

Reaching the wireless data tipping point

The idea of 'enterprise wireless data' – the mobile industry's term for wireless access to business systems - has been around for very many years now and Quocirca has reported on trials taking place in this area on a number of occasions since 2002. However, the initial pilots don't seem to be moving to broader rollout very quickly. The key question is therefore what is inhibiting large scale take-up? Have initial investments formed a good foundation for the future or will a change of tack be needed? With a particular focus on the use of smart handheld devices, we consider what it will take to reach some sort of tipping point enabling pervasive wireless application access to become a genuine mainstream reality.

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RESEARCH NOTE:

The information presented in this report was derived from interviews with senior IT influencers and decision makers. Respondents were qualified based on their ability to answer questions on strategies and architectures to support mobile initiatives. 240 respondents were randomly selected from a mixture of medium and large organisations across Italy, Germany and the UK. The study was commissioned by Intellisync and completed in July 2005, with all research conducted on an independent basis by Quocirca Ltd.

MAIN POINTS

- **Most wireless data activity involving handhelds to date has been piecemeal**
The majority of initiatives are either tactical or still at the pilot level; fewer than 20% of organisations are working under a co-ordinated strategy. This is despite good user experiences with wireless email on handheld devices and improvements in mobile coverage. This picture has not changed much over the past two years, and although strategic thinking has advanced somewhat, we might have expected to see more of it, along with larger scale adoption by now.
- **But we are still being told that broader rollout is on the agenda**
With a mobile email pilot or small-scale deployment being the typical starting point, development is envisaged in two directions: more wireless email users and more applications on handheld devices. Many employees who have a mobile phone also have a corporate email account, so a significant number of businesses feel there is a potential case for pushing mobile email access deeper into the organisation. Furthermore, most IT decision makers are aware of the potential benefits of broadening the scope of handheld wireless access to embrace other mainstream business applications, such as those from SAP, Oracle, Siebel and others.
- **However, IT departments are questioning whether the investments made so far form a good foundation for the future**
Many developments to date have been based on point solutions providing end-to-end connectivity from an email server to a specific type of relatively expensive device. Whilst this "canned" approach has been welcomed by some as a way to get off the ground quickly, the view is that it is inappropriate for the future. The vast majority therefore have reservations about continuing down this road and only 10% are in favour of the point solution approach going forward. Tellingly, about a third overall think that their investments to date are not future proof. Over half have either had to retrofit activity to policies and standards defined for the future, or say they will need new policies going forward.
- **This shift in mindset is driven by a perceived need for more openness and flexibility**
Going forward, IT departments want to be able to support a range of devices with different specifications, characteristics and price points to deal with the varying requirements of a broader user base. Nearly 90% also consider that the mobile handset market is not yet mature, or never will be, and that devices will therefore constantly change. Given these considerations, virtually all respondents want to be able to keep their options open when it comes to using different types of device in the future, and the ability to support different devices comes top of the list of requirements when considering software to support wireless access to corporate systems. This, together with plans to broaden the scope of access beyond simple email to other applications, is changing mindsets and highlighting the need for a more open approach.
- **Changes in supplier landscape and behaviour are necessary to reach the tipping point**
It is in everyone's interests for the market to reach a tipping point as achievement of critical mass drives opportunity for suppliers along with lower costs, better skills availability and reduced risk for customers. But to invest to the next level, customers need confidence that the solutions they put into place will permit future growth, expansion and flexibility, and many seem willing to draw a line under previous investments and change tack if necessary. Traditional point solution vendors are already cognisant of this and are repositioning accordingly. But organisations would be advised to re-evaluate their strategy in light of the changing requirements we are hearing about. Along the way, it might well be worth IT departments considering vendors, products and services that were designed with open application connectivity and device independency in mind from the outset. At a market level, the provision of such flexibility is the key to reaching the tipping point.

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1. Introduction

Quocirca has been tracking the evolution of remote access to corporate IT systems for a number of years now. We have seen it evolve through a number of stages. Initial developments involved the use of laptops for executives to dial in to corporate systems from remote fixed locations to access email and other applications.

At the same time dedicated data systems were set up for command and control applications for blue collar workers, typically in utilities or transportation and often using bespoke software and devices working over private radio networks. Increasingly, it became possible for laptops to use cellular systems to access data whilst on the move, and the widespread rollout of GPRS (General Packet Radio Systems) and now 3rd Generation (3G) cellular have improved speeds of wireless access to the point that the perception can be that the connection is almost as fast outside as inside the office.

This has led to increased interest in enabling more office applications such as sales force automation and HR systems, to be used whilst mobile, saving cost and time whilst increasing employee productivity and customer satisfaction. Most recently, companies such as RIM (Research in Motion) and Microsoft have rolled out software and handheld devices to enable easy access to email on the move.

Many developments in wireless data have – like the adoption of mobile phones generally in enterprises – been user led. This is certainly the case for wireless email on handheld devices, where any executive worth his or her salt can't be seen out without their snazzy BlackBerry, PDA or smart phone. But we are now at something of a turning point in the marketplace. Most rollouts to date have been small scale. Organisations are now just starting to consider the issues they need to take into account to develop a coherent wireless data strategy as both the breadth and depth of activity increases.

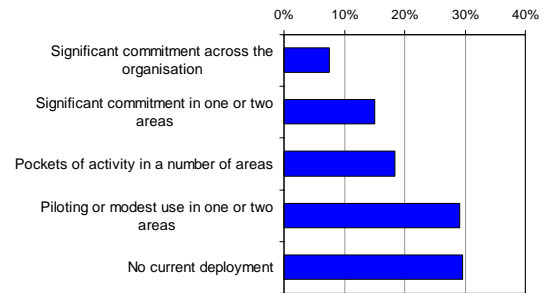
This report examines the current state of play in the wireless data market and looks at the issues the IT and Communications managers should take into account when setting a strategy for wireless data. As a background to this, 240 IT directors or senior managers in the UK, Germany and Italy were polled for their current experience and expectations going forward.

2. Activity is far from mature

2.1 Rollout to date has been largely tactical

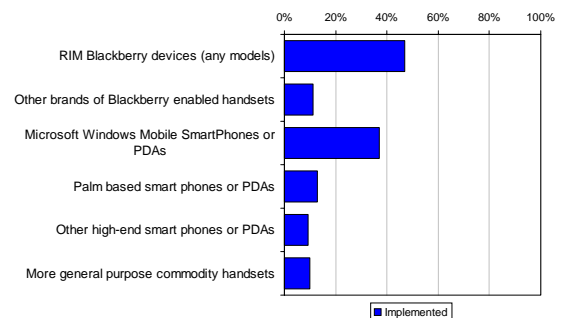
Wireless email adoption is still tactical, not strategic. Most organisations report pockets of wireless email activity across the organisation. Less than 10% state that there is significant commitment across the business (Figure 1).

Figure 1
Deployment of handheld devices for wireless email access



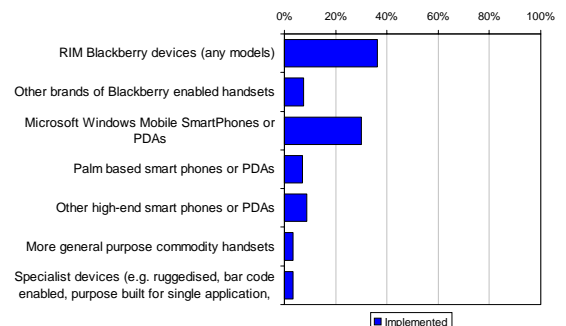
The current piecemeal rollout reflects both the user-led characteristics of mobile deployment, and the relatively high cost devices and/or licence fees associated with the most popular solutions. Most deployments (Figure 2) are on relatively expensive proprietary devices, with fewer than 10% indicating implementation of wireless email on more general purpose commodity handsets.

Figure 2
Devices used for wireless e-mail



Similar trends are seen when we look at implementation of other applications, with most organisations having some sort of experience of using high-end devices for non-email access (Figure 3).

Figure 3
Which of the following have you implemented for wireless access to non-email applications?

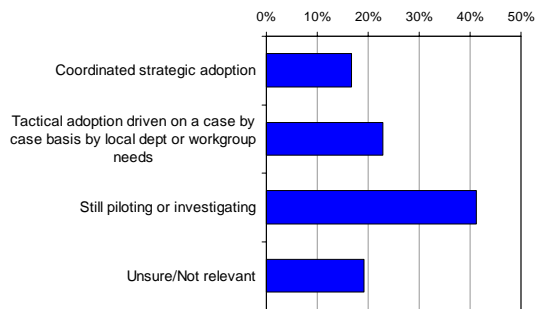


Most of the devices out there at the moment tend to be enabled by proprietary back end systems such as RIM's BlackBerry Enterprise Server (BES) or Microsoft's native Exchange connectivity. Such systems have been fine for "canned" mobile email solutions, and have served many organisations well during their first steps with wireless,

allowing wireless access to be implemented with relatively little effort.

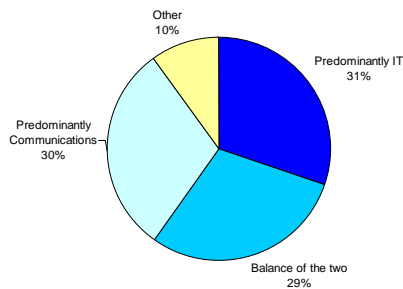
Despite the piecemeal rollouts, experience gained with early implementations have allowed some to move to co-ordinated strategic adoption, which is on the increase and now taking place in almost 20% of the organisations. (Figure 4), This is an increase on the figures shown in Quocirca research published in March this year, although the fact that the respondents to this current research are IT managers means that they are more likely to be aware of strategic initiatives¹

Figure 4
How would you describe the way you are adopting this kind of technology at the moment?



The increased emphasis on strategy across the organisation reflects the increase in the role of IT in the relationship between mobile operators and their enterprise customers. The same March 2005 research from Quocirca shows that the role of IT is increasing in this context (Figure 5).

Figure 5
Is your role predominantly associated with IT, communications or both?

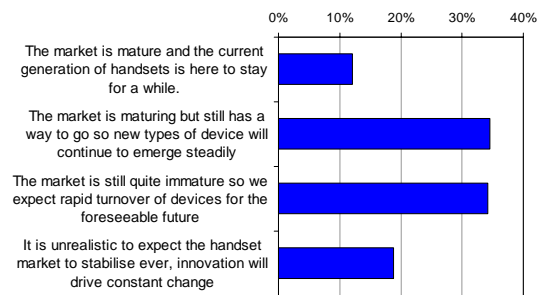


Whilst these observations suggest that organisations are gradually moving to a more strategic basis for their activity, there are still some external factors that perpetuate uncertainty, such as the nature of the device market.

2.2 The device market is very dynamic

As organisations shift up a gear, the number of users increases and the breadth of applications develops, leading to a need for a wider range of devices at lower price points and targeted at different segments of the mobile workforce. Added to this, there is the view that the mobile device market itself is far from mature; only a small proportion (around 12%) of respondents thought that the current generation of handsets will be around for a while (Figure 6).

Figure 6
Maturity of the mobile handset market to support wireless applications



3. The evolution of demand

So far we have seen piecemeal activity and the beginnings of some strategic thinking, but going forward, is there really an appetite for more wireless remote access from handhelds?

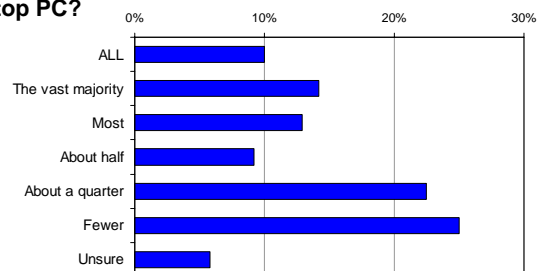
3.1 Future demand for wireless email

As the benefits of wireless email are realised for senior management and highly paid professionals, then organisations will begin to assess whether further rollout could bring further business benefits. There could be benefits in three scenarios: the replacement of laptops with smaller devices, the rollout of handheld email devices as a productivity boosting companion to laptops and the extension of mobile email access further across the organisation to those who would otherwise not be able to connect (e.g. because the cost of laptop could not be justified for them).

In reality, the number who view a handheld device as an acceptable substitute for a laptop is likely to be limited, so we expect the companion device approach to be more relevant in most cases. The question then is justifying the incremental cost of the device for the broader laptop-using community. This highlights the need for an ability to deploy email capability onto commodity devices, as the expense of traditional specialist devices that have defined early adoption activity is likely to constrain the breadth of deployment.

Building on this logic and introducing the third scenario of rolling out mobile email deeper into the organisation to those for whom a laptop could not be justified, it is interesting to note how many mobile phone users also have existing email accounts. (Figure 7).

Figure 7
How many of the employees who have a company supplied mobile phone also have a corporate email account that they access through their desktop or laptop PC?



Given the high levels of mobile phone penetration in enterprises, and the still relatively low levels of high-end

¹ 10% of respondents to Quocirca's research reported in "Beyond the Bit Pipe", March 2005, responded that wireless developments were in line with a firm strategy. This earlier study included a mixture of IT and communications managers. See www.quocirca.com for more details

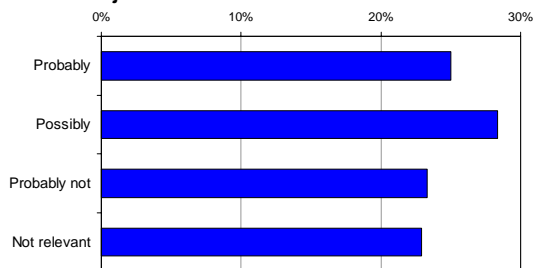
device adoption at present, there would appear to be a significant opportunity for further remote email rollout, if commodity devices could be supported. Figure 8 helps us to understand this opportunity more by job function.

Figure 8: Which of the following roles make significant use of email as part of their job function?

Senior Executives	89.2%
Other Management	86.9%
Field sales teams	54.4%
Field service personnel	51.4%
Accounting/purchasing staff	73.1%
Call centre staff (sales)	41.0%
Call centre staff (service)	49.7%
Admin, secretarial, HR, etc	84.2%
IT Management and operations	90.3%
Other	0.1%

As we can see, highest use of email is by senior executives and managers, who we already know are the early adopters of wireless email. However, there is significant email use in other parts of the organisation, particularly in support functions such as admin and secretarial, accounting and purchasing as well as in IT. Such support functions may not seem obvious candidates for remote email access, but its introduction, if able to be done in a cost-effective way, may deliver business benefits in terms of more work flexibility and the ability to keep communication flowing freely between key personnel, even if they are out less frequently than other staff. Over half of organisations could see some sort of opportunity in this area (Figure 9).

Figure 9
If email could be delivered cost effectively on a suitable handheld device, do you see an opportunity to provide email capability to field workers for whom a full laptop or desktop PC could not be justified?

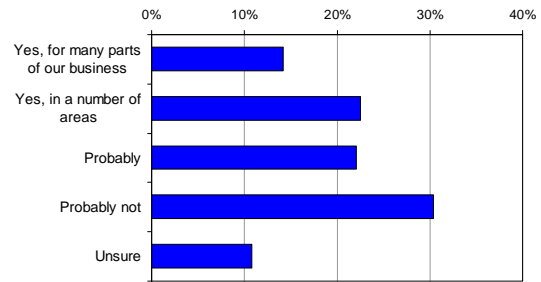


If wireless email could be deployed cheaply on commodity devices that come out of the box with the necessary capability, then further rollout might make business sense.

3.2 Other applications on handheld devices

Many users of email come from departments which will also access other IT systems, sales, field service personnel and admin staff being obvious examples (as we saw in Figure 8). The expansion of applications on handheld devices is therefore seen by many as a natural progression from wireless email. Around 60% of the research sample saw this as relevant to their business (Figure 10).

Figure 10
Is access to other (non-email) applications from handheld wireless devices relevant or likely to become relevant in your organisation? (service, inspection, logistics, etc)

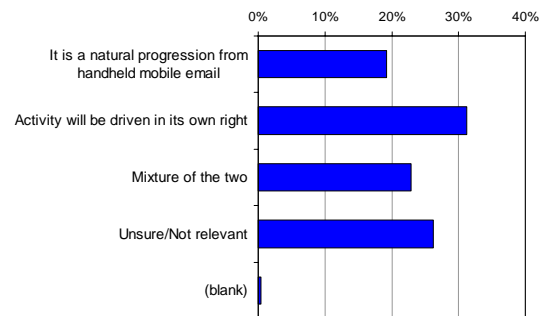


Here, access is likely to be into mainstream enterprise applications for both blue and white collar workers. There continue to be many drivers for broadening mobile data applications to those for whom the use of current technologies is not cost effective, or where the organisation has previously been constrained in fully realising the benefits of remote or mobile working.

As well as the on-going competitive pressure leading to a continual process of change in private sector organisations, governments are pushing efficiency agendas too, aiming to reduce costs whilst improving services to citizens.

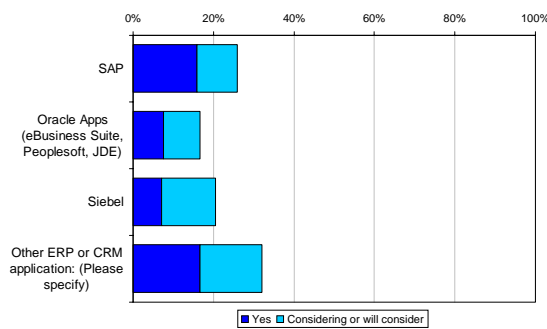
As part of this ongoing optimisation, some see a natural progression from email to other applications, whilst others recognise that there will be separate activity driven as of its own right (Figure 11).

Figure 11
How do you see activity in this space developing?



Either way, it is clear that organisations are starting to take seriously the possibility of using handhelds to access mainstream applications such as those provided by SAP, Oracle, Siebel and others (Figure 12).

Figure 12
Are any of the following applications likely targets for wireless access from handhelds now or in the future?

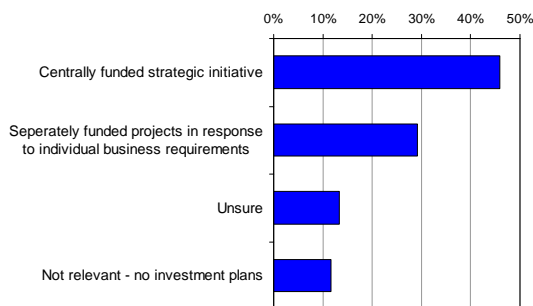


In incorporating access to applications into handheld devices, organisations could benefit not only from greater business efficiency, but also reduce the number of different devices out in the field – for example by exchanging laptops and mobile phones for a single device able to send and receive voice and data. Such developments might not suit everyone, especially senior managers, but it might produce considerable benefits in some parts of the organisation.

3.2 Changes in organisational strategy

As we have seen, wireless email is being adopted in a somewhat fragmented manner at present, by staff groups or departments. Other wireless data applications are typically developed on a departmental basis too – in local government, for example, pilot schemes cover services ranging from parking to social services. Going forward however, there is general recognition that a more strategic approach will be needed (Figure 13).

Figure 13
How do you see wireless and mobility investment being funded in your organisation moving forward?



The majority see centrally funded initiatives as the way forward, but with a significant minority recognising that individual business requirements will drive investment. How these changes come about will depend on a number of factors within organisations: the relative benefit of point solutions for each application versus consolidating applications versus implementing access solutions with the ability to connect to multiple applications. There are then considerations around budget allocation processes and how strategic the IT department is able to be, based on limitations of funding or resources.

4. Considerations for organisations

The organisation has to balance several challenges at once when considering scaling up its initial investments and putting together a comprehensive mobile data strategy.

Firstly, there are the business considerations such as how to learn lessons from pilots and early adoption and how to present the benefits of wireless data to justify further investment in a coherent strategy through a well thought out business case. All organisations, both public and private, face limited resources and a solid business case is needed for any IT investment. Pilots can provide valuable information on issues such as usage patterns to assist with access choices, device acceptability, ease of use, and ideas for future applications. They can also help to set out the business benefits, particularly ‘soft’ benefits such as improved communication and better customer care².

Secondly, technology choices remain complex in this area. There are three main areas of choice: wireless access, devices and corporate IT infrastructure. These are to some extent interlinked and all must be considered together when setting out the strategy.

4.1 Access

The technology in terms of the actual wireless or mobile access has improved, but there is more choice around, adding to the complexity for the IT or Communications department. In particular, recent improved availability of high bandwidth WiFi connectivity means that it has become a serious option for those needing to connect to send or receive large quantities of data. However, service availability and billing options remain confused, and connection is not necessarily simple or secure. Organisations must therefore look carefully at what sort of data communication is required by what groups of users in order to maximise their connectivity at the most cost-effective price.

4.2 Devices

The device choice remains complex. At first sight, there would appear to be opportunities to rationalise the number of devices existing users carry – smartphones could replace both mobiles and laptops for some users, in particular. However, earlier research by Quocirca found some scepticism from users that there would be significant migration from either phones or laptops to smartphones.³ A proliferation of devices seems certain to remain, and is to be expected, given the range of user groups and applications to be found across the organisation. Anecdotal evidence from organisations which have implemented wireless data suggests that the device is a significant bone of contention with users when solutions are rolled out, and therefore trials might include different devices to ensure that the final choice meets as few objections as possible.

The continued proliferation of devices presents challenges to the IT department. More devices mean more overhead in terms of user training, helpdesk complexity and, of course,

² For further discussion of the issues involved in business case development for mobile wireless, see Quocirca’s report: Enterprise Wireless Update: Scaling it up Summer 2004 (available from www.quocirca.com).

³ This issue is also discussed in the report referred to in the above footnote.

diverse procurement contracts. IT departments are more or less resigned to this in the mobile environment – device turnover at around 6 months is much shorter than preferred service life levels of 18 months to 2 years, and users will have strong preferences in terms of the device on offer – rather like the company car, issues of status come into play. Some form of policy along the lines of a company car policy – choice from a reasonable, but limited range of devices – seems the best way forward.

Security is also a key concern. IT departments have largely come to terms with the use of laptops for remote access: measures such as anti-virus software, personal firewalls, VPNs and authentication solutions have been put in place across organisations to improve security. Against this background, wireless is just another access mechanism, albeit still somewhat of an unknown one, and needs to be kept under surveillance – as do users with their frequent disregard for the organisation's property! Smartphones and PDAs are somewhat lesser known quantities. In principle, they can be infected in the same way as a laptop or PC, but the very proliferation of device types and lack of standardisation at the moment reduces the risk of attack from malicious sources. This is likely to change over the coming two years, however, as device operating systems begin to standardise and their numbers are sufficient to prove tempting to those with mal-intent. IT departments need to think now about appropriate security measures, though at present, the most urgent security concerns are around users, who still have a distressing tendency to lose kit, use sticky labels to attach passwords to the laptop and generally prove a menace all by themselves.

4.3 IT infrastructure

There are essentially two ways of moving IT infrastructure forward: either adopt end to end solutions that are specific to a particular application or function, or use a generic development and deployment platform that may be re-used for multiple applications. It is important to note that this is not a new problem in IT. Over the years application servers such as IBM Websphere, BEA Weblogic and the Microsoft .Net environment have been developed precisely to avoid developing applications on a range of proprietary platforms.

Canned solutions for wireless email – such as those based on the RIM BlackBerry platform or native Microsoft Exchange capability – have the advantage of being secure, straightforward to install and easy to maintain. They also cost relatively little in terms of development and systems integration effort, so it is not surprising that they have formed the foundation of mobile operator 'seeding' programmes targeted at senior executives and other VIP users. Major software vendors such as SAP and Siebel also have their own point solutions in the form of mobile extensions which can be bolted on to specific applications to enable laptop and other device access.

The problem comes when trying to scale things up for multiple applications. A variety of point to point solutions is all very well, but only covers one application at a time and can be inefficient in its use of IT resources from a skills, operational overhead and development and integration perspective. An uncoordinated approach can also end up very costly in terms of licence fees, with less opportunity to take advantage of volume discounts and licence re-use.

Finally, the piecemeal approach can be both expensive and constraining if each solution only supports a limited number of devices and prevents the organisation from taking

advantage of other cheaper handsets and volume purchase agreements.

An alternative approach is to use a generic development and deployment platform which can be used for multiple applications and can support multiple devices. Such a platform ideally also provides a coherent and standards based development, integration and operational environment, implementing functions such as security, data synchronisation, device management and maintenance consistently across all types of front ends and back ends. The end result is streamlining at both the commercial and technical levels, reducing the cost, risk and time associated with incremental rollout of either new applications to existing users or existing applications to new users. Avoiding the need to implement an entire new software and communications stack every time there is a new requirement can thus be of significant benefit.

There are a number of players with solutions that deliver such capability and even the traditional point solution vendors such as RIM are moving more in this direction. Ironically, many generic mobile platform players developed canned email solutions layered on top of their platforms in response to the pure email driven nature of the early market, but they often fell foul of the popularity of and acceptance of the BlackBerry brand and struggled to differentiate against it. With the evolution of requirements and mindsets as we have seen, however, the relevance of this kind of generic platform approach is becoming more obvious.

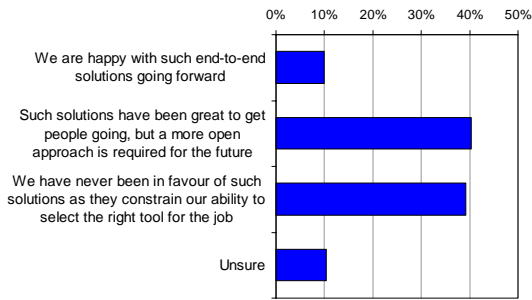
Having said this, however, there are also risks with this approach – trying to be too ambitious may be a recipe for inaction. In addition, it places more burden on the IT and business strategy functions to think through the organisation's future requirements as well as the immediate projects and needs at hand. This can sometimes be difficult when a business unit or department has made up their mind on a particular solution and allocated budget to it as a result of peer influence (e.g. colleagues in other departments or other companies).

5. Implications for suppliers

All of the evidence suggests that organisations really do want to expand the use of both wireless email and other applications on handheld devices, but the challenges we have discussed are holding them back. These challenges cannot be solved by the IT department alone, without the help of technology vendors and service providers. There are therefore many implications for IT infrastructure suppliers, the device manufacturers and for mobile communications operators and service providers as the shift away from end-to-end solutions towards a more open approach continues.

The clear feedback from IT management that constrained single function solutions are rapidly approaching their sell-by date should focus the minds of some suppliers, if they are not already focussed on delivering more openness and flexibility (Figure 14)

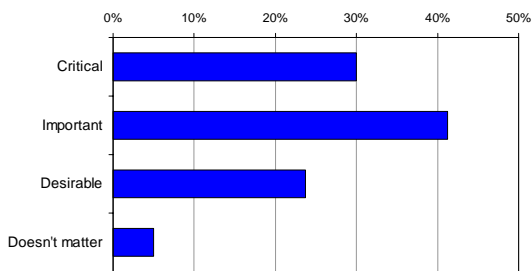
Figure 14
What is your attitude to offerings that provide end-to-end solutions (from the server through to the handset) optimised for specific applications and devices?



The vast majority of respondents (nearly 80%) have either never been in favour of such solutions or want the approach changed for more openness going forward.

There is also a clear message from our respondents to suppliers who doubt the need for platforms to become as device agnostic as possible (Figure 15).

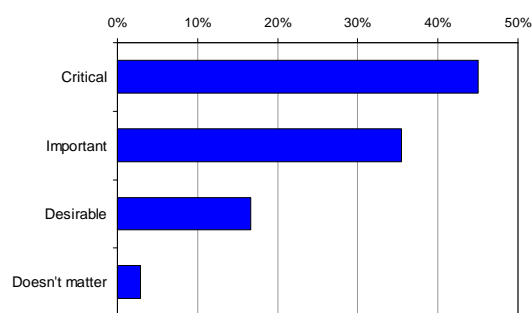
Figure 15
How important is it for the mobile industry to offer a range of devices with different levels of sophistication at different price points to suit the needs of different users and applications?



Users have experienced relatively expensive high end devices to date, and are beginning to realise that such devices will not be cost-effective if further rollout is to be envisaged. The alternative - high levels of subsidy by mobile operators, - may not be economically feasible for large numbers of users.

For those running IT departments and wondering if they are the only ones concerned about lock-in in a world dominated by one brand of email device, don't worry, you are not alone. The vast majority of your peers also believe it is important to keep their options open when it comes to handset choice (Figure 16)

Figure 16
How important is it to keep your options open in terms of ability to use different types of handsets in the future?

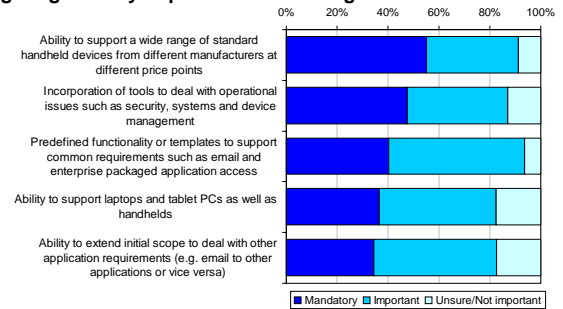


OEM programmes in which platform vendors licence components to handset manufacturers go some way towards

dealing with this need, but it still constrains choice to those vendors and devices that are included in the programme. In an ideal world, IT departments want the freedom to choose whichever devices are the most fit for purpose based in the job at hand.

When we pull everything together, the criteria for selecting a future proof mobile platform are not surprising (Figure 17)

Figure 17
When selecting enabling technologies such as servers and middleware for future project requirements, how much weighting would you put on the following criteria?



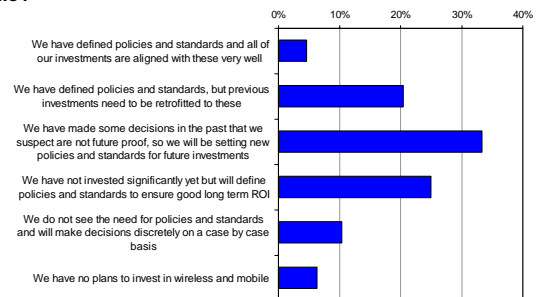
6. Conclusion

Wireless is moving rapidly up the organisation's – and hence the IT department's – agenda. This is happening across private and public sector organisations. The mobile operators have been successful in encouraging pilots of easy to use smartphones and other small form-factor devices to show influencers in the organisation just how easy access to email and other applications on the move can be.

However, it is becoming clear some things will have to change in order to reach a 'tipping point' at which wireless access becomes a part of the IT mainstream. This move to high volume implementation will have benefits for all concerned: end-user organisations will be able to improve their business performance and will benefit from improved operational, commercial and IT efficiencies, along with greater economies of scale. Suppliers will have more opportunity for market development and volume sales.

It is clear from our research that many IT departments realise that change must happen, and are questioning their investments made to date (Figure 18).

Figure 18
Which of the following statements best sums up your overall position and plans for the future with regard to wireless and mobile?



About a third of our survey said that they suspect decisions made in the past are not future proof, and just over 20% say that they need to retrofit previous investment to a newly defined strategy.

This has major implications for platforms going forward: all in the value chain will see a shift to more open platforms supporting a wider range of applications and devices. We have seen the traditional point suppliers move in this direction, and major mobile operators are beginning to launch more device agnostic own brand alternatives to the BlackBerry solution.

Mobile operators will have to do more in advising their enterprise and public sector clients on the IT options open to them.

Finally, enterprises need to start treating wireless data as any other strategic IT investment. This means taking a considered look at the investments made so far, asking whether they have delivered the benefits expected and whether the approach taken to date is a good solution for bigger investment in the future. Our research shows that they are asking the right questions.

Appendix A – Public Sector Analysis

Mobility is nothing new in the public sector; there have always been groups of employees working outside of fixed locations – indeed for some, this is a core part of their work. Workers across the public sector are not immune to the same work pressures as their private sector counterparts, and there is a drive across government for greater efficiency giving improvements to services delivered whilst also saving money.

17% of Quocirca’s research sample includes public sector users in all three countries. This addendum highlights some of the differences and similarities in their use of, and attitudes towards, wireless access to business systems. It aims to assess whether the same issues as we see in the main report will apply in reaching a public sector ‘tipping point’ where wireless access becomes a part of mainstream IT strategy and activity moves beyond the pilot stage.

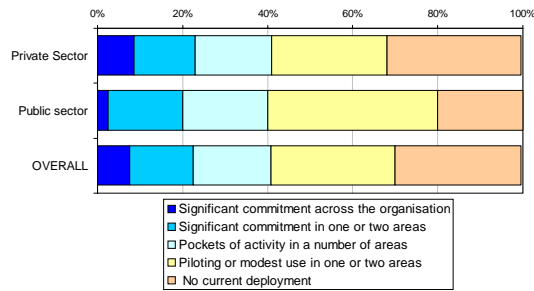
Current activity

Use of handhelds

As in the private sector, wireless email adoption is tactical, not strategic. Less than 3% of public sector users report significant commitment across the organisation, compared to around 9% in the private sector (Figure A1).

Figure A1 Copyright 2005 Quocirca Ltd

To what degree has your organisation deployed the RIM Blackberry or any other handheld wireless devices for wireless email access?

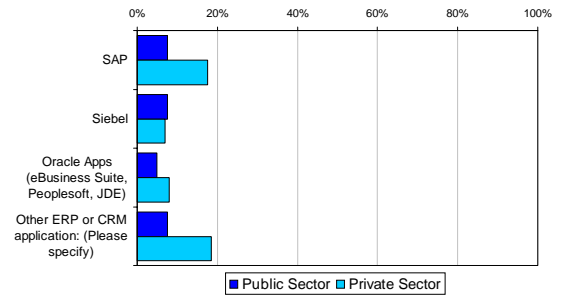


However, in the public sector there is more activity across the board, with 80% of organisations reporting significant commitment or pilot activity, as opposed to 70% in the private sector. There are a larger number of smaller pilots in the public sector, reflecting activity such as those pilots and ‘proof of concepts’ being carried out under the auspices of Project Nomad in the UK.

If there is as much wireless e-mail activity in the public sector as in the private, albeit on a smaller scale, then there is a bit less current activity as far as access to mainstream applications on handhelds is concerned (Figure A2).

Figure A2 Copyright 2005 Quocirca Ltd

Are any of the following applications targets for wireless access from handhelds now ?



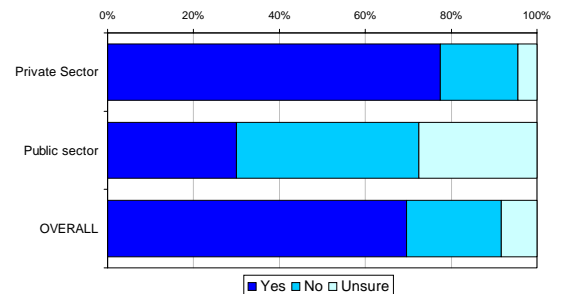
Use of laptop computers

Quocirca’s research and analysis over the past few years has shown that development of remote and wireless access often starts with use of laptop computers to dial into company systems, often from home or other fixed locations. It is instructive to look at use of laptops in the public sector to assess how they compare with their private sector counterparts.

There is somewhat lower usage of laptops by employees who are mobile in the public sector (Figure A3). Only about 30% of public sector workers are using laptops whilst working out of the office, compared to nearly 80% of those in the private sector.

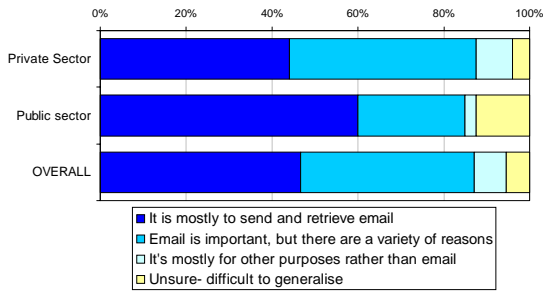
Figure A3 Copyright 2005 Quocirca Ltd

Do you have a significant number of employees who use a laptop whilst working in the field or on the road?



When public sector workers are out of the office, there are also some differences in the applications which they access compared to their private sector counterparts (Figure A4).

Figure A4
On a general basis, looking across all of your laptop users, what is the main reason for them wanting to connect?



Access to e-mail is more common in the public sector, with less access to other business applications, mirroring the use of other applications on handhelds see in Section 2.1 (Figure A2).

Looking into the applications accessed currently on laptops, and those which might be accessed in the future, some interesting trends emerge (Figures A5 and A6).

Figure A5
Other than email, do a significant number of users access any of the following remotely from a laptop? - Private Sector

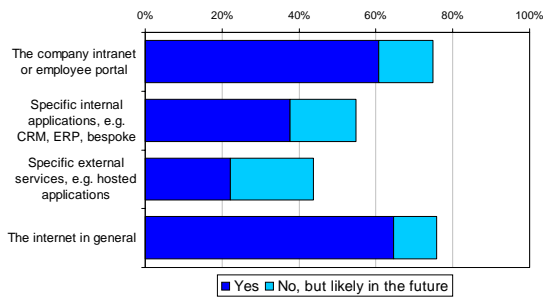
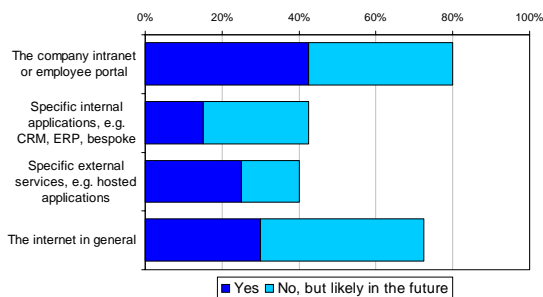


Figure A6
Other than email, do a significant number of users access any of the following remotely from a laptop? - Public Sector



There is currently much less use of the Internet in general by public sector users, although in future, respondents consider that it will be accessed by over 70% of users, only marginally less than the levels likely to be seen in the private sector. The current differences might reflect the different types of early adopters and the types of work being done: public sector pilots are tending to be very focussed on narrow work areas rather than giving staff unlimited access to the Internet.

Current access to specific external systems, including hosted systems, is slightly higher in the public sector, but in the long

term this seems likely to be at similar levels in both public and private. Access to external systems – or at least shared systems between selected government departments and agencies, seems likely to be a significant trend as cross-departmental efficiencies in areas such as HR and Purchasing are sought, and ‘joined-up’ working across functions such as Health, Education and Social Services increases.

Device usage

As in the private sector, most deployments for both e-mail and other applications are on relatively expensive proprietary devices. Less than 3% of public sector organisations indicate implementation of wireless email on more general purpose commodity handsets (Figure A7), and none at all have implemented other applications on general purpose devices (Figure A8).

Figure A7
Which of the following have you implemented for users to access their email wirelessly?

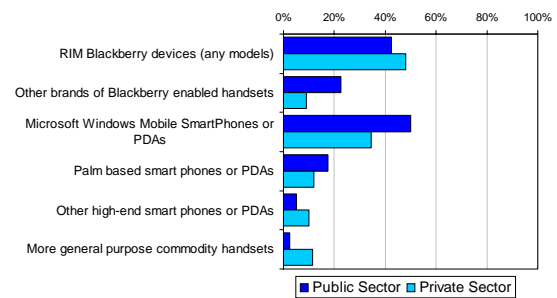
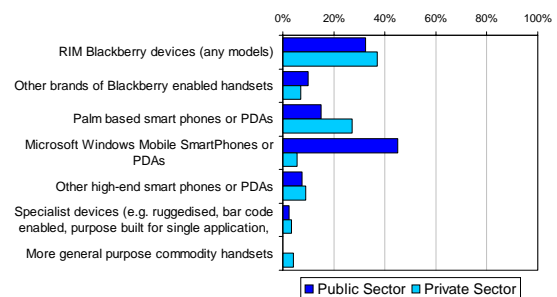


Figure A8
Which of the following have you implemented for wireless access to non-email applications?



The main difference, especially in the case of non-email applications, is the far greater importance of Windows-based smartphones in the public sector rather than the BlackBerry device.

This may reflect a number of factors:

- the proliferation of public-sector specific applications with developers who prefer a Microsoft environment; this would particularly impact the use of devices for non-email applications
- the fact that the mobile operators have been the prime movers in ‘seeding’ BlackBerry devices into senior management positions; research by Quocirca has shown that the public sector is somewhat less inclined to consider mobile operators as strategic

partners, and therefore might be less inclined to be open to such a strategy

- the perception that proprietary solutions are expensive, particularly in licence terms; public sector organisations are constrained in their ability to purchase expensive solutions without a full tendering exercise, and there are fewer opportunities for widespread user pressure to get high end devices, except at the most senior levels

Future demand

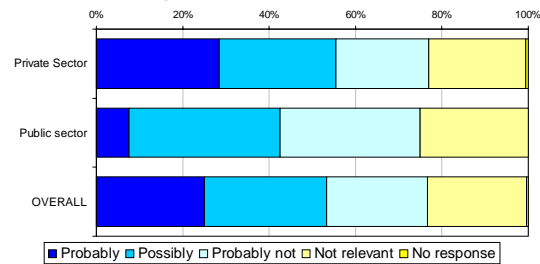
There is piecemeal activity now, but going forward, what is the extent of public sector demand for large scale implementation?

Future demand for wireless email

In the main report, we found a high level of interest in further rollout of e-mail, and thought that this would be most likely to happen either as an incremental add-on to the broader laptop community, or as a new device for staff for whom the cost of a laptop could not be justified.

However, public sector interest in further e-mail rollout is somewhat more limited than in the private sector (Figure A9).

Figure A9
If email could be delivered cost effectively on a suitable handheld device, do you see an opportunity to provide email capability to field workers for whom a full laptop or desktop PC could not be justified?

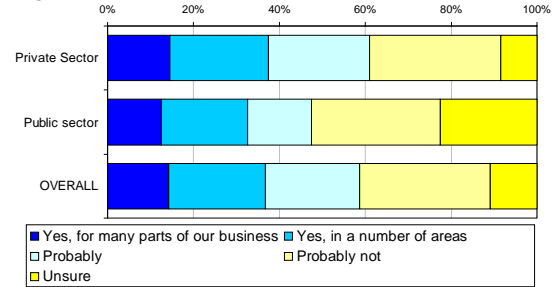


Less than 10% of public sector users thought they could see a probable opportunity for further e-mail rollout, compared to nearly 30% in the private sector. This might seem strange, given the relatively low laptop use seen earlier and the high numbers of pilots going on. However, it might reflect a degree of caution about the overall cost-effectiveness of e-mail rollout to workers who are only away from base for a limited time. It is also likely to reflect a more constrained environment in the public sector, with potential concerns about compliance and security and less pressure from the users themselves to access email on the move. As the public sector opens up more to flexible working and working with a range of organisations and agencies necessitating more time out of the office, we might perhaps expect interest to increase in future.

Other applications on handheld devices

The main report showed that around 60% of the research sample saw the expansion of applications on handheld devices as relevant to their business. About 50% of the public sector respondents see some relevance overall, and a very similar percentage see opportunities for many parts of their organisation (Figure A10).

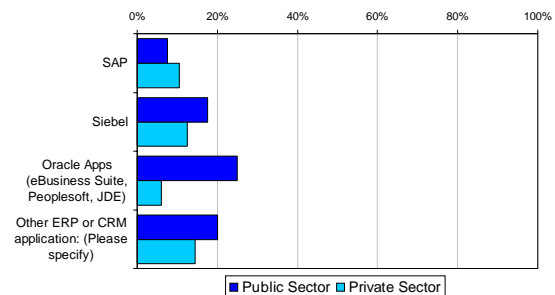
Figure A10
Is access to other (non-email) applications from handheld wireless devices relevant or likely to become relevant in your organisation?



Whilst there is relatively less current implementation of mainstream applications in the public sector, there is serious consideration of how these applications should be addressed in the future. In particular, interest in Oracle applications is high (Figure A11).

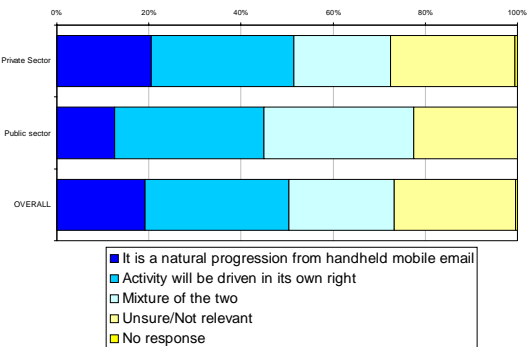
As well as typical enterprise applications such as finance and HR, public sector users also express interest in a range of specific applications in sectors such as housing and environmental health. The range of applications is likely to involve a range of different types of workers, leading to further challenges when setting out a mobility strategy, discussed further in Section 4.

Figure A11
Are any of the following likely targets for wireless access from handhelds in the future?



As might be expected given the relatively low level of interest in email rollout, public sector organisations see more activity driven in its own right than as a natural progression from email to other applications. (Figure A12).

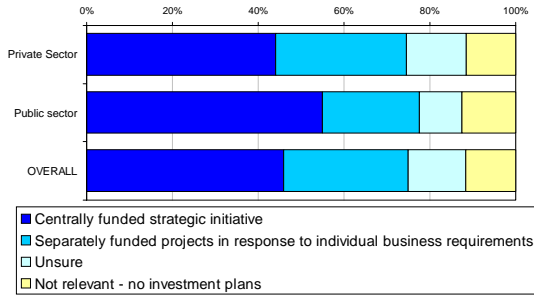
Figure A12
How do you see activity in this space developing?



Public sector strategy

The public sector is in the same position as in the private when it comes to the current somewhat fragmented adoption of wireless data access. Going forward however, the public sector realises that a more strategic approach will be needed (Figure A13).

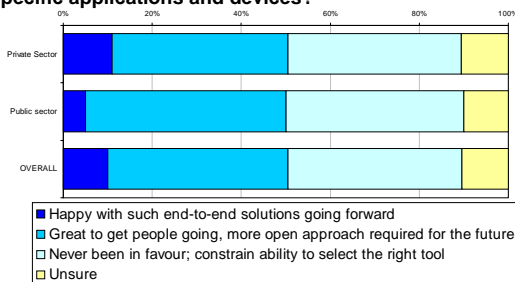
Figure A13
How do you see wireless and mobility investment being funded in your organisation moving forward?



There is somewhat more propensity for centrally funded initiatives in the public sector. This reflects different approaches according to the different department or organisation: some central government departments or agencies are likely to have higher level of strategy across the organisation, whereas others in central government and those in local government where there are a wide range of activities carried out are more likely to have different policies and implementations according to department.

We saw in the main report a high degree of unhappiness with constrained single function solutions. This is reflected to an even greater degree by the public sector respondents (Figure A14)

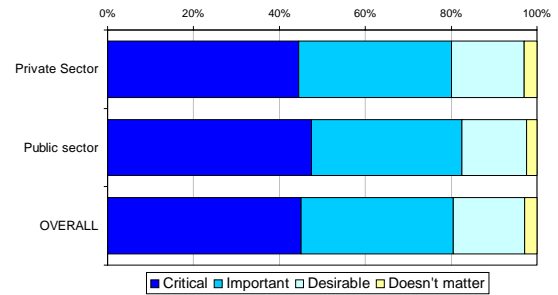
Figure A14
What is your attitude to offerings that provide end-to-end solutions (from the server through to the handset) optimised for specific applications and devices?



Only 5% of public sector users are happy with such solutions going forward, compared to a (still low) figure of over 10% in the private sector.

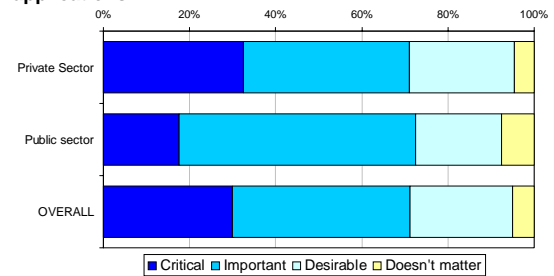
Similarly, the public sector wishes to keep its options open in terms of different types of handsets (Figure A15)

Figure A15
How important is it to keep your options open in terms of ability to use different types of handsets in the future?



Interestingly, though, the public sector believes the ability of the mobile industry to offer such devices is marginally less critical – although overall just as important – as the private sector does (Figure A16).

Figure A16
How important is it for the mobile industry to offer a range of devices with different levels of sophistication at different price points to suit the needs of different users and applications?



This may reflect a slightly different cultural perspective amongst the private sector respondents – a slight distance from really thinking that anything could be described as “critical”, perhaps. Or more concretely, it may reflect the fact that purchasing is frequently carried out on a defined project by project basis, with an assumption that the right device will be available for any given project, and a range from a single mobile operator is not necessary. The more constrained environment in the public sector also means that there is less likelihood of users being able to choose their own devices, hence less need for a range of devices to be offered.

Conclusion

Wireless is an important part of the government’s efficiency agenda, and the public sector is as active – if not more so - as the private sector in terms of pilots and early usage of wireless access.

It is clear that the public sector will be significant future purchasers of wireless access to corporate data systems, with a wide range of differential departmental and agency IT systems being able to be accessed whilst out of the office.

However, its IT decision makers are as concerned as their private sector counterparts about the potential constraints posed by ‘canned’ solutions and wish to keep their options open in terms of their ability to use different handsets and to ensure openness, flexibility and interoperability.

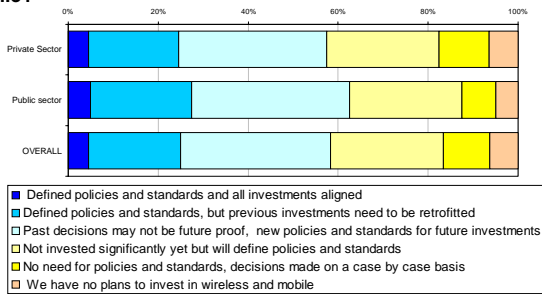
Like the private sector, about a third of public sector users suspect that their past decisions are not future proof, and over

20% say that previous investments have to be retrofitted to their strategy (Figure A17).

Figure A17

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Which of the following statements best sums up your overall position and plans for the future with regard to wireless and mobile?



many of the same things will have to change in order to reach a ‘tipping point’ at which wireless access becomes a part of the IT mainstream. From the supply side, a shift to more open platforms able to support a range of applications and devices, will be key to making large scale adoption happen.

The need to support a wide range of devices and applications is likely to be even more important in the public sector; many government departments, and particularly local government authorities, are supporting tens if not hundreds of different services. This means that supporting large numbers of different point solutions will be very costly, and may constrain future opportunities. On the other hand, a completely open solution is also costly to establish and to maintain. IT departments will, like their private sector counterparts, need to assess their investments to date and test their validity for larger scale rollout. A middle ground, providing a standards-based infrastructure aimed at a minimum specification of device type may well be the most cost-effective way forward.

In the public like the private sector, therefore, it is clear that

Appendix B – Interview Sample Distribution

Figure B1
SAMPLE BY INDUSTRY/SECTOR

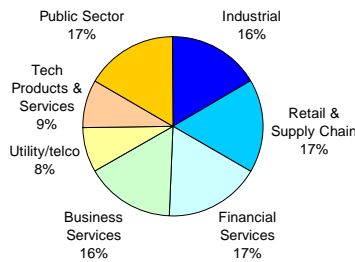


Figure B2
SAMPLE BY GEOGRAPHY

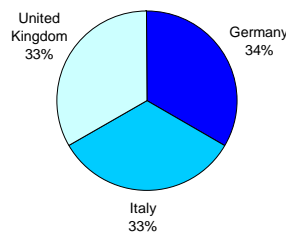


Figure B3
SAMPLE BY ORGANISATION SIZE

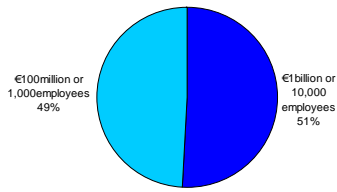
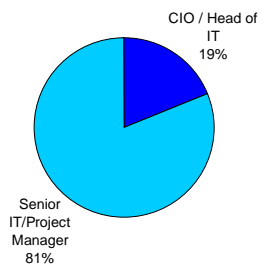


Figure B4
SAMPLE BY JOB FUNCTION



About Intellisync

Intellisync Corporation (Nasdaq: SYNC) is a leading provider of wireless email and mobile software to large enterprises, mobile operators, software providers and device manufacturers.

Intellisync has won the mobility industry's top awards by providing seamless synchronization, secure wireless email, device control and mobility management software that connects nearly every device, data source and application available.

The world's largest corporations have selected Intellisync as their mobility solution standard, including America Online, Crédit Agricole, Domino's Pizza, Guidant, Microsoft, NTT DoCoMo, Oracle | PeopleSoft, Pfizer, Sprint, Target, T-Mobile, Union Pacific, Verizon Wireless and Yahoo! For more information, please visit www.intellisync.com.



About Quocirca

Quocirca is a perceptual research and analysis company with a focus on the European market for information technology and communications (ITC). Its analyst team is made up of real-world practitioners with first hand experience of ITC delivery who continuously research and track the industry in the following key areas:

- Business Process Evolution and Enablement
- Enterprise Applications and Integration
- Communications, Collaboration and Mobility
- Infrastructure and IT Systems Management
- Utility Computing and Delivery of IT as a Service
- IT Delivery Channels and Practices
- IT Investment Activity, Behaviour and Planning

Quocirca research is always pragmatic, business orientated and conducted in the context of the bigger picture. ITC has the ability to transform businesses and the processes that drive them, but often fails to do so. Quocirca's mission is to help organisations improve their success rate.

Quocirca has a pro-active primary research programme, regularly polling users, purchasers and resellers of ITC products and services on the issues of the day. Over time, Quocirca has built a picture of long term investment trends, providing invaluable information for the whole of the ITC community.

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