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open your mind

introduction

It's time technology used common-sense rules and objectives to deliver genuine business benefit.

As consultant, manufacturer, implementer and outsourcer, HP's unique blend of technology expertise, vision and know-how, supported by the industry's broadest open partnering strategy, makes it ideally placed to fulfil such a promise.

We're committed to building solutions that enable business to take advantage of the full power of the Internet. Open-minded solutions, driven by open-minded people: the kind of people who disregard traditional constraints and aim only at what they need to achieve.

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Railways, electricity, the telephone, the PC – it is inconceivable that successful companies could even exist without them today. Their introduction changed our society, they changed how we work and they broadened our horizons.

Mobile technology can do this and companies are more than ready to use it. In fact, clever companies are always looking to see how they can take advantage of it. But there is a caveat. Those same companies have to see how technology can deliver business value. Unless it does there is no point in having it.

This edition of Open Mind draws on the experiences of HP and its customers to give ideas and examples of how, when and where mobile technologies can be harnessed to achieve competitive advantage and deliver real business value.

searching for the holy grail of mobile



Neil Eke

Ask Neil Eke, Principal Consultant, HP Services, about the current market perception of mobile technologies and he's unequivocal. "There's been a

huge amount of hype and confusion", he says. "Companies are struggling to understand the business value and return on investment that mobility delivers. Consequently the rate of adoption has been slow." But Neil is equally clear that, deployed properly, mobile technologies can bring significant benefits.

Take York Health Trust. Over eighteen months ago Compaq, part of the new HP, implemented a wireless LAN network for them. More recently, it added the ability to access patient records and clinical information. Consultants are equipped with HP iPAQ PDAs. From a patient's bedside they can now access and update his or her medical records. They can look at previous case notes or pathology information. It's improved both efficiency and patient care.

Another example is Starbucks Coffee. In two of its Central London coffee shops customers can now connect to their company's corporate network, or the public

Internet, through a wireless local area network (WLAN) installed by Compaq. Co-developed with T-Mobile, it allows customers with time to spare to catch up on their e-mails, prepare presentations or find information they need. It's providing a useful service, which enriches the customer's experience of visiting a Starbucks establishment.

These are just two of many projects HP is involved in with organisations such as leading high street banks, airlines and the police. So what's the secret for success?

the art of the possible

Neil is clear: "It's important to break down departmental silos and focus on the business processes", he says. "Starting from a departmental viewpoint limits the opportunity for creating real value. You have to identify company-wide processes that will benefit from mobile technologies if you want to gain the maximum benefit."

To help organisations HP has developed its 'Art of the Possible' workshops. In these, a mix of line of business and IT managers are brought together to assess an organisation's value chain and where mobile technologies could help. Neil explains: "The workshops perform two functions. Firstly we explore and demonstrate what can be done today. That's important, because, with all the hype which

has been generated, many people don't understand what is actually available. Secondly we look at their specific value chain to identify the business areas where there is a good return on investment from using mobile technology."

Key factors in this process are identifying who the mobile workers are, the information they need and how frequently they use it. The answer is not always obvious, as Neil explains: "When we talk about mobile workers most people immediately think of sales people or executives who travel. True, these are mobile workers, but there are others who may never leave an organisation's premises. The consultants in a hospital, building maintenance crews or warehouse people can be just as mobile, in the sense that they need access to information wherever they are. That's what the whole process boils down to, identifying the value of having time and location independence."

Once potential project areas have been identified, HP then helps companies investigate them further and build a business justification and return on investment plan. Once again, Neil is keen to point out that it may not be the most obvious areas that give the greatest return, which is why a careful analysis is required.

"it's important to break down departmental silos and focus on the business processes"

**“it is important
to simplify the
users’ experience”**



lessons learned

With HP having been involved in a wide range of projects, as well as implementing mobile solutions itself, what are the lessons it has learnt which improve the chances of a successful implementation?

According to Neil, many companies worry that the technology is moving too fast and are reluctant to take the plunge, for fear that whatever they implement may be obsolete very quickly. In reality, though, this fear is unnecessary if the underlying infrastructure is designed correctly.

HP’s Next Generation Mobility Architecture, for example, provides an end-to-end vision for providing mobile solutions. It encompasses the entire infrastructure which is necessary for a successful solution, from the front-end devices, through the network to the back end systems. The key here is that the architecture is device independent, allowing information to be sent and received by phones, PDAs, kiosks or even digital TV. Designing the infrastructure in such a way eliminates the risk of obsolescence and provides a growth path for the future.

The second lesson HP has learnt is that it is important to start small and achieve real

benefits quickly. Starting small enables organisations to gain experience quickly, to understand what works and what doesn’t. It’s also important from the point of view of gaining sponsorship. In HP, for example, senior executives were amongst the first to try its mobile applications, with the result that they became keen advocates of the technology.

Carefully choosing which functionality to provide users with is important too. Simply providing all the features of a PC-based system will make applications too complex, unwieldy and difficult to use, with the result that people will shy away from using them. A careful analysis is needed of exactly which information is required to support a user’s role, so that only that information is delivered to them.

Finally, it is important to simplify the users’ experience. Mobile devices are complex and there are a number of different elements that can go wrong, from the network being down to configurations needing to be changed. Users need to be shielded from these complexities. An example of how HP has helped develop a simplified user experience is Wireless Connection Manager, software

which enables public access networks to be selected separately.

HP’s experience shows that, implemented carefully and thoughtfully, mobile technologies can bring significant financial and productivity benefits. They can also improve people’s working lives too, as Neil explains. “Mobile technologies have the capability to provide people with information when and where they need it. That gives them more choice and leads to greater control of their working lives. The end result is a workforce that is more productive and more motivated, which makes organisations a better place to work.”

**to book your
“Art of the Possible”
workshop
call 0870 443 6890
quoting reference
020PN01**



customer solutions at work

- With T-Mobile, selected Starbucks coffee shops in London’s Fleet Street are providing customers with wireless Internet access. Starbucks see it as a way to enhance their brand and differentiate themselves from the competition.
- Wiltshire Police are looking to roll out mobile technologies to provide role-based information to police officers wherever they are and reduce the amount of paperwork they have to complete.
- York Health Trust are providing consultants with clinical information at patients’ bedsides using a wireless LAN and HP iPAQs, making patient care more efficient.
- DSS UK Ltd is using HP Jornada 568 pocket PCs and Sony-Ericsson T68i mobile phones to allocate and close call-outs for its 65 field engineers. The time-savings alone are expected to equate to three full-time engineers, with a significant reduction in the cost of voice calls too.
- A leading high street bank is providing e-mail, calendar, contact information and Internet access to 1,200 senior and middle managers using mobile technologies.
- In addition, a leading airline is offering wireless access to data, communications, transactions and other Internet-based activities in their business lounge at New York’s JFK airport, improving their passenger’s flying experience. They are also evaluating in-flight Internet access with Boeing, a service research has shown passengers are willing to pay for.

streamlining communication at DSS UK Ltd

DSS UK Ltd may be a young company, but it is hungry to find new business efficiencies. As a major provider of multi vendor on-site engineering services, part of its work consists of contracts for servicing printers.



DSS' field service engineers used to receive their work allocations in two ways. At the end of each working day a 30 to 40 minute mobile phone call would be made to head office. The day's maintenance visits were closed and instructions for the next received. If urgent or new jobs had to be relayed to an engineer during the course of a day, they were sent to a pager.

The system worked, but it was less effective than it could be and relatively costly. Long voice calls ate into the engineers' time, as well as costing DSS a considerable amount of money – around £80,000 a year. Information had to be transcribed, which meant there was the potential for errors to creep in and several pager messages often needed to be sent to give engineers the full details of a new job.

accelerating communication

"There was potential to make significant cost and time savings by using different methods to communicate with the field service engineers," explains Robert Devlen, HP's principal consultant on this project. "We implemented an end-to-end solution, using Microsoft Mobile Information Server, which enabled information to be sent to the field service engineers via emails and text messages."

The field service engineers have now been equipped with Bluetooth-enabled HP Jornada 568 Pocket PCs and Sony Ericsson T68i mobile phones. At the beginning or end of each working day the engineer uses the phone to synchronise their Pocket Inbox and receive the emails containing the day's workload. This can be carried out wherever they are located.

Urgent jobs that come up are managed differently. For these, emails are sent to a service engineer's inbox. They automatically trigger an SMS message to his mobile phone, containing the first 150 characters of the email. Because this reaches the engineer immediately, it is a superb way of alerting

them to a new job. Also, as it is an SMS message, the engineer can choose to read the SMS immediately or wait until it is more convenient – when they have finished an important conversation with a customer, for example.

The SMS message alerts the engineer to synchronise their Jornada in order to receive the email containing the full details of the job. In practice, however, the SMS message itself often provides all the information he or she requires to understand the nature of the job and identify the client and their location.

significant savings

The system is a big improvement on what was used before and Simon Daughters, Managing Director of DSS is impressed:

"There were major cost savings even in the first few weeks of deployment," he notes. "Our field service engineers worked more efficiently as their routing between service calls was improved. We expect time savings alone to equate to three full-time engineers. In addition we expect to cut IT deployment costs by more than half, as the Jornadas are far less than the £1,500 per person we were spending on portable computers. We also anticipate great reductions in the cost of voice phone calls, which, before this system was introduced, were costing us around £80,000 a year. Receiving call-out information by email and SMS is a far more cost effective solution."

planning for a cost effective future

Matthew Phillips, HP's project manager says: "Some people think it is complex to implement a mobile solution like this. But, in fact, approached in the right way, it can be straightforward. The most immediate part of our task with DSS, was to develop an end-to-end solution for getting job information out to field service engineers. This involved implementing robust software at the back end, in the form of Microsoft Mobile Information Server, and working with Vodafone to provide GPRS data sharing

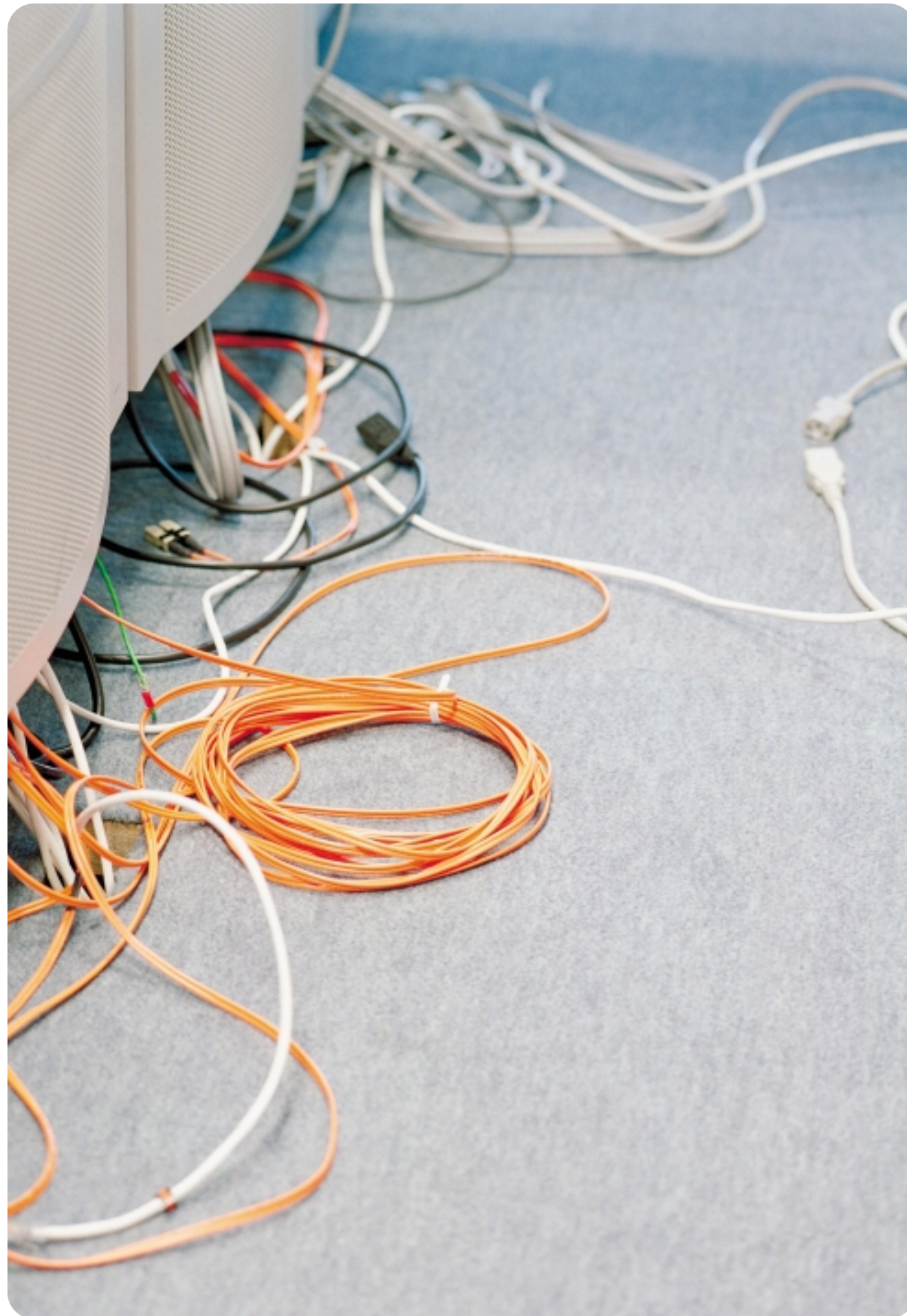
and security via their IPSec service."

"But we were also contracted to ensure that DSS had a secure base on which to build. This meant providing them with robust and extensible solutions, and showing how these might be developed. The solutions we chose – Windows Powered HP Jornada Pocket PCs, Bluetooth for wireless connectivity and solid Microsoft back office software – are all strong technologies which are both tried and tested and extensible. This means they are an excellent platform on which to build future services."

"We are still very much in the early days," says Simon Daughters. "But we have already made great advances and we have further significant development plans. We intend to implement service call closure procedures, where our field service engineers complete a form on the device which is automatically attached to an outgoing email. This can be sent back to head office during a data synchronisation session. It will be much faster and more cost-efficient than requiring a telephone call to close a job. We are also keen to supply technical documents to our engineers, either as documents stored on memory cards or via access to our intranet, and to keep those up to date. Developments like these should help us give field service engineers what is effectively a mobile office."

benefits

- 5% productivity gain because engineers can be routed far more effectively. This is the equivalent of three engineers or £100,000 a year.
- 60% saving on the cost of hardware deployment, because laptops have been replaced with HP Pocket PC mobile devices.
- 50% saving on the annual voice communications bill, as a single, short email synchronisation replaces 35 to 40 minute phone calls



going wireless at hp

Randall Wiley is Managed Services Design and Delivery Programme Manager at the new HP. Ask him what are the two most critical factors in moving to a wireless LAN (WLAN) environment and he has no reservations: "Security and appropriate access", he responds.



Randall Wiley

Before the merger with HP, 98% of Compaq's sites were covered by wireless LANs. The project had started in May 2000. Within twelve months nearly 400 facilities and 23,000

access points had been installed and user feedback was excellent.

Creating a WLAN network brought Compaq a number of advantages. It reduced the cost of cabling and outfitting. Jason Green, Senior Communications Analyst – Planning, Engineering & Implementation, Global Business Support, HP, estimates that the savings were about 25% over traditional wired outlets. And, once a WLAN had been introduced, office moves became significantly easier, as there was no need to re-route or add cables.

For mobile users wireless access is a godsend. With such a large coverage, travelling Compaq employees can simply grab a desk anywhere in the world, and start using their normal systems as if they were in their home location. Even for mobile workers who only use one office, it still makes life much simpler and easier,

as they can gain access anywhere in the building. Randall comments: "Although we haven't measured the productivity gains scientifically, anecdotal evidence suggests that, with nearly 40% of the population having access to WLANs, the savings run into millions of dollars.

So what lessons have the new HP learned from such an expansive implementation, that it can pass on to other companies?

the hostile user

The first is the importance of security, as Randall explains. "On wireless networks you have to treat all users as hostile. That may sound harsh but you have to remember that, theoretically, anyone with a WLAN card installed in their computer can connect to the network. But you also have to balance security against the service you are providing. Making security too tight is actually counter-productive, because it makes it difficult for users to access the network."

Good security consists of two aspects – authentication and encryption. The first ensures that only authorised users can access the network. The second keeps data safe as it travels through it. This is especially important with wireless networks where, even with the most carefully designed implementation, there will almost certainly be

"for mobile users wireless access is a godsend"

“the benefits
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leakage outside an organisation’s premises.

Two factor authentication is one of the best methods of ensuring that only authorised users can access the network. It works on the basis of every user having something they own and something they know. For example, HP is using a smart card, containing an encryption key, plus an individual password. These are changed automatically at regular intervals during log-in and can quickly be invalidated, if people leave the company for example.

The Wireless Encryption Protocol (WEP) was developed as a standard for encrypting data as it passes across the network. Randall believes this is fine for small offices and home use, where data is not particularly sensitive, but not for larger companies. “In the middle of 2001 it became clear that there was a flaw in WEP”, he explains. “It enables hackers to use a relatively easy algorithm to crack the encryption. Once this is done they can view all the data passing across a company’s wireless network.”

Randall’s recommendation is to use a Virtual Private Network (VPN), which provides a much better method of encryption. “On a scale of one to ten”, he says, “VPN encryption is ranked ten. It may be more expensive but it does give the protection against hacking that companies need when sensitive data is involved.”



appropriate use

Another crucial factor that needs to be taken into consideration with wireless networks is the type of users being connected. Jason Green, HP, takes up the story. “Currently wireless LANs operate at 11Mb/s”, he says. “Although that’s quite fast it is shared with whoever else is using the access point. That’s fine for such activities as web browsing, e-mail and general office applications, convenience use you might call it, but it doesn’t provide the bandwidth for critical applications such as ERP or CRM. Randall concurs: “Before giving users wireless access you have to be sure it is appropriate”, he observes. “It is not a panacea yet, but it soon will be and the savings it delivers will grow substantially.”

Today the new HP is combining the experience and expertise of pre-merger Compaq and HP to upgrade and improve its wireless networks, expand the bandwidth and tighten the security even further. Being an early adopter has given it a great deal of practical experience. Randall concludes: “By starting at the leading edge of the technology back in 2000 we have learnt the hard way what works and what doesn’t. Even so the benefits far outweigh the challenges we have had to overcome. Our experience, and the lessons we have learned, are of enormous value in helping us to deliver cost effective, efficient and secure solutions for those customers who are looking to adopt wireless technology.”



Starbucks serves more than coffee

Customers at selected Starbucks Coffee Central London stores are now being served high-speed Internet access with their coffee. Under the slogan “The Internet at Starbucks – drink deep, think deeper”, customers with a WLAN card installed in their PDA or lap-top can check their e-mail, surf the web, download files or access their corporate networks, all at super speeds and in coffee house comfort.

The service is provided by a WLAN with a broadband connection to the Internet. Using the T-Mobile Hotspot service, it is significantly faster than dial-up connections, with speeds of up to 1Mbps. Consequently, it’s capable of handling many users simultaneously, as well as bandwidth-demanding applications.

Now people can send messages, download a presentation or look up

that vital piece of information with their choice of coffee. It’s a clear sign of a rolling revolution that will see wireless access become more and more ubiquitous, giving people greater convenience and control over how and when they work.

To find out more on this service visit: www.t-mobile.co.uk/hotspot



achieving real business value

Patrick Brans' book 'Mobilize your Enterprise*' has just been published. Here he answers questions about how he believes wireless technology can help companies achieve competitive advantage.



Patrick Brans

Congratulations on your book, which has received excellent reviews. Why did you decide to write it?

"As a Solution Principal for Hewlett-Packard I talk to many customers about mobile solutions. About a year ago, when I decided to write the book, there was a lot of confusion and hype in the market place. There was plenty of information, but much of it was contradictory, and there wasn't one place customers could go to make sense of it all. Also, what information there was tended to focus on the technology rather than the business value that could be gained from it. So I decided there was a need for a reference, which not only explained what technologies were available, but the structure of the industry and how the technologies could be applied for competitive advantage. Hopefully that is what the book achieves."

In the book you say that understanding where to apply mobile technology might just be crucial to a company's business. What do you mean by that?

"Technology today has a track record of changing how we work much faster than ever before. Only a few years ago sales people on the road had to plan their day around finding a public phone. Today we take it for granted that we can call anyone from anywhere, whenever we want to. The mobile phone revolutionised how we work and communicate and companies know they would be less productive and competitive if they didn't use them.

Wireless data technologies will do the same. Even with the advanced communication tools we have, lack of

information still constrains the effectiveness of many workers. For example, even if a sales person has prepared meticulously for a customer visit, there may still be questions he cannot answer – about unusual pricing, availability or product configuration for instance. Today he or she would have to call someone, who may or may not be available, or wait until they get back to the office to find the information. Either way it interrupts the sales call and means extra work. With wireless technologies that information can be supplied immediately, improving the sales person's productivity and allowing sales to be closed faster."

What job functions do you see benefiting from having access to wireless technologies at the moment?

"The kinds of people it makes sense to equip first are those where mobile technology will give a quick return on investment. These are most likely to be functions where information is needed in real time and having it will make a big difference to the business processes they work with. Choosing users who are keen to work with new technologies helps ensure mobile projects are successful. In addition picking areas which have a relatively high profile can be good from a public relations point of view, as it shows a company to be forward thinking. Given those criteria I think sales people, service engineers, consultants and travelling professionals will probably benefit most from mobile technologies in the first instance."

In your book you make a strong case for starting to use mobile technologies now, but it seems the take up is quite low. Is that true and, if so, why do you think that is?

"The take up of any technology always starts with early adopters, before it becomes

mainstream, and wireless data is no different. Visionary companies are already quite advanced, but many companies are experimenting with pilot implementations. Consequently I would expect adoption to become much more widespread in about a year's time. But a key point to take away is that those companies who start early, get a big head start."

What would be the single, most important piece of advice you would give to a senior executive considering mobile technologies?

Start now. Wireless data technology provides a new business tool. As we have seen throughout history, if companies don't keep up with the latest business tools they fall behind and, sometimes, even cease to exist. There are ways of starting now with minimal risk. Use a spiral deployment model. Pilot the new business tool and achieve a return on investment. Then use the savings to fund further deployment. In this way, you will learn how the technologies can be used to generate business value and competitive advantage, without dishing out large sums of money to do so."

*Patrick Brans' book – Mobilize your Enterprise: Achieving Competitive Advantage through Wireless Technology – is published by Prentice Hall, ISBN 0-13-009116-2

"if companies don't keep up with the latest business tools they fall behind"



delivering mobile applications

In early 2002, HP had undertaken a trial providing its employees in the field with mobile applications. Twenty five users, across the support, sales and consultancy groups, had been equipped with an HP Jornada 568 PDA and GPRS mobile phone. Through the PDA they could securely access their e-mail, corporate directory, Microsoft applications, instant messaging and browse both HP's intranet and the public Internet. HP has now taken this a stage further.



Ian Brooks

The results were impressive, as Ian Brooks, Head of Internet Strategy, explains: "Even with only twenty five users the trial gave us a return on

investment of 40%. When you add the improved employee motivation, and the ability to provide customers with a better service, the project clearly demonstrated the potential of mobile technologies to improve our business."

expanding the user base

In May 2002 the results of the pilot were presented to the General Managers of HP's UK businesses. With the benefits that had been gained, it was decided to broaden the deployment of the technologies. But, equally, Ian and his team didn't want to move too fast. "There was a real danger of rolling out the new technologies faster than the organisation could digest", says Ian.

The pilot phase had been in a small, closed community, so it was easy to support the users on an informal basis. Widening the audience meant more formal processes had to be developed and adopted. Consequently it was decided to limit the next phase of deployment to 180 users.

Ian explains: "We knew we would have to formalise the support processes as the number of users grew. So we put a lot of effort into that before we extended the project."

A key component was training. If people find new technology difficult to use, they may ignore it. The team, therefore, put particular emphasis on making sure the training was designed and implemented well. Most of it was carried out centrally, but there was one exception.

A portion of the new users were service engineers, based in HP's Birmingham office. Because of their work, it wasn't possible to bring all of them to the central training centre. The team therefore adopted a 'train the trainer' approach, educating several of the team to a higher level, so they could provide local help for their colleagues. The approach has worked well and will be adopted in similar situations in the future.

In addition to the training a help desk was established. As testimony to the thoroughness of the training, and the intuitive nature of the technology, on average it only receives one call every few days.

Ian is pleased with the results. "By taking a phased approach to the implementation", he says, "we've experienced very few problems and over 180 employees are now using the technology in front of customers".

"a key component of the support was training"

"fast, accurate
communication
is imperative"

"hp sees mobile
technology as
a key driver for
business success
in the future"

continuous evolution

With the merger of Compaq and HP, the PDA technology is now being deployed to 750 users in the 'new HP'. "Before the merger, Compaq had built strong capabilities in deploying wireless LAN technology" Ian explains "while HP had focused on GPRS mobile applications. Now we have the opportunity to bring those strengths together to create even better solutions".

The system is continuously evolving too, as lessons are learned and new technology becomes available. Currently Ian's team are reviewing newer PDAs to see how these might extend the users' abilities.

Security was a key concern at the pilot stage and a great deal of effort was put into developing a fool-proof virtual private network (VPN) solution. The users must have a VPN client plus an RSA security key to access HP's internal intranet. From these the system automatically generates a pass key and authenticates the user.

Another avenue being explored is escalation management. If there are problems at a customer's site HP has a predetermined escalation procedure. Ian explains: "Depending on the severity of the incident, many parts of the organisation and levels of management can be involved. Fast, accurate communication is imperative. We are looking at how we can provide a single web page with all the latest information. We are even looking at the feasibility of giving a PDA to our customers, to keep them fully up to date too."

a strategic imperative

Ian concludes: "HP sees mobile technology as a key driver for business success in the future. Peter Blackmore, Vice President, Enterprise Systems Group has described mobility in the Enterprise as a 'strategic imperative'. Through this project we gained concrete business benefits for HP and learned how best to apply the technology for others. This has stood us in good stead and will continue to do so as other organisations look to mobility for a strategic advantage."



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