild stakeholders to "give it a drive" and provide feedback. PBS engineers will integrate the feedback into the next Prototype release. The project stays (iterating) within the Prototype phase till both parties agree to move to the next phase.

The PDA application will be delivered in a desktop emulator form in the early phases of the Prototype Phase.

PBS recognises that even after this project is delivered, there will be requests for extensions; in essence we recognise that the evolution never really stops.

The result of the Prototype phase is the working application suite supplemented by documentation detailing things yet to be done to complete the works to ProBuild satisfaction. When both parties agree that the working Prototype applications and the supplementary documentation is complete the next phase (the Implementation phase) is triggered.

It is traditional (PBS experience) that some project managers will overly try to keep the project in the Prototype phase making (often late) change requests all the way till the project is fully completed (even Rolled out). If this is happening it normally means the stakeholders are not engaging early enough to provide feedback. PBS will try encouraging early engagement; plus will hold at the Prototype phase (potentially slowing the project schedule) while change requests are still being received. In other words PBS will keep making Prototypes at ProBuild request but will not move the timing of project deliverable to the Implementation phase till change requests stop coming.

It is expected at the start of this phase to design to include a DemoDataSet and a DemoDataReset utility. It is most ok if the DemoDataSet is provided as “real” data from that presently available to ProBuild. The DemoDataSet is normally implemented via a hard-coded block of reference data where the DemoDataReset utility (button) has action of clearing out any captured transaction data and re-loading the reference data. The idea is that ProBuild persons (and PBS development team) can click a button to readily and reliably reset the suites database back to a known starting point. Historically this feature has been useful in allowing teams during this phase to describe (replicate) an observation.

The Implementation Phase:

The Implementation phase begins when all ProBuild stakeholders have provided input and ProBuild and PBS are agreed on what the final Rollout deliverable will be. The aim of this phase is to lock down the Prototype code set, fix bugs and finalise the application Deliverables that ProBuild will use in the Rollout. There may be several releases in this phase. ProBuild has the obligation to promptly test the releases and maintain feedback via the IssuesList document. It is not always possible (and we need to be flexible) but PBS would strongly prefer that there be no additional change requests in this phase. If PBS is getting lots of change requests in this phase then PBS reserves the right to make the call to go back into the Prototype phase (if only) to relieve PBS from project scheduling pressure ex ProBuild to get to Rollout. In this phase PBS expects that ProBuild will request that some end users be allowed to trial (pilot) the Deliverables. PBS will not unreasonably refuse the request for pilot use; however (to be clear) ProBuild must request this of PBS so that there is not confusion between the teams as to which project phase is current. The auto-upgrade mechanisms are designed to facilitate this pilot process and indeed the Rollout itself. PBS is often able to maintain historical data (backward compatibility) between releases in the Implementation phase; however (for clarity) this is NOT a requirement on PBS.

The Rollout Phase:

Rollout is the phase where ProBuild uses the Deliverables in a day to day manner.

Identification of the commencement of the Rollout phase is important to PBS as it delineates a progress payment and commencement of the warranty obligation. ProBuild must test the Deliverables and advise PBS they are suitable for use before using the Deliverables in day to day use. This advice will mark the start of the Rollout phase. Should ProBuild fail to so advise yet begin to use the Deliverables in a day to day manner to other than the agreed Pilot users then the Rollout phase start is triggered automatically. The means by which ProBuild are to communicate missing functionality and bugs is via the IssuesList. Failure by clients to promptly advise missing functionality and bugs via the IssuesList is the single biggest cause of cost overrun in projects at PBS.

For clarity; no new functionality can be introduced at this phase. The warranty covers bug fixes; not missing functionality. New functionality in this phase (if requested) will be treated as new works and quoted separate to this proposal.

Ideally it follows that at the start of the Rollout phase the IssuesList has an entry in each FixVersion cell or contains a comment denoting the feature is for a future round of work.

The Warranty period begins at the start of the Rollout phase.

In this phase PBS will conduct "train the trainer" sessions and those persons will begin training and supporting ProBuild end users.

2.5. Technology and Responsibilities

PBS will implement the application suite using our Rapid Application Development toolset and our library of existing user interface and communications components. On top of this base infrastructure PBS will add functionality to meet the business rules envisaged and provided by ProBuild.

PBS will:

- Design, develop and deliver the Server and PDA applications
- Provide a change report at each release of the software

ProBuild will:

- Provide a single point of contact within ProBuild for communication with PBS
- Supply the Server hardware (it is envisaged this would be an existing Windows XP, Windows2003, Windows2008 or Windows 7 based PC)
- Supply the Client hardware (it is envisaged these would be existing Windows XP, Windows2000 or Windows 7 based desktop PCs)
- Provide a test environment and test data
- Assign adequate resource to test Deliverables and provide feedback
- Maintain an Issues list document detailing missing functionality or bugs

2.6. PBS Project team

Project Management:	Norman Bain
Technical Lead:	Peter Baum

Other resources will be involved as needed.

2.7. Deliverables

The Deliverables include:

- Server Software in executable form
- PDA Software in executable form
- 1 x ½ day "Train the trainer" training courses conducted at ProBuild offices
- Warranty period of 90 days from start of Rollout phase

2.8. Validity

This proposal / quotation is valid for 30 days.

2.9. On-going Enhancements

PBS offers its services for on-going enhancements of software.

PBS expectation is that most extensions requests will be implemented after agreement is reached on a fixed sum for the work. PBS is also agreeable to performing extensions work on a T&M basis. For guidance the PBS T&M rate at this time is $180 exTax per hour.

2.10. On-going Support

PBS has provided for a 90 day warranty period that begins at start of the Rollout phase. During the warranty period PBS will fix free of charge bugs reported via the IssuesList.

Should ProBuild require ongoing support beyond the warranty period, PBS would be happy to discuss an on-going Technical Services Agreement (TSA). For guidance PBS offers a TSA calculated at an annual rate of 18% of the development and licensing costs with the sums payable each quarter in advance.

Support Services

During the warranty period and beyond (if ongoing support is contracted) PBS will provide T3 Support via email and telephone to ProBuild T2 Support persons who have been trained in the use of the Software. PBS will provide the support during normal business hours with proviso that it is acknowledged that there may be need on occasion for ProBuild to obtain support outside of normal business hours. PBS will ensure that telephone calls outside of normal business hours to a provided support number will be responded to. If requested ProBuild will document (via email or otherwise) the specifics of their support request. ProBuild will on request from PBS provide answers to relevant analysis questions, obtain copies of any affected files, and document environmental system settings.

Should there be need to address an Error by release of an update to the Software then the update will be released to ProBuild within 7 days of acknowledgment of need to address the Error by release of an update.

ProBuild must advise PBS of the Error Classification of each Support Request using the priority classifications 1, 2 and 3 as described below.

"Priority 1" means an Error that renders the Licensed Software inoperative or causes the Licensed Software to fail catastrophically.

"Priority 2" means an Error that affects performance of the Licensed Software and degrades use of the Licensed Software.

"Priority 3" means an Error that affects performance of the Licensed Software, but does not degrade use of the Licensed Software.

PBS shall address Errors in accordance with the following protocols:

Priority 1 Errors: PBS shall make reasonable attempts to acknowledge Priority 1 cases within two (2) hours from the time that the case was placed and to initiate the following procedures: (1) assign specialists to commence correction of the Error; (2) provide ongoing communication on the status of the corrections; and (3) commence to provide a Workaround or a Fix.

Priority 2 Errors: PBS shall make reasonable attempts to acknowledge Priority 2 cases within six (6) hours from the time that the case was placed and to initiate the following procedures: (1) assign a specialist to commence correction of the Error; (2) commence to provide a Workaround or a Fix; and (3) provide escalation procedures as reasonably determined by PBS support staff.

Priority 3 Errors: PBS shall make reasonable attempts to acknowledge Priority 3 cases within twenty four (24) hours from the time the case was placed.