IMPLEMENTING MOBILE SOLUTIONS

Mobile technology can provide business advantage but it can also be a minefield. John Hookham (below) looks at some of the key issues. Part two of a two-part feature.

The first part of this article looked at choosing a mobile supply chain solution and the various hardware options for client-side applications together with the need – if indeed there is a need – for real-time data communications. This second part addresses security, server-side integration, whether there is any benefit in running a pilot project, ongoing deployment issues and the hard and soft business benefits.

To pilot or not to pilot?

The conference room pilot has been a standard part of the ERP (enterprise resource planning) software selection and proof-of-concept process for many years. And many suppliers and purchasers apply this same approach to mobile solutions. However there is little, if any, value in piloting a mobile solution providing you take care when selecting the solution.

The work involved in setting up and running a pilot project can be significant and is often equivalent to that associated with installing and configuring a full enterprise software solution. To run an effective ‘pilot’ it will be necessary to address the security issues, configure the client software, and integrate the mobile solution with the corporate systems. It is unlikely that the IT department will undertake these tasks lightly – or wish to repeat them for a number of different potential suppliers. So providing the selection process is sufficiently rigorous, the best approach is often to start with a full live implementation.

This direct approach has been taken by a large UK based multi-utility company – enabling it to start to reaping benefits within a few weeks rather than the several months it would have been if a traditional pilot scheme had been run prior to implementation.

Firewall security

Corporate data security and integrity are a worry for all organisations. Consequently, the IT department will have concerns about opening up the firewall to allow mobile devices to access and update information in the corporate or enterprise systems.

Even if just one or two devices are being used, the security issues and risks will be the same as for a full implementation consisting of dozens of mobile devices. You will need to re-configure the firewall and carry out security testing, especially if the mobile devices are using GPRS/GSM or other wireless communications. There is less of an issue if cradle-docking devices are being used, as these would normally reside on the corporate LAN, but it is rare for one single technology to be the only method of data interchange; normally two or three different communication methods for data interchange are used.

Data security

Clearly the hardware device itself will need protection, with secure passwords and user profiles to restrict data access and control which functions can be used.

Overall security needs to be tighter as in many cases the end users will include subcontractors as well as company employees. And most companies will also need to ensure that data is secure when it is being transmitted, by using SSL (Secured Sockets Layer) for web-based systems and PKI (Public Key Infrastructure) for wireless systems using the 802.11 standard. Also, the mobile system supplier may have their own additional encryption technology to increase security levels.

Client-side application

The mobile solution suppliers will be able to provided client-side software that broadly meets your required specification, but to operate in the everyday environment some customisation will be necessary.

For example, most service management companies need to record standard information such as start time, work duration, etc, whereas specific data that needs to be recorded such as meter readings, chemicals and the amounts used will normally have to be added into the client-side application.

Equally, the engineer may need to receive the feedback and comments from the previous visit or visits and be updated with other outstanding work as part of the current service visit. The client-side application will have to be configured to enable the engineer to work effectively using the new technology.

Many pilot implementations and even full system implementations can become protracted or even fail due to project creep; additional requirements are added, or procedures are modified during the implementation without a full (or any) assessment of the real business benefit being made. One way round this is to start the project with a 'vanilla' implementation, where the deployment mirrors the existing business processes or includes only those changes that have been clearly identified as being of benefit. Adopting this rigid approach will allow a rapid rollout to the entire workforce.

For example, there may be significant business benefits in allowing the engineers to print invoices at the customer site when the work has been completed, but such a change is best left as a phase two action; some engineers will forget to print the invoice, the customer may be expecting the invoice through the normal channels and may assume the printed document is some form of clarification of work done rather than the actual invoice.

Situations such as these muddy the waters, preventing you from assessing whether the mobile solution is providing business benefits for the company and your customers.

Server-side integration

After collecting the data and transferring it to the central servers, you still face the major step of updating the corporate systems. Most suppliers will provide software tools to validate and check the data before updating the database. However, there may be additional licensing requirements due to increased usage. There may also be other issues around licensing, particularly if a third-party mobile solution is generating the data that is being transferred to the corporate system.

Some corporate system suppliers will even require a supplementary licence to allow any third-party software to connect to their applications. And even when any licensing issues have been resolved, there must be a clear understanding of who is responsible in the event of any system errors or corruption to the corporate database.

Ongoing deployment issues

As with most enterprise system deployments, there is a continuing workload that needs to be planned for as part of the project. But with mobile implementations, two additional areas have an impact over and above those found with ERP and CRM systems.

Firstly, the end users of mobile systems tend to be more vocal and demand more new functions, such as access to online maps and technical documentation. At first this may seem to be a simple and straightforward requirement but since large amounts of data may need to be transmitted, this can dramatically slow response times and render the system unusable.

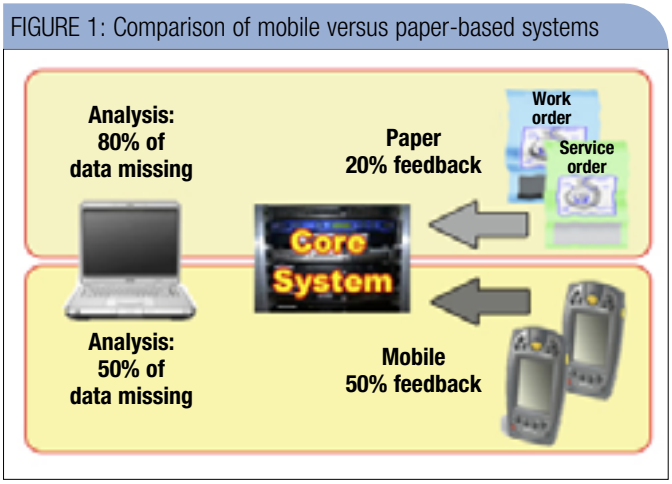
In this instance it may be preferable to store the documentation – such as health and safety procedures and technical data, etc – on the device itself, and rely on satellite navigation systems and devices to replace the requirement to download maps. But you will also need to put in place a business process to ensure important data is managed and updated in a timely manner.

Secondly, mobile technology changes at a rapid, almost daily rate and it is unlikely there will be one type or version of mobile device deployed across your entire organisation. And even if the physical hardware does not change, inevitably the operating software will be updated. Consequently you will need a verification process to ensure the system still functions correctly before deployment in the real world.

Show me the money

Traditionally, companies have been sold software solutions such as ERP on the basis of a financial payback – reducing inventory, increasing stock turns, increased efficiencies, reductions in labour, etc. In many cases the return on investment has been non-existent, or at best difficult to prove. Yet many suppliers still insist on showing the 'value' of their solution and will illustrate the potential payback using spreadsheets and generic cost saving models, to demonstrate the 'hard' business benefits.

FIGURE 1: Comparison of mobile versus paper-based systems



Invariably these benefits are measured in pounds saved by efficiencies in data collection. For example, in the 'before' situation, 20 minutes will be spent by engineers writing data on work orders and then re-keying the information into the service management or computerised maintenance system. In the 'after' situation this will drop to, say, five minutes with the engineer entering the data only once into the handheld device and an automatic data transfer to the central systems – saving 15 minutes per engineer per day, saving £X per day or £XXXX per year and giving a system payback in Y months.

For many organisations these types of cost savings models are unrealistic and the system will not generate the hypothetical savings predicted by the salespeople. However, companies have found real payback in 'soft' benefits. For example, one cement manufacturing company found it difficult to carry out all its preventive maintenance inspections and in particular feed back the results. As a consequence only 20% of the full inspection regime was being recorded, and even this was a burden. After implementing a mobile data collection system, the level of feedback increased to around 50% (see Figure 1). The company gained better visibility of the actual work being done – especially on the 'look, see, listen' checks where, before the mobile system was deployed, very little information was recorded and fed back into the corporate system.

In the service management environment, companies have also been able to collect data about 'off-contract' engineering work. This is work carried out by the engineer that falls outside the scope of the negotiated contract, and so theoretically could be charged for. This additional information provides a true picture of the work being done and level of service provided, which is extremely useful when the contract has to be re-negotiated.

Previously it was usually clear which contracts were profitable and which were unprofitable but often there was no real information or understanding as to why. An increase in the quantity and quality of data has enabled these service contracts to be managed in a more professional way – as Lord Browne of BP says: "What gets measured gets managed."

And so provided that companies define and understand how mobile technology can impact their business, there is no reason why significant benefits cannot be gained. This will provide a competitive edge and improve overall efficiencies, leading to improved profitability.

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