mobile enterprise applications

transforming business

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forewords

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hello

Have you considered how mobile applications can transform your business?

Businesses across a wide range of industries are seeing the benefits that mobile applications can bring such as improved efficiencies and productivity. Outside of the business, these benefits can be passed through to customers, who enjoy faster response times and problem resolution.

Delivering mobile applications is now relatively straightforward, so all types of businesses have the flexibility to implement them – from serving small teams to resolve specific issues, right up to 'going big' and supporting large mobile teams.

The PC based applications and field force applications used by utility companies in the past have now been extended to the mobile world. Trends in mobile phones with larger screens and touch screens, software and network developments mean that mobile applications can address a wide range of business needs, with further technological development continuing to make them ever more ubiquitous.

In line with the "conquests 2015" plan presented 5th July 2010, Orange is at the forefront of technological innovation. We've committed large investments to boost our network for data users and mobile applications, adding value to people and businesses.

We have written this white paper in partnership with Accenture to give you an overview of mobile applications, their capabilities and the benefits they can bring to today's enterprises.

I hope you find the insights drawn from customer interviews inspiring.

Anne-Marie

Jean-Laurent Poitou
Global Managing Director
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Business executives have been the first to adopt the early generations of smartphones, accessing emails, calendar and personal contacts on the go. Only afterwards did they find their way to the shelves of consumer stores.

CIOs are now pressured by employees to let them use the latest smartphones and tablets for professional applications. At this point, the mobile application revolution in the consumer space is spreading quickly into the business world.

Unsurprisingly, the most nomadic workers in sales and field forces have been the first touched by this wave of change. The most remarkable trend is that knowledge workers are also in demand for mobile business applications, expecting to access on the go their back office systems, productivity tools and reporting applications.

Mobile applications drive process transformation in a way that has never seen before: workers receive information and can capture data at their point of activity. Mobile applications are green, optimising travel and reducing paper consumption. Not only are mobile employees becoming more productive, they also experience a more user friendly and more fun workplace. At last, mobile applications facilitate homeworking and help retain talents.

Working alongside Orange Business Services, we have both shared our lessons learned from recent mobile application projects; this white paper outlines the resources that telecommunications service providers, technology vendors and systems integrators can provide to deliver your project.

Our ambition is to bring mobile innovation to business.

Jean Laurent

contents

why are so many businesses launching mobile applications today?

By 2013, over 80% of handsets sold in mature markets will be smartphones , with a text keyboard, 3G connectivity and multimedia features.

Mobile applications are now much more accessible due to high-speed mobile networks; third and fourth generation networks provide more than enough bandwidth for personal and professional use, with email and mobile app stores almost ubiquitous on today's devices.

the reasons:

business applications are maturing

Mobile applications in business have been available for more than 10 years, mainly in large utility companies with substantial mobile workforces. In recent years, mobile applications for all business types have started to evolve. Whether these are applications developed specifically for your business, or simply ones your employees use as part of daily life for activities such as reading the news, looking for directions or finding train information via a smartphone, applications are changing the way we do business.

The lines are blurring between business and consumer applications: if you can see your Facebook updates on your smartphone why not track your customer orders? Employees, who experience mobile applications in their personal life, expect their company to keep up to date with the technology and provide applications that are efficient and easy to use.

decrease in costs

Increased demand from consumers and competition in the market are together putting downward pressure on the price of smartphones. At the same time, processing power and features are improving. This is partly due to the competition between device manufacturers and operating systems, with five key operating systems available: RIM (BlackBerry), Google Android, Nokia Symbian, Apple and Windows Mobile.

Development costs of applications have also decreased, even for small departments with very few mobile employees. Every operating system provides a software development kit and over 300,000 applications have been developed to date . Developers are now highly skilled and costs are attractive enough for adopting simple business applications. Moreover, software packages and SaaS (Software As A Service) offerings can minimise the effort required to fulfil business requirements.

Also with the development of applications and smartphones that work on both Wi-Fi and 3G, network connectivity costs make mobile applications more accessible.

the evolution in support and security

Over the past years, significant evolutions in support and security mean you can release your application to a controlled group of users, giving you more control over the application and the device. These device management tools increase the security of the application and any sensitive information that may be held on the device.

[1] Source: Gartner: New Approaches to Managing Mobile Users and Smartphones. Nick Jones, 30th June, 2010.
[2] Source: Accenture Analysis 2010, based on major device manufacturer press releases.

what are the key benefits?

Mobile applications also make the best of 'dead time'; while you are travelling for business you can easily keep up to date with business performance activities on your tablet or smartphone.

transforming business processes at the point of activity

Employees can access and capture the right information when and where they perform their business activity. A claims representative can take photos of a flooded house on his mobile phone and forward them to an auditor who will approve or reject the claim seamlessly, reducing the lead-time for resolution and customer payment. Paperwork is suppressed, administrative work optimised and customer service is significantly improved.

productivity gains

Productivity is achieved in six ways:

- **time to complete:** with the right information, mobile workers can spend less time collecting missing details or diagnosing issues, and reach a solution more quickly.
- **travelling:** routes can be scheduled based both on distance and on traffic; instant visibility of the location of the field force enables dispatchers and schedulers to optimise the travelling time.
- **lost time:** field force workers can be alerted to a change in schedule and gain instant visibility on customer requests or cancellations, giving them greater flexibility to switch at the last minute.
- **efficiency:** better preparation means that material (from spare parts to contracts) can be assembled before going to the point of activity which leads to fewer return visits.
- **administrative time:** (parallel) data collection while the activity is being performed means less (if any) time needed at the office or at home to complete the paperwork; collecting data on the spot results in fewer administration or reporting errors.
- **process effectiveness:** fewer support staff and supervision are required to run paperless processes (due to electronic forms)

speeding up office functions

Mobile applications can achieve financial benefits due to faster information being returned from the sales or field force team, enabling more efficient bill processing.

- **lead time to order / field force support:** mobile workforces are more flexible, and can confirm customer orders and schedule customer requests sooner.
- **order to payment:** completion of paperwork (ex. sales order forms) during customer meetings results in finance being able to process payment requests much earlier, reducing payment timescales.
- **billing on premises:** mobile applications can also support the option to bill on premises by credit or debit card; this can substantially decrease payment timescales.

Return on investment and payback vary depending on business context, depending on employees being equipped with the right devices beforehand, on pre-existing business applications that can be mobilised, and on the impact of the simplification of business processes.

Mobile projects often have a profound impact on business processes. In a recent UK project to equip sales teams with mobile devices, the project team was surprised to find large benefits associated with the elimination of errors from sales contracts. Paper processes were resulting in nearly 25% of contracts containing an error of some type; the introduction of mobile processes and data validation virtually eliminated these errors. The extent of "hidden" logistics (managers moving sales materials around by car) was also surprising.

As the project entered its pilot stage an additional £1.25m of benefits over a period of three years were added resulting from these factors.

experience and brand image

Mobile applications improve the overall experience for customers and employees, resulting in a positive impact on sales and overall business efficiency respectively.

- **quality of service:** less errors, less missed appointments and faster administrative processes improve the quality of service for the customer.
- **responsiveness:** with a better view of customer requests and travelling time, mobile workers can respond more quickly to customer demands.
- **customer experience:** efficient processes and quality interventions typically remove causes of dissatisfaction; and lead to a more responsive mobile workforce.
- **employee experience:** improved safety (due to alarm buttons or geo-localisation), greater autonomy (due to the right information being accessible on the mobile phone) and greater sense of accomplishment, as efficiency bottlenecks are removed.

green benefits

Mobile applications provide green benefits, now reported in most annual reports, reducing both usage and waste of natural resources, and providing additional cost savings.

- **paperless:** due to electronic forms in lieu of paper forms.
- **travel efficient:** due to optimised routes and suppression of unnecessary travel, with fuel and car fleet maintenance reduced accordingly.

what is driving this trend?

By 2013, half of European workers will be mobile[3].

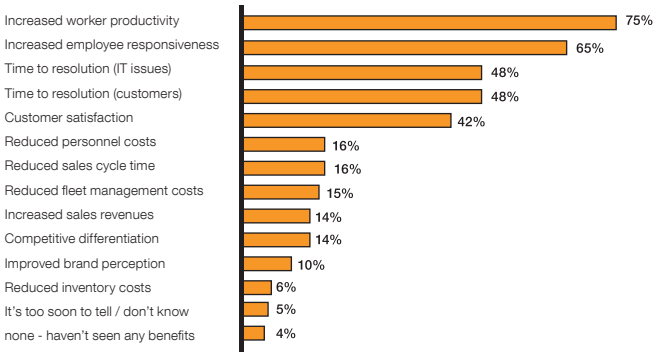
48% of organizations across the globe will be spending on mobilising enterprise application in 2010[5].

the increased mobility of employees

The mobilisation of the workforce is a lasting trend: workers are involved in more collaboration and teamwork, and they perform more business activities in various locations so no longer want to be tied to desk-based applications.

Sales teams need to visit their customers, field force teams carry out much of their work at a customer's premises, supply chain and factory technicians often have to move between different locations on the same premises. Because mobile employees can perform more business activities on the move, they don't require as much back office support or resource, an added bonus in terms of efficiency.

Proven benefits of mobile applications achieved by early adopters have set expectations when considering new projects[4]:



Source: Forrester Research Inc.

businesses want to be more efficient

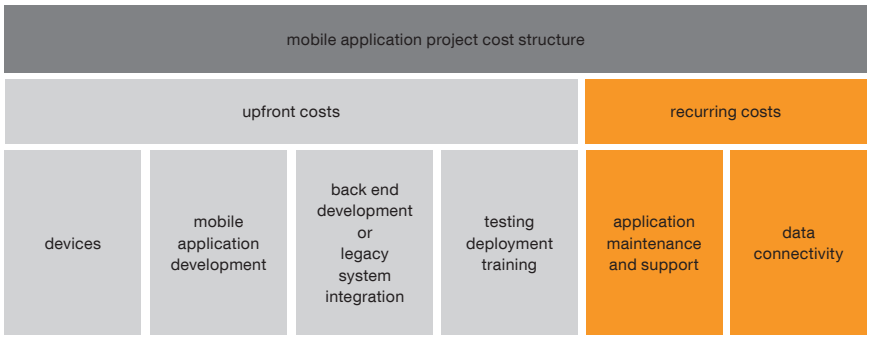
Early innovators have rolled out applications to user groups from 10 to 50,000 people and have seen significant improvements in productivity and efficiency, as well as employee and customer satisfaction. Many businesses are focusing on a specific team of mobile workers and identifying ways to make that team more efficient through mobile applications.

The success of more sophisticated applications used among larger companies or large mobile teams is prompting other businesses to embark on the same transformational journey.

[3] Source: IDC, Worldwide Mobile Worker Population 2009–2013 Forecast.
[4] Table: Forrester: Insights for CIOs: Make Mobility Standard Business Practice, Forrester Research, Inc., 3rd September 2010.
[5] Source: Forrester: Insights for CIOs: Make Mobility Standard Business Practice, Forrester Research, Inc., 3rd September 2010

how much does it cost?

upfront and maintenance costs vary depending on the breadth and the specificity of your business needs



upfront device costs

Your mobile workers may already be equipped with a phone, but this phone may not offer the usability and features to support your specific mobile application requirements. Prices will vary dramatically between a standard smartphone and a tablet, also additional peripherals may be needed to read credit and debit cards.

upfront mobile application development

The graphical user interface is key to the usability of the application. It is very important for you to consider and list the features and functionalities that you want to enable with your mobile applications at the inception of your project, such as automating calculations, customer search and stock lookup capabilities.

upfront back end system development or legacy system integration

Developing an application for your mobile workforce is likely to require a central database; in it, simple activities such as storing customer details and requests, but also more complex activities such as analysis can be done. This database can also be used to do complex analysis for scheduling and dispatch appointments. Similarly to mobile application development, very simple forms may require limited effort, and development costs increase with complexity.

upfront testing, deployment and training

Testing is key to ensure that your application is fit for purpose and that bugs will not impair the business or degrade user experience. Device management services are critical to distribute mobile phones to the workforce, ensure that applications are properly installed, and that users are supported when they face questions or problems.

recurring application maintenance and support

After the roll out has successfully been completed, the application will require maintenance, and users will require support. The costs will vary depending on the number of releases you plan to make per year, your device evolution strategy and therefore your associated end user support (either through the application developer or through your own IT helpdesk).

recurring connectivity costs

Even though today's applications are being developed to use minimal amounts of data, it is still important to consider and choose an appropriate data plan for your usage.

what mobile applications do others use?

There is no one application that will be suitable for everyone, but there will be an application suitable for a certain team of people or people with specific responsibilities.

different users need different applications to meet their business needs

An employee application suite can vary from one specific application that has been developed especially for a user group to improve productivity, to a collection of mobile applications that enable the user to work as easily in the office as out and about. Either way the applications that you deliver need to be reviewed for each group of users to identify what they need to be able to do at the point of activity and what ongoing processes they need to support.

example applications:

Sales Force Automation. view opportunities, track leads, manage sales prospects and clients. Follow business processes into accounting systems; pull up invoices, and record tasks.

Business Companion. exchange information, schedule meetings, manage your agenda and show people whether you are in the office or on the move. Ensure best in class travel and expenses management for your mobile workers.

Field Force Enablement. transform your field force capabilities to cost-effectively increase productivity while improving customer service. Improve performance management.

Business Intelligence. monitor activity such as reports from corporate or external sources. Always be informed and stay connected, and analyse data to keep your business moving forward.

further considerations:

Business support applications such as email or GPS location services are provided natively on smartphones (i.e. agenda and synchronisation with PC office suites); others can be purchased off-the-shelf from application stores (e.g. navigation technology which indicates directions based on GPS geo-localisation).

Horizontal applications serve common needs across various industries, and ready-made packaged software is often available for sales force, field force and CRM applications.

Vertical applications serve very specific industry and company needs: they are unlikely to be procured off-the-shelf, and may require development projects to meet your specific business requirements, such as extending current applications so they can be accessed from outside the office.

Application continuity: from mobile to PC. While smartphones provide a relevant interface for mobile applications to access and capture the required information directly at the point of activity, PC applications often provide a better workbench to have a wide view over multiple workers or over a longer time period. As an example, the development of mobile sales force and field force mobile applications often leads to developing a PC application for supervisors or off-the-field reporting and scheduling.

case study: Central Census Bureau

A costs and ROI analysis was launched on the request of the President of the Statistics Office to compare the costs of a mobile solution versus the cost of the 2002 census. The business case showed key cost reductions, specifically due to the paper elimination and reduction in the number of people it would take to oversee the census.

The success of this solution has created opportunities to build similar solutions for other departments of the Statistics Office. Additional benefits such as data validation in other public administration registers, geographical coordinates collection (as requested by EU) and data cleansing opportunities have shown that not only financial but also qualitative benefits are possible.

Inception. The United Nations (UN) have recommended that all countries conduct a census every 10 years. Accordingly, the European Commission have issued a directive to arrange these censuses in all European Union countries in 2010 and 2011. Poland is following this directive.

The last census in Poland was completed in 2002 and was a large scale activity using paper-based solutions. In total this census used 1000 tonnes of paper (150 million sheets), plus 55,000 field staff to supervise the agricultural census and 180,000 field staff to oversee the census of people and dwellings. Once completed the 1000 tonnes of paper were scanned and then destroyed.

Poland has created a 'paper-free' census for 2010 / 2011.

The mobile application. The census bureau decided to launch a mobile application on a smartphone (HTC), this device enabled staff to complete the electronic form remotely, and then send it to the central servers. Additional functionalities have also been implemented such as:

- offline mode
- location of dwellings with GPS
- local maps
- alarm button
- tracking of canvassers

24,000 devices were purchased to deploy the solution.

Development. The census project involved 8 companies working together to build and implement this solution. Orange prepared a complete telecommunication solution, including the mobile device deployment, SIM card encryption based on PKI, plus mobile and fixed line data transmission. Orange also supported the Census Bureau in the development of the solution, the technical documentation, the project implementation and the ongoing maintenance.

Deployment. The scale and simplicity of deployment and the mobility capabilities were highlighted as key success factors of the project. Four new data collection channels were implemented for the census; self-service internet forms, phone interviews, face-to-face interviews with data collected on the mobile device. To create an accurate list of households to be interviewed registries maintained by public administrative units were used.

New features. One of the main difficulties overcome in this project was the lack of network coverage in some rural areas. To overcome these difficulties two solutions were implemented. One enabled the device to work when in offline mode. Data could still be collected, and then uploaded when network coverage was available again. The other was to provide a portable charger as working in low coverage areas uses more battery power.

Benefits. The number of people required to complete the census was reduced by more than 80%. In addition, by implementing a 'paper-free' census, the 2002 census budget has been maintained for the current budget. However this solution has provided many qualitative benefits such as immediate data validation and elimination of errors and misinterpretations. The field users also identified benefits such as: visibility on census progress, improved safety and security (alarm button, voice communication, and geo-location), maps for finding addresses and participation in an innovative project.

case study: financial services

VOLKSWAGEN FINANCIAL SERVICES
UNITED KINGDOM

VWFS have also identified non tangible benefits, such as the relationships with the dealers which are now better due to a faster and more personable approach. Carl Redman – Head of IT development at VWFS reports, ”we are now seen as a modern, innovative and forward thinking organisation due to our approach to mobile applications.”

Volkswagen Financial Services (UK) Ltd (VWFS) offers finance and insurance services to over 700 dealers in the UK representing brands including Volkswagen CV, Audi, Porsche, Skoda, Bentley and SEAT.

Inception. At the end of 2008, with the economic crisis starting in the UK, VWFS wanted to find a faster and more efficient way to track the £350 – £500 million worth of financed vehicles that they owned in the UK. Until the end of 2008 this was a paper based system but it was decided by the UK Management Board that the auditing process needed to be faster to improve risk management, provide better monitoring of performance and increase auditor productivity. So early in 2009, VWFS launched a mobile application project to build improvements into its vehicle stock audit function, by introducing a mobile solution, refreshing the back end systems and automating manual processes.

Previously, the auditing team needed to use the company’s stock management system, which would provide a list of vehicles and dealers to audit that day. These would need to be printed before work could start. After the audits were completed, data had to be entered manually into spreadsheets at the end of every day. This data would then be accessed by the firm’s credit managers - who are responsible for decisions relating to credit limits, acceptable levels of risk and terms of payment for the network of dealerships - for further analysis. Having staff on the road with little contact with the office meant that the flow of information between auditors and credit managers was slow. Paper audit reports would be filed periodically, giving credit managers poor day to day visibility of dealers and, with the approaching economic crisis, this was no longer acceptable.

The mobile application. VWFS worked with Research In Motion (RIM) to implement the SAP based mobile application and mobilise VWFS’ team of auditors. Deployed within six months thanks to an ‘agile project’ approach encompassing over 500 vehicle logic process scenarios to ensure an excellent user interface and usability, the solution now provides instant, automatic, secure and reliable mobile access to the company’s stock management system. It includes the list of cars and dealers to be audited that day and reports in real time to a new SAP developed back end system, which was implemented at the same time.

In addition to process automation and simplification, the application brings new analysis and alert functionalities, such as recording auditor travel times. These are considered to be particularly innovative by users.

Benefits. VWFS expects to gain the equivalent of an extra 100 working days in the coming year due to the changes. As a result of implementing this mobile application VWFS can now proactively manage any financial risk, and anticipates that each auditor will perform up to 500 audits in 2010 - a 25% increase on 2009. VWFS have also identified non tangible benefits, such as the relationships with the dealers which are now better due to a faster and more personable approach. Carl Redman – Head of IT development at VWFS reports, ”we are now seen as a modern, innovative and forward thinking organisation due to our approach to mobile applications.”

This project has been so successful that VWFS plans to move forward with other mobile applications to help the business development teams track sales. They’re developing further applications to enable their B2B customers to track vehicle fleets.

case study: local police RIHO

Local Police RIHO. The local police of RIHO are in charge of public security and law enforcement in the vicinity of Roeselare, Izegem and Hooglede (RIHO), in north west Belgium.

Inception. Orange (through the local brand Mobistar) and the local police of RIHO were keen to start working together to develop mobile applications. The local police RIHO immediately understood the potential benefits to them and due to their good relationship with Mobistar started to develop the solution.

The local police force constantly needs to identify people and collect details of illegal activity. This can include assessments such as illegal waste dumping, peace disturbance or simple offences such as not wearing a seatbelt and parking fines, however the administrative work even for these low level offences is extensive. Previously the police force would have to investigate an offence and then return to the police station to report in writing the events on the central system. This took time, was error-prone and de-motivating for the force. Using the legacy systems, it took an hour of administration for every hour on the road.

The police have a certain degree of autonomy to adopt new technologies as soon as they become available and are affordable. Almost half of the force is younger than 30 and comfortable with technology, expecting to use it as part of their working day.

Development. The front-end solution was developed by the application developer and the integration with the back end was performed by the RIHO development teams to encompass complex business rules derived from Belgian laws and legislations.

Deployment. It took just one month from the decision to go to launch of the mobile application onto BlackBerry smartphones. This enables on-the-spot assessments. Adoption was smooth - pilot users were carefully selected - people with a feel for technology and people who were willing to give constructive feedback to improve the application.

New features. New features for the future could include more complex incident logs for accidents or burglaries and advanced multimedia features (voice recordings and video).

Benefits. Over 12,000 offences are processed per year in the RIHO zone and currently 10% of them are being done through the mobile application, freeing up a huge amount of hours so that the force can spend more time doing their core job - to protect and serve. On-the-spot assessments allow the police to more accurately describe the facts and send pictures to supplement the file. The system generates the ticket automatically with no further paperwork required back at the station.

case study: life insurance

"Following an Accenture workshop on how changes to consumer behaviour are driven by the increased usage of smartphones, Generali France decided to work with Accenture to develop concrete business applications for its life insurance operations," said Stéphane Dedeyan, a member of the Management Board of Generali France. "This new application for iPhone will be particularly helpful to our financial advisors, who are looking for innovative ways to stay close to their clients."

Inception. Generali is the third largest insurer in Europe and was the first insurance company to offer life insurance. Generali France established its Internet Division in 2008 to build interactive skills and transform its customers' online experience. In the same year Generali was invited to participate in Accenture's Chaine de l'Innovation programme, initiated alongside other major businesses such as Orange as well as French students to foster innovation in mobile devices. The idea was to develop an application, which would enable Generali independent financial advisors to review reports on their assets remotely. This idea became a reality through iNominéo.

iNominéo provides a mobile workbench to Generali's independent financial advisors, who can assist clients in optimising their investments anywhere and anytime, with a real-time visibility of investment history, allocation across investment funds, and individual fund performance. Built to exact specifications, and launched in 2009, iNominéo was the first mobile application dedicated to insurance professionals in France.

Developed for iPhones, iNominéo is efficient and user friendly. Creativity and innovation workshops were conducted to rethink and redefine business processes. Screen mock ups were designed to fine tune the user journey for maximum efficiency during customer interactions.

New releases. iNominéo has demonstrated the value a mobile application can bring to independent financial advisors. To provide an even more efficient workbench, new features are being considered, in particular accessing more financial information regarding funds and contracts, setting alerts regarding funds, contracts and customers, and a benefits simulator.

Deployment. iNominéo is distributed to Generali's independent financial advisors through the Apple AppStore (within iTunes). The advisors have promptly adopted it and the application features have exceeded business users' expectations. iNominéo is now part of an advisor's daily routine.

Benefits. Generali was the first Life Insurance Company to provide their independent financial advisors with a comprehensive and efficient workbench, facilitating business and customer interactions every day. iNominéo was a success, celebrated by independent financial advisors and by peers: Generali Patrimoine has been awarded an Oscar for Innovation in 2010 for iNominéo. (Oscars of Life Insurance, by Gestion de Fortune).

case study: local council

Ayuntamiento de TORREJÓN DE ARDOZ

'Orange has been a very important actor supporting the implementation of this solution and co-ordinating everyone involved. We also greatly appreciate the social sensitivity that Orange has shown throughout this project.'

Pedro Rollán
Ayuntamiento de Torrejón de Ardoz

Ayuntamiento de Torrejón de Ardoz is a local government area of Torrejón just north east of Madrid, Spain. Torrejón city council is responsible for an area of 32.6km squared, and 120,000 people, and had an annual budget of 121 million euro in 2010. 1.7 million euro was allocated to IT.

One of the core activities of the town council is to ensure the safety and welfare of the local population. The Torrejón council identified a way to support members of their population who were victims of ongoing violence.

The Mobile Application. The council didn't want the application to attract unnecessary attention. For this reason, the local government decided to have the mobile application associated to an 'everyday' BlackBerry smartphone which was given to the potential victims. The solution incorporates a warning system that is activated when the emergency button on the BlackBerry smartphone is pressed three times. At this point, an emergency message and GPS location is sent to the local police. The support unit will then identify where the closest response unit is and deploy them to the GPS location, at the same time the response unit will also be sent a picture of the victim so as to be able to easily identify the person in danger.

Deployment and development. The deployment from concept to delivery took 18 months, which included the application development by Blom and the back-end system development, achieved by the combined resources from Orange, RIM and the application developer. The teams worked together and constantly considered what would be the best solution for the end users, especially when considering providers for the location and mapping functionalities, identifying the right devices and the right data tariffs.

Pedro Rollán from Ayuntamiento de Torrejón de Ardoz said, 'Orange has been a very important actor supporting the implementation of this solution and co-ordinating everyone involved. We also greatly appreciate the social sensitivity that Orange has shown throughout this project.'

Once the technical delivery was completed, training took place for the local police, the police control centre and the end users. However, for the end users, the simplicity of using the application has shown immediate results.

New features. The Ayuntamiento de Torrejón de Ardoz is not considering any further developments at this time as all needs are covered by this pioneering application for this user group. However, Ayuntamiento de Torrejón de Ardoz are looking into other mobile applications that are appropriate for other user groups, such as an application that monitors the traffic lights within the town.

Benefits. The core benefit is the police response time, which has improved by 50% from an average of 9 minutes down to between 4 and 5 minutes. The other benefits are being able to locate the victim using the GPS system and also being able to locate the closest police unit using the same technology. All of the emergency support calls processed through these devices are tracked and therefore can be used as evidence in the court of law at a later date.

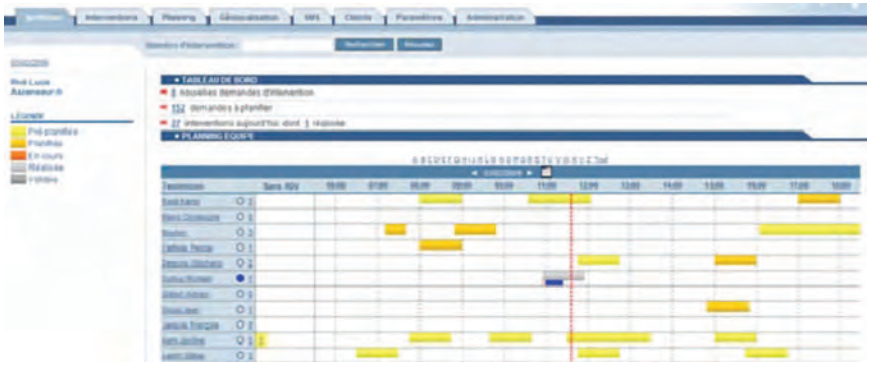
case study: equipment support

Patrice Fonseca, Head of Operations at Ascorel France saw a field technician from an electicity utility company using a handheld mobile application and realised the potential benefits for Ascorel. Ascorel, with the support of Orange, decided to implement ITR (Interventions en Temps Réel) which enables field technicians to perform maintenance in real-time.

Inception: Ascorel France installs and maintains products related to transportation and maintenance of heavy goods vehicles and equipment. Ascorel service technicians are available around the world to install or perform maintenance on cranes, fire trucks or heavy equipment.

Patrice Fonseca, Head of Operations at Ascorel France saw a field technician from an electicity utility company using a handheld mobile application and realised the potential benefits for Ascorel. Ascorel, with the support of Orange, decided to implement ITR (Interventions en Temps Réel) which enables field technicians to perform maintenance in real-time. ITR is based on Praxedo software, and encompasses Ascorel specific requirements, which enable the field force to schedule maintenance, manage spare parts, report activity and bill services. ITR provides field force personnel with work orders, assists them in procuring the right spare parts, provides background on the Ascorel products which require maintenance (cranes, fire trucks or heavy equipment), and assists in finding directions to the customer premises. ITR has been deployed and is supported on two devices, HTC (at first) and Samsung. It is regularly administered to encompass new types of maintenance and new products.

Development and Deployment: ITR was developed and rolled out to the Ascorel team in just 4 months. This timeline includes collecting business requirements, development with Praxedo and device selection. Both the field force and back office teams benefit from the mobile application, as they are provided with an extensive view of the maintenance (future and archive), plus a user interface which is more appropriate to manage the field force teams and timelines.



The Ascorel team were trained initially by the application developer and Orange in a one day session. This training has been rolled out to all teams, and within a month all field force at Ascorel were able to start using ITR due to the application's simplicity. Now that the application is active, field technicians and back office support frequently access the ITR application to retrieve customer records, gather maintenance information and fill report forms.

New features. There are many new features being considered by Ascorel to further develop the mobile application such as remote access to the maintenance database, diagnostic tools, enrichment of diagnostic and the addition of images, time tracking and maintenance optimisation (based on location and type of maintenance required).

Benefits. ITR has replaced paper forms and notebooks and has boosted field technician efficiency: relevance and timeliness of information, quality of service, optimisation of material and management of spare parts. Less back office effort is required to plan maintenance, handle reports, bill and collect payments. This has resulted in prompt lead-time and cash collection, with services billed two days after maintenance instead of previously thirty days.

case study: European National Police

Inception. Over recent years, national policing in Europe has changed substantially due to the new regulations. These regulations have brought about the requirement for central databases, and the need to check and log against these databases for each case. Tools must be available at the point of criminal activity to automate documentation. To address these regulations, police forces are increasingly using new technologies to access information in the field.

Police Force Mobile Application. The National Police Force designed and built this solution to support preventive, road traffic and criminal police units. This solution provides direct access to central databases from the field, increasing the speed at which information can be accessed (previously requests were done by radio), eliminating errors in the requests being made and ensuring confidentiality of the information being requested.

Deployment. The roll-out of this solution started at the end of 2007. Currently between 30,000 and 40,000 members of the police force are using it daily via 14,000 devices, which are rotated with the police vehicles. The solution has been deployed on dedicated computers installed in vehicles and also on handheld pocket PCs. Each device has been specifically developed using customised accessories such as modems.

When this solution was implemented, the technology was very new so training was provided as part of the project. This is still ongoing especially for new police officers joining the force, and is now provided as part of the initial training at police training schools.

Development. The solution design and development relied on an internal project team, with external partners providing components on request, including the mobile devices, data transmission, modems for vehicle computers etc. Orange provided data transmission and encrypted SIM card solutions. During this time the national police back-end systems were also changed from Oracle to Oracle www. to support the application implementation.

New features. As the solution is used daily, new requirements are being identified such as increased network coverage and bandwidth (3G) to support field operations as well as the ability to write reports using the mobile solutions (currently the application only has the capability to read the information held).

Benefits. An analysis led by the police force highlighted benefits for the mobile police force such as: reliability of data, security, confidentiality and short access time, but ultimately this project was approved due to mobile applications supporting the regulations and the need to reference the central database. This was one of the first implementations of this type in Europe and was part-funded by the EU.

what types of application are available?

Sales Force and Field Force management are the most frequently used mobile applications today.

Sales forces and field forces are the largest user groups that can benefit from mobile applications.

Sales force and field force management applications can be developed and rolled out with minimal integration with other IT systems. GPS routing can be added to the handset to guide sales and field force personnel to the customer premises.

Sales forces: opportunity management improves prospects and client relationships by creating business opportunities, and turning them into leads during customer interactions. Routing software can upload client locations into the GPS system to identify the quickest route.

Field forces: field force management enables you to receive field support requests and customer appointments on a smartphone with an optimised route. You can get help diagnosing and resolving technical issues (technical documentation, installation information, educational videos) which means that the field forces are more likely to be able to resolve the problem the first time they visit the customer. Support staff can then show the job as completed and route the team to the next location, uploading field support locations into the GPS system to find the quickest route to the destination, track their teams' progress and even find co-workers in the vicinity when more personnel than expected in required.

Business Intelligence is a growing need for information workers.

Marketing, HR and Financial intelligence applications are most regularly used to retrieve business reports regarding marketing and sales, finance, or human resources. These applications also regularly have the ability to alert you if budgets are exceeded or targets are not met.

IT intelligence applications use real-time dashboards to monitor IT systems. These enable you to receive alarms and notifications when performance targets are not met. They also allow you to raise trouble tickets to report IT issues and provide information to enable you to resolve them.

Stock, supply chain, order and point of sale management often require stronger integration with legacy company systems.

Operational applications require a greater integration with company IT systems. Stock management, order management and point of sale applications can nevertheless make a significant difference to organisations with large supply chains, sales administration and retail workforces. Similarly, business and IT intelligence can be greatly improved with dashboards that display and alert in real-time.

Stock management applications can be used to confirm receipt and dispatch of goods, consult stocks and check inventory.

Point of sale applications enable you to look up customer orders, add selected products and services to orders, enable payment (including credit and debit cards), and if necessary find a manager (for assistance with customer service).

Supply chain management confirms receipt and dispatch of goods, including stock requests, inventory checks and customer signatures upon delivery.

Order management turns leads into customer orders; confirms product and service availability, and schedules delivery dates during client meetings. Later you can be alerted to delivery delay or issues, and be able to inform the customer immediately.

financial services applications are gaining traction.

Life insurance advisors can access a 360° view of their customers' financial accounts, execute trades to optimise financial performance and receive alarms on funds and account performance. Additionally they can keep up to date with market trend information.

Bank customer representatives can access a 360° view of their customers' accounts, read product sales aids, obtain pre-authorisations for credits, and get customer signatures electronically for contracts and subscriptions.

Insurance claim representatives can access records, enter and approve claims, append multimedia information (photo, date, GPS location information), and obtain pre-authorisations.

transportation and utilities companies consider smartphones as an alternative to PCs and custom mobile devices.

Taxis can receive customer requests, confirm rides, and find the right route to pick-up and destination points.

Train controllers can control tickets and passes, retrieve traveller details and charge for fines and services.

Energy & Utilities Field Service representatives can enter meter information directly from a customer's home and upload it to a central database.

healthcare applications are entering the market.

Healthcare professionals expect in the long run to access patient medical records on their handheld, and complete bespoke medical claims paperwork while with the patient. In the short term, medical professions are identifying off the shelf applications that can support them.

what should I consider prior to the launch of a mobile application?

10 questions that you need to ask prior to embarking on a mobile application project

Based on the lessons learned by a large number of successful mobile application projects, here are ten questions that you should consider for your mobile application project:

1. Which customer-focused processes could most benefit from being mobilised? Also consider what benefit your customers and employees can see from mobilising current PC or paper-based processes. This could be linked to logistics, customer interaction, location and time. Consider simple features that could make significant efficiencies.

2. Which core processes makes the biggest difference to employee efficiency if they are accessed through a mobile application: quality of customer interactions, better organisation of the workday, greater autonomy to complete activities, shorter time to resolution, etc? All of these points can be pulled together into a ROI analysis.

3. Which mobile devices do employees currently own (none, laptop, classic phone, smartphones)? Does the mobile fleet comprise a single device model and operating system or many different ones? Do the phones have the functionality and usability needed to support the mobile application that you want to implement?

4. How much integration is required with existing corporate systems? Can a standalone application provide the expected benefits, for instance to organise the field force or to log sales opportunities? Or does the application require further integration with your order or stock management systems?

5. Is a mobile application or the mobile web more suitable? Which is most appropriate to meet your user requirements: a mobile application requires development of a user interface and link to the back end systems, the mobile web requires constant network connectivity. Also consider updates to your application once it has launched, new releases of functionality or security.

6. How do you reinvent your business processes to encompass mobile application usage? How can the application contribute flawlessly and seamlessly to customer interactions and interventions? How does the mobile application process flow differ from PC and paper-based processes?

7. How should the user interface be designed? Which screen flow is the most appropriate to match the business process? Which screen design and data capture (text, multimedia, speech to text) is most appropriate? How will this look on the devices you have?

8. How to test, roll-out and train business users? Has the application been tested technically and also by users? Is the application intuitive enough to roll-it out to users with minimal documentation (FAQ, user guide)? Or is eLearning or classroom training required to implement significantly refreshed business processes?

9. How best to drive mobility changes across the workforce? Which communication plan (i.e. newsletter, regular super-users feedback) and which angle (excitement of technology, user benefits, and value realisation) can appeal to the workforce?

10. How will you support the users after roll out to manage the fleet of employee mobile devices, ensure their continuity when lost or broken, maintain the application and support the users over time? How will you regularly manage the devices and distribute the new application releases across your user group?

what technology should I use?

To release an embedded application for several operating systems, there are two routes: developing several source codes in each OS native language based on one set of business requirements, or developing a code for one particular OS and porting it to the other platforms.

Numerous technology providers have developed computer-aided software engineering solutions to facilitate cross compiling of source codes, and methods to port a code from one OS to the other platforms. However the porting from one operating system to another often causes problems with the ergonomics of the application.

Developing for more than one device or operating system reduces the risk of continuity in the event that the device and / or the operating system are discontinued.

Complex functions and centralised databases may already be in place for companies that have installed packaged software before, in this situation the effort of development and project risks will be reduced.

two technology options to deliver your mobile solutions

Downloadable mobile applications. Mobile applications are pieces of software, specific to each operating system, which are downloaded on to a mobile device either directly or from an application store. This means that access to this application is easy through an icon that is on the smartphone. Business logic is run on the device, and information is uploaded periodically to a central database. Connectivity with the phone features such as the camera and GPS is simple, and the information is easily handled in the application to append pictures to a report, or share geo-localisation coordinates with others.

Also, the application can work offline for when you are unable to access a mobile network such as in an airplane. The drawback is that if you decide to manage a varied mobile fleet with different devices and operating systems, multiple applications will need to be deployed.

Web-based mobile applications. Mobile web-based applications work exactly like a web site for PCs, but are specifically adapted to be viewed on a mobile device. It is easy to view the mobile web on a variety of different devices with different operating systems; however the mobile web does not link to the device features (camera, GPS etc.).

However development is normally easier and lower cost for developing across a range of operating systems. Also the application will not be accessible offline, and when the end users wishes to access the application they need to launch a web browser and then enter the URL, which are often long and complex.

In the future, HTML 5 will offer a median route between mobile web services and mobile applications. HTML5 navigators are likely to correct many current issues: offline mode, access to video and geo-localisation, advanced electronic forms.

Many device manufacturers and operating system providers are promoting HTML5. It is already available in some email services, but it is not expected to be widely available for mobile applications until 2012.

three types of applications: tailor-made, packaged software, SaaS (Software as a Service)

Mobile applications can be tailored to a company's specific requirements. Mobile applications developed with operating system-specific software development kits (SDKs) provide a graphical user interface, and connect with systems in the Cloud, which perform complex functions and hold companies' centralised databases.

Existing PC applications can be redesigned and mobilised often being based on the same back-end database. The drawback to flexibility and customisation is the effort required to collect requirements and redesign systems and processes for mobile situations.

More packaged software is becoming available. Developers are progressively rolling out mobile user interfaces in addition to their PC user interfaces. Horizontal applications, such as enterprise resource planning, sales force support and field force support now have a standardised mobile user interface, which can be configured to unique specifications.

SaaS (Software as a Service) provides a simple solution to meet business requirements. Developers often provide both a mobile application and a PC based application for management purposes. The SaaS provider will host the applications from a centralised database at their premises. The cost of development and hosting of the application can be optimised, and the complexity of supporting multiple devices and operating systems is handled by the SaaS provider. Typically, mobile SaaS providers charge for the usage of the applications for each user and for a specific time period.

how do I implement a mobile application?

System integrators and mobile operators can share a breadth of client experience to design and build the solution with the most effective ROI.

ecosystem of skills and partners

Business and technical expertise is required to provide the right link with your business requirements. This can be provided internally or by a partner. Super-users with a feel for technology and an urge for change can assist in the design of the mobile application, alpha and beta test the new application during a pilot phase, and provide constructive feedback before rolling it out to the entire user base.

Software developers provide the technical components of the mobile application solution: they can range from technical components to a SaaS packaged software, which could also provide an off-the-shelf cloud computing back-end.

Mobile application design skills are required to craft the right design that can ease business processes to ensure that entering or viewing information at the point of activity is simple. Organising and developing mobile applications screens ergonomically, and demonstrating restraint, to avoid crowding applications with too many features will ensure you have an easy to use application.

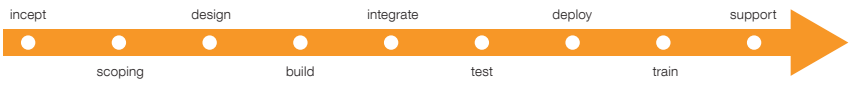
Systems integration skills are required to design an end-to-end architecture that will meet the requirements (such as applications working offline, replication for the information to be uploaded or security to ensure data integrity and protection), connect the mobile application to existing systems, or to build new ones which will perform complex functions and host databases centrally.

Mobile operators provide advice regarding mobility solutions (devices, network, connectivity, security). They have the ability to bring business and mobile expertise to the inception of mobile applications for employees that deliver tangible benefits. Many mobile operators are building partnerships with approved application developers to bring the most experience to mobile application projects. On top of that they have the ability to test and approve your mobile application before aiding you in its release to your teams. Once your application is released many mobile operators are now able to provide you with application device management solutions to control access to your application.

Innovation engine and a breadth of client experience. The mobile operator offers advice on the appropriate handsets to meet your requirements, and provides the necessary network and connectivity capabilities; it can also support large scale deployments both nationally and internationally.

mobile applications for employees: a blend of classical IT projects and innovation projects.

Like classical IT projects, mobile application projects start with inception; go through precise scoping, design, build, integration, testing, deployment and training, before the solution enters into ongoing support and maintenance.



Like innovation projects, mobile application projects are introducing significant process transformations: mobilising applications and supporting individual employees at the point of activity in real time requires different user interfaces than processing data at the office in batch mode.

how do I make sure mobilisation is a success?

10 key factors of success: lessons learned from early innovators

1. Start small, scale fast. Between equally beneficial mobile applications ideas, select the simplest to implement: manageable scope, manageable change, engaged workforce. Once a first success has delivered business benefits and gained advocates, scale fast with new features and other user groups.

2. Select the right device for the mobility situation. Usability is key for success: it drives experience, speed of use and error-free execution. Device ruggedness may be needed to avoid regular replacements (bad weather during outdoor use, hostile environments in industrial settings); also battery life is critical for applications that are expected to be used intensively.

3. Consider software packages to fulfil your mobile application needs. Various software packages encompass a breadth of experience and lessons learned into a mobile application for horizontal and sometimes vertical business needs. A careful selection is required to ensure that the solution you choose fits with your specific business activity. Also, analyse SaaS (Software as a Service) solutions as they may minimise the effort required to roll out an application.

4. Carefully select an ecosystem of partners. Having the right blend of skills (mobile operator, systems integrator, and mobile application designer) is critical to deliver the end-to-end project. Operators and system integrators can offer innovations and lessons learned from a variety of clients. 37% of businesses view mobile operators as a trusted partner to assist in software selection and deployment[6].

5. Consider device management to secure handsets, applications and connectivity. Inappropriate use (device unlocked, unknown content download and installation, etc.) and loss of handsets with unencrypted data may result in security breaches. Device management prevents forbidden usages (unauthorised web services and applications, controlled data transmission) and can be used to wipe content and downloads.

6. Rethink business processes (nearly) from a blank sheet of paper. There is more to mobilising business applications than transposing well-oiled paper or PC based processes into a mobile environment. Ergonomic principles differ: smaller screens, touch screens, smaller keyboards, limited depth in screen flow, restraint in features and icons, etc. Mobile applications lead to rethinking business processes around customer interactions, and take onboard technological innovations (speech to text, multimedia contents etc).

7. Design applications with mobile usability in mind. Artistic direction is required to guide the translation of business benefits and processes into something more visible and tangible. During inception, a design brief will provide design goals that application designers will have to satisfy.

8. Gather early feedback from business users, and build the application iteratively, starting with mock-ups at first and perfecting applications through alpha and beta tests before rollout. Mock-ups can be crafted early on, and once functionality trees have been defined, the screen flows and system navigation can be created.

9. Minimise the different operating systems and devices in the fleet for target user groups. The majority of businesses are now supporting more than one mobile operating system. Varied fleets drive higher costs for support, application development and maintenance. Employees in a given user group may have been provided with different devices overtime, or allowed to use their personal device.

10. With a varied mobile fleet, consider mobile web-based applications. Operating systems are proprietary; developing applications for multiple operating systems requires translation from one to another, therefore delivering a web-based application will be easier if you have a varied mobile device fleet.

[6]Source: IDC: The state of mobile enterprise software in 2009: An IDC survey of applications and platforms – decisions and deployments. IDC#219600. August 2009.

what devices should I consider?

We are also starting to see an increase in the number of end users that are using their own equipment at work, this could automatically increase the number of operating systems that you need to support. Before you implement any mobile application, you will need to evaluate and possibly restrict the fleet of devices that are actually being used.

are smartphones or mobile tablets better suited to workers' mobile needs?

A new generation of smartphones has emerged with:

- friendly graphical user interfaces,
- touch screens as an alternative to physical keyboards,
- an easier way to develop (Software Development Kits),
- rich multi-media features (sound recording, images, built in cameras with bar code reading functionality and video recording),
- enhanced network connectivity (3G networks, Wi-Fi),
- connectivity choices, 3G, Bluetooth, Wi-Fi.

GPS (Global Positioning System) features are now embedded in smartphones: they open access to geo-localisation applications to position the device on a map and obtain directions to the following point of activity (e.g. navigation applications). They also allow more efficient collaborative working with internal teams and customers, who can be easily positioned on a map.

Mobile applications are natively Cloud Computing-oriented, they call web services to access and write data from centralised databases. Smartphone and tablet processing power today is superior to a laptop computer ten years ago, at a fraction of the price.

As embedded applications and mobile web services multiply, and as content becomes increasingly rich and complex, smartphones and tablets are increasingly subject to the threat of computer viruses. Firewalls and anti-viruses are already available for mobile devices, and are becoming a key component of a business security policy.

Tablets: a wider screen means that more sophisticated business requirements can be met. Recent tablets closely resemble "smartphones", with similar features and connectivity (some do not have voice capabilities) and a much bigger screen. Software development for tablets is closely connected to smartphones: tablets often share operating systems with smartphones, and have similar features such as the ability to start in a few seconds. In cases where mobile phones are impractical due to their small size, tablets offer a good alternative.

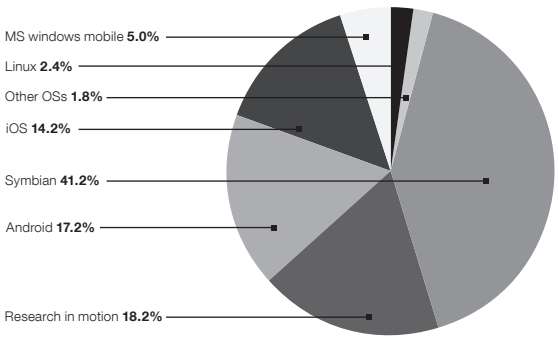
Consider the working environment that the smartphone or tablet will be used in, and which factors are most important: for example information security in areas at risk of device theft, screen brightness in the sunshine, or being able to use the device with one hand - factors such as these might need to be taken into account when choosing a device, and device experts can help you make the right decision.

which operating system and when should I get started?

The usability of the last generation of smartphones has removed technical bottlenecks: 86 million iPhone and iPod Touch users are registered, and 5 billion downloads have already been made from the Apple AppStore[8].

Depending on your IT policy, go for Open Source or allow proprietary Operating Systems. Android and Linux in particular comply with higher degrees of openness, with additional benefits such as making these devices easier to manage remotely.

The following table presents the mobile communication devices Open OS sales to end users by Operating Systems (Worldwide, 2Q10, Thousands of Units)[7]:



If you opt for a downloadable application, ensure the operating system allows another distribution model than proprietary application stores. Application stores are useful tools for downloading applications, but you may not necessarily be comfortable to expose your company applications publicly. At the time of your decision, make sure that your operating system allows a distribution method that meets your expectations of discretion, ease of distribution and is supported by your operator (from technical support to device management). Often your mobile operator can help with application deployment and ongoing management.

should I get started now or wait for the next generation of devices?

The next generation of smartphones will be better and more developed that the current range, however it is common sense to assume that this will always be the case, technology continually evolves and smartphones will evolve further in the future. Connectivity will increase with the internet of things through RFID (Radio Frequency IDentification), a critical consideration if you have attached Radio Frequency tags to your products or supply chain.

Replacing security cards and passes will be a plus: embedding NFC (Near Field Communication) will help replace secure building entry cards. Unless card replacement is a core benefit, its absence is not a roadblock.

Speech recognition will increase usability for workforces manipulating goods and equipment, and whose hands are not free when they need to retrieve information or to capture data. Still in its infancy, speech recognition will provide an alternative medium to capturing data on the go when typing is impractical. Early developments of speech recognition through embedded software and mobile web services are paving the way for a practical and efficient feature for field operations applications and workforces.

If you continue to wait for technology to evolve it is possible that you will wait too long and lose the competitive advantage that mobile applications can add to your business. The other option is that you start to involve your business in mobile applications and over time as technology evolves, so can your mobile applications. The wait and see approach was acceptable a couple of years ago, but this is not an approach we would encourage now that so many businesses are starting to use and promote their mobile applications.

[7]Chart created by Accenture based on Gartner research. Source: Market Share: Mobile Communication Devices by Region and Country, 2Q10, Carolina Milanesi et al, August 11, 2010.
[8]Source : Morgan Stanley Internet Trends, 7th June 2010

conclusion

financial benefits + customer and employee experience + innovation

Early adopters have implemented applications and grasped the benefits. Benefits don't just include productivity and shorter lead-time to collect payment; they have also been proven to improve customer experience and support paper-free working environments. Better efficiency equally benefits the customers' and employees' experiences, strong drivers of a lasting business performance.

Mobile applications enable innovation and a re-think of business processes for the future: employees' access and capture the right information directly at the point of activity.

The technological innovation that we are experiencing is leading the way for businesses to achieve real financial benefits.

Succeeding in your Mobile Application transformation journey

Prior to getting started	Key success factors
1. Who will benefit most from the mobile application project?	Start small, scale fast.
2. Where can a limited set of features make a big difference to efficiency?	Select the right device.
3. Which mobile devices do these workers currently use? Are they smart enough?	Consider software packages.
4. How much integration is required to the existing corporate system?	Carefully select an ecosystem of partners.
5. Is a mobile application or a mobile web page more suitable for your requirements?	Manage devices to secure handsets, applications and connectivity.
6. How do you reinvent the business process to encompass mobile application usage?	Rethink business processes (nearly) from a blank sheet of paper.
7. What are the essential features required at each step of the business process?	Design applications with mobile usability and artistic direction in mind.
8. How will you rollout and train business users?	Gather early feedback from business users, and build the application iteratively.
9. How will you best manage change?	Minimise device diversity within a fleet for target user groups.
10. How will you support the users?	For a diverse mobile fleet, consider mobile web applications.

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