## WHITE PAPER

# The Mobile Workforce

**This white paper reviews current and upcoming trends in the mobile workplace, reviews why and how staff can become more effective through improved communications and suggests the key applications suitable for 'mobilisation'.**

## Summary

Over the past 10 years the spread of the mobile phone has driven a sea of change in the way people interact. We now expect to be able to talk to our friends and family irrespective of where they are – the mobile phone is a core part of our social interaction. Equally, businesses could not function without mobile phones and they have helped fuel the drive away from office based staff to home and mobile working.

Compared to mobile voice communications, mobile data still has some way to come. However, the recent introduction of GPRS (General Packet Radio Service) data communications, the promise of new 3G services and the emergence of mobile devices such as Smart Phones (e.g. Sony Ericsson P900 or Nokia 6600) and combined phone and PDA devices (e.g. $O_2$ XDA2 or Blackberry) have provided the infrastructure that will allow mobile workers access to the data and applications they require.

Supporting the hardware and network technology are application toolkits that can provide off-line working and provide reliable service through local caching and synchronisation.
Currently there is no clear 'killer app' for mobile devices but the major drivers are to provide support for sales and service staff. Delivering the correct application will free up time, improve management control and improve customer satisfaction.

The trend to mobile computing is only just starting but it is one that will surely continue and will bring about a change to our working lives comparable to that of the mobile phone.

## Overview

This document discusses the following topics:

- What do we mean by the mobile worker?
- Who are the mobile workers?
- What are the benefits accrued though mobilisation of the workforce?
- What services do mobile workers require?
- What existing applications require integration to mobile devices?
- What technology is available to support the mobile worker?
- What are the upcoming trends likely to influence mobile working?

## Who are mobile workers?

Previous generation mobile solutions were based on proprietary hardware and software and tended to focus on high transaction volume businesses such as couriers – typical examples of these application types can be seen from UPS or DHL.  The second wave of mobile solutions will have a much wider deployment.

Every business is unique and every business will have different requirements for staff mobility. However, there is a common theme of the core groups who require mobile solutions which include:

- Executives and Senior Management
- Sales Staff
- Service Personnel

Executives and Senior Managers need to be in touch with the office at all times – decisions need to be made and access to the information needed to make those decisions is key.  Simplicity of use and flexibility are key requirements making PDA devices supporting both push and pull of data ideal.

The Sales Force or Relationship Managers should ideally spend as much time as possible in front of prospects and clients.  The Sales Force need access to up-to-date information on the customer, competitors and products, with the ability to produce quotes and take orders – all whilst being out of the office.  This group requires access to remote data.  For sales staff selling simple products, a PDA device running sales force automation software (e.g. Pivotal, Siebel or Microsoft CRM) will be ideal; for those with more complex products a laptop based system that can hold data off line and synchronise when connected (either wirelessly or via dialup or network connection) is more appropriate.

The effectiveness of Service personnel can be greatly enhanced by providing a central scheduling and planning system that allows optimisation of routes, reacts to changes in schedules and interacts with the service force to meet service level requirements.  Such applications (for example ClickSoftware) need to communicate with the service staff in real time to push out details of next service calls and to collect feedback on completed calls.  This type of application is ideally suited to PDA type devices which connect wirelessly and in real time.  These can be either 'always on' or 'on request' whereby the service staff would link up after every call to download the next appointment details.

# Benefits of a mobile workforce

Two types of benefit are accrued through mobile applications. For high cost, knowledge workers, the benefits are largely intangible through improved collaboration, better information sharing and optimised decision-making. For blue collar workers the savings are more explicit through improved efficiency and effectiveness.

The key drivers for mobilising core staff are high on every CEO's list of priorities and include:

- Improving staff effectiveness
- Reducing cost
- Improving customer satisfaction
- Improving staff satisfaction

## Improving staff effectiveness

Sales staff become more effective when new leads and opportunities get routed immediately for progression. They can interact in real time irrespective of location. More importantly they can spend all of their time where they are most effective – in front of customers – and can still complete admin tasks without returning to the office.

Field service technicians get current information when they need it and can record actions for each job as they go. The need for paper service sheets is eliminated and managers can control events in the field as they happen. Finance can print invoices immediately and parts inventory may be closely controlled. This live circuit between service managers and technicians results in a better quality of service for customers and improved profitability for the service organisation.

## Reducing cost

Orders can be taken remotely and are instantly available for back office systems to process. This reduces the overhead of paperwork, time taken to process the order and minimising errors.

Field service solutions not only reduce the costs of staff through more efficient use of time (minimising waiting time, travelling time etc.) but can lead to reductions in mileage (through improved routing) and parts (though real time inventory management).

## Improving customer satisfaction

Customer satisfaction is particularly improved though enhanced customer service. Service levels can be guaranteed and the correct service engineer can be directed to resolve the customer problem. Supplying the engineer with the correct brief (so they actually know beforehand what they are supposed to do) allows the engineer to be equipped with any replacement parts, therefore the service engineer is able to resolve the problem with speed, efficiency and move on to make the next service call.

## Improving staff satisfaction

Supporting mobile workers allows work/life balance to be managed. Staff can reduce the time they take out from their schedule to come into the office. This allows them to focus on the core job at hand with significantly reduced administration.

# What services are required?

A recent report (Corporate Wireless Data in Europe by QNB Intelligence, sponsored by flyingSPARK and EVUA) interviewed corporate IT and Communication Directors across Europe. The following extracts highlights the key applications identified:
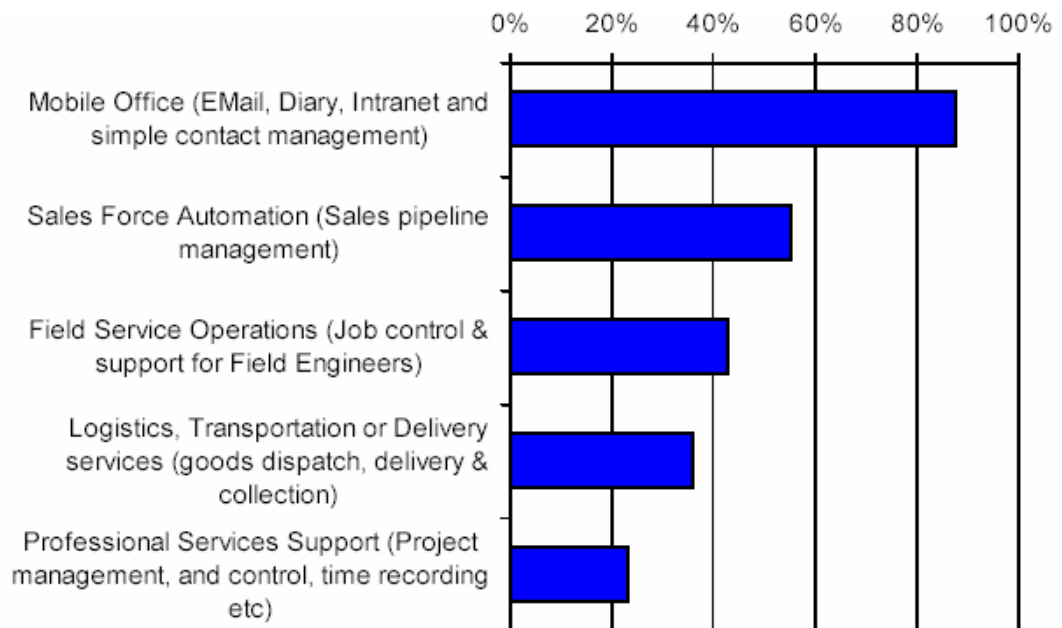


Within this space the following application functionality is identified:

- **Mobile Office** – extensions to the existing e-mail and calendar applications will automatically push new appointments and e-mails to the PDA or Smartphone. This allows people to keep in touch with their office and be more effective when remote. Filters can be set to ensure large e-mails (especially attachments) are only pulled if needed in order to manage the costs. This type of service is provided by the mobile phone providers or can be integrated into traditional e-mail applications such as Microsoft Exchange.

- **Sales Force Automation** – access to customer, contact, product and order data can be made available via mobile devices – CRM products ranging from Siebel through to Microsoft CRM have varieties that support mobile working. In addition to allowing the sales force to be effective in the field, significant improvements are seen in sales force management through consistent sales processes and improved pipeline reporting.

- **Field Service** – field service applications manage the schedules of remote engineers often reacting in real time to changing customer demands. In addition to scheduling and directing field service staff often these applications provide integration to parts systems (to manage the replacement of parts installed on a customer site) and map related services to provide directions.

- **Logistics** – whereas delivery tends to be pre-set and predictable, the inclusion of collection requires considerably more agile business processes.  By implementing 'always-on' mobile applications the control can dynamically modify the schedules to include non-planned deliveries and combine collections with deliveries.

- **Professional Service –** support for professional staff who need to record effort and integrate to customer billing systems.  In particular, this type of application will be adopted by the major consultancies and law firms.

## Technology options

Depending on the level of mobility required there are three main technology options available to support mobile workers.  These are:

- Wireless communications over GPRS (and 3G when available)
- Wireless hotspots (WiFi)
- Wired/Bluetooth connectivity via docking station or to a local PC

Wireless communication over GPRS is the most flexible solution and the only one that supports fully mobile, 'always-on' solutions.  Data can be pushed from the main systems to the remote device at any time.  For example, if a customer phones with an urgent service request the system can identify the most appropriate engineer and re-direct them to pick up the call.  The system will push the call details to the mobile device allowing the engineer to prepare for the call.  This solution set can integrate with positioning solutions (where the exact position of the engineer can be identified) and routing solutions to minimise travel time.

However, while this is the most flexible technology there are a number of problems most notably related to network coverage and availability.  Even in large towns GPRS coverage is poor (a recent review in Manchester showed GPRS connectivity is only available in 70% of the city), which means that browser-based applications cannot work.  The approach taken to resolve this is to implement 'as soon as possible' technology solutions.  A good example of this type of technology is provided by flyingSPARK.  flyingSPARK allows the mobile device to work whether or not a GPRS signal is available.  Data is cached on the PDA and made available to the user.  When a signal becomes available the PDA automatically synchronises any changes between the remote device and the main application.  This technology has been successfully deployed with both field service and sales applications such as Microsoft CRM.

Wireless hotspots (based on WiFi technology) are becoming increasingly prevalent appearing in coffee shops, airports, hotels and motorway service stations.  WiFi is a wireless Local Area Network product based on IEEE 802.11 specification.  WiFi is ideally suited where there is no real time requirement for connectivity but occasional access is required (for example to pick up e-mails).  Currently, WiFi is available in laptop PC's and for some PDA's.  Different billing models are in place for charging for WiFi access; this will become simplified as the technology become more mature.  WiFi devices allow access to the internet and through Virtual Private Networks (VPN's) onto the office network.  The bandwidth and reliability are typically good.

Applications that take advantage of WiFi connectivity typically fall into three categories, those that:

- are simple internet based applications (e.g. hotmail)
- run over the internet (e.g. the thin client version of Microsoft CRM or Siebel)
- require synchronisation of data (e.g. Microsoft Outlook) where data is transferred and made available off-line.

The final approach to mobile solutions is to load data onto the mobile device, work off-line and synchronise when available.  This typically suits users who do not need to be reactive and can synchronise at the start or end of the day.  This model is how many PDA's are currently used.

## Future trends

Predicting the future in any technology comes with uncertainty but there are some clear trends emerging.  First of these is the consolidation of device operating systems.  With Nokia taking whole ownership of the Symbian consortium and Microsoft moving into the mobile phone market with Windows Mobile based devices there will be little room for any other players.  Niche players such as Blackberry will find it difficult to compete in such a market.

Microsoft's dominance in the operating system and desktop application market, particularly at the desktop level make it likely that, for business applications (such as Sales Force Automation or Field Service) Microsoft Mobile based devices will dominate.  The personal market is much less clear with the drive to multi-media phones, picture messaging and personal gaming giving the Symbian consortium a strong offering.

The eventual emerge of true 3G networks will be more of a whimper than a bang – it will be business as usual but faster and (eventually) with better coverage.  Existing 2½G services will evolve onto the 3G platforms with mobile working being the core business application and picture/video messaging dominating the consumer market.

Video telephony will also impact the business market – applications of these kind will include teleconferencing  (cutting down but not eliminating personal contact) and integrating 'experts' into the field service (where on-line experts can view problems and assist the normal field staff).

The final trend that will impact the effectiveness of mobile workers will be 'real' speech recognition.  Currently, PDA's and Smartphones are effective devices to read information but entering any volume of data is laborious and time-consuming (even for those from the 'texting' generation).  Voice recognition and text to voice software will allow notes to be entered, stored, shared and retrieved by talking to your device finally freeing users from the keyboard.

## Glossary

**GPRS**  Global Packet Radio Service enabled networks offer 'always-on', higher capacity Internet based content and packet-based data services.

**3G**  $3^{rd}$ Generation – the next generation of mobile phone technology supporting much higher data rates intended for applications other than voice.

**WiFi**  Wireless Fidelity.  (Also known as Wireless Networking).  A local area network that uses high frequency radio signals to transmit and receive data over distances of a few hundred feet.

**PDA**  Personal Digital Assistant.  A PDA refers to any small hand-held wireless device that provides computing and data storage abilities.

**Bluetooth**  Bluetooth is an open standard for wireless transmission of voice and data between mobile devices (PCs, handheld computers, telephone and printers.)

**VPN**  Virtual Private Network.  A way to communicate through a dedicated server securely to a corporate network over the internet.

# About Softlab

## Why use us?

Softlab specialises in the delivery of cost effective CRM solutions to enhance our customer's profitability. Our offer includes full or partial CRM solutions including business intelligence and analytics, switch, IVR, voice recording, CRM desktop, knowledge management and back end integration. We have extensive experience delivering applications to companies such as the BMW Group, Barclays Bank, T-Mobile, Provident Financial, Vanguard, Yell and Argos. We bring an understanding of the latest technologies and an ability to work with our customer to ensure the best application of those technologies to solve their business issues. Over the past 10 years, Softlab has delivered hundreds of major projects to time and budget. Our business model allows us to deliver the majority of our solutions to a fixed price and timescale; often entering into shared risk/rewards deals with our clients.

## How can Softlab deliver mobile solutions?

Softlab has both the business and technical expertise to work with our clients to define the benefits that a mobile solution would have for their organisation. We can then implement the mobile solution integrating either to existing in-house applications or based on a standard CRM or ERP package.

## About us

Softlab, founded in 1971 and a wholly owned subsidiary of BMW, is one of Europe's leading systems houses. We employ more than 1,200 people across Europe, of which 100 are based in the UK; our turnover exceeds €160 million per year. We specialise in CRM solutions, extending from the identification and definition of overall business needs right through to the final implementation of business systems. At all times Softlab brings quality and brand value into its work which is synonymous with the Softlab and BMW names. We provide robust quality, leading edge solutions, high performing systems and people dedicated to assuring that we deliver high standard service, right first time in a value for money package. We invest heavily in the training of our people to ensure they are up-to-date with the latest developments in Information Technology, and they work within our ISO 9001 and TickIT Quality Assured Methods and Procedures.

The Elite CRM-Berater Magazine voted our Customer Relationship Management (CRM) Practice the 'Best CRM Systems Integrator' in 2000. More recently Softlab has been awarded the best Genesys integrator for the Lufthansa Call Centre and the Provident Financial Call Centre was short listed for the CRM Solution of the Year award.

## Our Partners

As systems integrators, Softlab works with leading CRM product suppliers including Microsoft, Siebel, Pivotal, Amdocs/Clarify, Genesys, Primus and SAP. In addition Softlab works with EAI vendors such as BEA, IBM, Vitria and WebMethods to support integration of back and front office systems and analytics providers such as Epiphany, Cognos, Information Builders, ProClarity and Business Objects to deliver business intelligence and analytical CRM solutions.

For mobile solutions Softlab partners with flyingSpark who provide 'as soon as' technology solutions as a development toolkit or for products such as Microsoft CRM.

# Further Information

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