

Absoft White Paper

A starters guide for implementing business mobility

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Executive summary

Businesses are faced with the challenge of engaging an ever mobile workforce in an increasingly mobile world. Today's globalised and challenging business environment requires greater creativity in order to find solutions which can lower costs and increase productivity. Mobility has become an important tool in surmounting both of these challenges.

In order to implement an effective mobile business solution, a company must first understand its user groups and their requirements. The users with most requirement for a business mobility solution fall into two categories; occasional users and onsite users. These user groups either need to approve work and requests while on the move, they need to access data when working onsite without connectivity, or they have no fixed workplace at all.

Mobile solutions already available include web applications, hybrid applications and native applications. A solution needs to be chosen or designed based on how users will be accessing apps, what IT infrastructure is available, what existing ERP systems are in place and how complex or specific functionality needs to be.

Hybrid apps are perhaps the most practical choice when considering that the lifecycle of business applications are considerably longer than those of mobile devices; the application needs to be portable to newer device types. This must be weighed up against the cost for a more generic app which looks and feels the same across all supported device types.

Best practice for planning a mobility solution includes defining the added value or business case, defining a mobile strategy, designing applications with specific users in mind and taking the correct steps to implement your solution.

Introduction

Today's business life is mobile. Employees are in and out of meetings, in between appointments, on the move and travelling. The conventional use of desktop computers and laptops is being challenged by the increasing use of mobile devices. The time spent in front of desktop computers is decreasing and smartphone or mobile device use has overtaken laptops and desktop computers.

The employees of today are used to being connected wherever they are, they are used to accessing data on their mobile devices at any time of the day and expect a user friendly, intuitive experience from applications. These consumer experiences and expectations of usability from applications for personal use are transferred onto business applications.

This presents both a challenge and an opportunity to businesses; there is the potential to increase organisational motivation and efficiency if business applications can align with how employees today actually want to work.

To place mobility into the picture correctly, organisations need to look at the patterns which evolve within different groups of employees. We have defined 3 high level user groups, each with distinct requirements:

- **Expert users**

Some users can be classed as expert users and spend a good share of their time in front of a desktop computer using ERP systems on a daily basis. In their case, all applications need to be organised in a natural and intuitive way to reflect their work domains in an easily accessible portal.

- **Occasional users**

Occasional users touch ERP applications far less frequently and are often on the move or travelling. This user group predominantly consists of supervisors or managers who only have to keep in touch when it comes to approvals or management reporting.

- **Onsite users**

Last but not least is the onsite users group. They execute work on job sites or are perhaps not even attached to the organisation directly. Their requirement is to execute work tasks anywhere, anytime, even if there is no connection to the ERP system.

The roles which are enabled by an ERP mobility solution can encompass:



The mobility landscape

When considering the potential for a mobile solution, you will need to evaluate a number of options that are out there. Some solutions can be purchased pre-packaged 'off the shelf', while other companies may find it more practical to design their own application. What is important to look at are the main business themes and distinguishing questions in order to identify what would and what wouldn't work for your users.

There are 3 top level mobile application formats to distinguish between:

1. Web applications:

A web app can be accessed via a desktop or smart device, but must have connectivity at all times in order to function. This is the easiest and cheapest solution to deploy, but comes at the cost of some features which can be developed for a specific device, and performance can be slow.

2. Hybrid applications:

A hybrid app can be used on a range of supported devices. It can function online or offline, but there will be limitations for data storage when working offline. Its speed performance and functionality are middle of the range between a web app and a highly tailored native app.

3. Native applications:

A native app can function with or without connectivity and has the best performance and functionality. It is highly tailored to meet specific user needs, making it very user friendly and intuitive. During periods without connectivity, adequate data storage is available and data will be uploaded to the ERP system when connection becomes available again. This solution is the most expensive to implement and is developed for use with a specific device.

	Web App	Hybrid App	Native App
Speed performance	Can be slow	Mid-range	Highest
Required connectivity	Online only	Potentially limited storage for offline	Online or offline
Device types	Platform independent	Supported devices only	Developed per device type
Usability	Good, but trade-offs necessary	Not all APIs supported	Richest features, most intuitive
ROI	Quick and cheap	Mid-range	Most costly
Functionality	Lightweight	Mid-range	Complex

In all cases a successful mobile solution should offer the same capabilities on all platforms, but needs to feel native on each. It should be designed using a layered architecture that improves reuse and maintainability, especially if future device types will have to be supported as well.

Defining a business case for mobility

A mobile strategy needs a clear value proposition determining what added value there is over the current solution. In order to achieve that value proposition, actual users from the target group need to be involved in the process from start to finish, from the design phase through to go live.

So where are the mobility value drivers in your organisation? This is an important question to answer:

Productivity

- **Processes:** Where could we be more efficient and save time?
- **Streamline:** Where do we reduce duplicate entry of the same information?
- **Data consolidation:** Where is information processed outside existing business systems?

Quality

- **Minimise error:** Where do we improve the quality of information at point of consumption? How can we avoid human error?
- **Improve visibility:** Where can we add information which wasn't available before, or was kept separate? For example, can we add digital photos and geo-location to the information?

Compliance

- **Minimise non-compliance:** Are there areas where procedures are not being followed or broken?
- **Tighten procedures:** Where can adoption of mandatory requirements be improved?

Value

- **KPI's:** Which key performance indicators do we seek to improve?
- **Data capture:** How are indicators measured?
- **Performance analysis:** Can we accurately monitor efficiency and productivity performance against targets?

Designing a mobile strategy

When deciding on how to mobilise the business, good thought has to be given to what mobile platform has been chosen and what it has to achieve. It has to support the business processes and applications running on the different business systems as well as being consumable on all the devices currently available. Let's find the right questions you will need to ask:

Connect

- **Backend systems:** What are my underlying business databases?
- **Connectivity:** Will user groups have WiFi, 3G, 4G? Will there be intermittent or no connection at all?

Consume

- **Reach:** What target group do we want to reach? Who are your mobile workers?
- **Devices:** Which devices will be supported? Are you focusing on devices provided by the organisation or can everyone bring their own device (BYOD)?
- **Accessories:** What other features are required? (Camera, GPS, Maps, Barcode/ RFID reader, voice, multi-touch screen). They can make considerable impact on the acceptance of the solution if they replace or augment existing hardware the mobile user has to take with him as of today.
- **Hazardous areas:** Do you have limitations for the use of equipment in your production areas? Certification requirements like ATEX or hygiene limit the choice of devices which can be used.

- **Ruggedisation and screen sizes:** Is the device practical for its intended user? This is an especially relevant consideration in field services where gloves are used, introducing another element of complication. Small screen sizes or devices requiring a stylus tend to fail during adoption by the intended end user. The mobile solution and device must be practical.

Control

- **Deployment:** How will the application be deployed and updated?
- **Infrastructure:** What infrastructure is needed? How will it be installed and administered on an ongoing basis?
- **Security:** What protocols are in place? Is a mobile device management solution needed for security compliance?

Create

- **Programming paradigms:** Which new programming skills are required? Which skills can I keep?
- **Layered design:** Allow reuse by service oriented architecture; surface data integration consistently

Designing a mobile solution

It is absolutely necessary to define what your user group's roles are. This will vary from business to business or by value propositions. The diagram below shows typical lines of business in a company for which self service mobile apps can be utilised. You may also have senior management users that require business analytics rather than self service applications.

Line of Business		Users Roles
	Human Resources	<ul style="list-style-type: none"> • Employee • Manager
	Sales	<ul style="list-style-type: none"> • Sales Representative • Internal Sales • Manager
	Procurement	<ul style="list-style-type: none"> • Purchasing Agent • Manager
	Manufacturing	<ul style="list-style-type: none"> • Material Requirements Planner • Production Worker • Supervisor
	Supply	<ul style="list-style-type: none"> • Supply Planner • Manager
	Finance	<ul style="list-style-type: none"> • Controller • Account Analyst • Collection Specialist • Cash Manager
	Asset Management	<ul style="list-style-type: none"> • Technician • Manager
	R&D, Engineering	<ul style="list-style-type: none"> • Engineer • Manager
	Management	<ul style="list-style-type: none"> • Senior Business Manager • Director

After you know what your user roles are, how should you go about purchasing or designing a mobile app? It is crucial to approach mobile app design with a new mind set, not just repeating traditional business software development.

It is worth mentioning that there is a fundamental design difference between a regular business application and a mobile application. On a mobile phone or tablet, there is a very limited amount of screen space. If you have ever had to side scroll to view something on a website, you realise how much of an inconvenience it is. This is magnified on a mobile device. Even with the ability to turn the device lengthwise, the resolution is still extremely small. Add the discomfort of having to use gloves in a hazardous area; have you ever tried to pinch or stretch the screen on your smartphone with gloves on? Your regular website or application visualised on a phone is not going to be an adequate solution.

Apart from suitability for screen size, some rules need to be put into place to make app design fit for purpose:

One user, one app

- **One target user group:** Do not try to make the app work for everyone.
- **Understand your target user groups:** Are they occasional ERP users? Or are they mobile workers without a desk?
- **What is relevant to them:** Understand what information they have.
- **What do they need:** Understand what information they need.

Clean up

- **Less is more:** Keep the design simple. Allow the user to easily find what they need. Don't let unnecessary information get in the way.
- **The 2 minute rule:** If a process takes more than 2 minutes you may have to break it down into simpler steps.

- **The 3 step rule:** If a process takes more than more than 3 steps you may have to break it down into simpler steps.
- **Minimal clicks:** The less to click or tap or pinch or stretch or swipe the better!
- **No frills please:** Include as few fields as possible. Only present information to the user which is necessary to complete the task. Especially considering screen sizes and the limited storage and processing performance available on smartphones or tablets.

Make it simple

- **Easy view actions:** No one wants to swipe across a lengthy table to find the information they are looking for at the bottom or far right of a page. Show items to be actioned and show them with a status, like a traffic light system.
- **Acceptable performance:** If the application is too slow to start and run the user is very likely to reject it and revert to old ways. This is important to keep in mind since ultimately mobile devices are powerful, but not as powerful as your desktop computer.
- **Intuitive to use:** If you need to write a 50-page document (or any document at all!) to explain to a user how to use the app then you have gone off track.
- **Narrow the scope:** Deliver relevant updates frequently. This will ensure quicker return on investment through innovative and iterative feedback cycles with the end user. This is especially true for the initial mobile project scope, which will easily get side tracked just by putting the new technology in place anyway.

Steps to mobilisation

You have now identified the added value of a mobility solution for your organisation and narrowed in on one solution from your short list of application options. The decision is made to invest in mobility. What are the important steps leading into the implementation?

The initial steps that will need to be taken for mobility implementation include:

1. Appoint a strategist

Make it one person's day job. Unify the approach of all mobile movements otherwise the organisation will have major fragmentation of the tools and technologies.

2. Profile user groups

Describe a day-in-a-life-of- your individual user groups. Understand the user groups and describe their use cases.

3. Prioritise

Allow visions, but be firmly founded in what is feasible. There has to be the voice of reason between user needs, devices used, perceived value, supporting technology, affordability and priority.

4. Focus

Define which user group and application is the first prototype, or first to pilot the mobile technology which is to be brought in. Don't underestimate the effort and difficulties to prove the value of mobility in the first iteration. Keep your focus narrow.

5. Provide a budget

Mobile is not 'one and done'. Provide budget for research, prototypes, pilot, testing and subsequent updating and improvement. A single app won't do, it is about rapid iteration and innovation, refining the mobile apps and solutions. Allow for porting to all relevant devices types, especially for BYOD solutions.

6. Mobilise your enterprise systems

Define a layered approach. Allow reuse by service oriented architecture; surface data integration consistently, develop a reusable framework for the user interface and a consistent user experience.

7. Poor design is a silent killer

Listen to the targeted users. If you cut the wrong corners, intended end users will be frustrated and ultimately refuse adoption of the app into their daily life.



Conclusion

Solutions for mobility are available now and they have become key tools for businesses to improve productivity and lower costs as well as better engage their employees.

When planning to implement a mobile solution, focus on simplicity for the user and robust design for the IT infrastructure otherwise investment will be easily lost.

Select the right mobile solution for your business, budget and user needs, whether that is a flexible web app or a highly tailored native app.

If you don't have the internal skills and resources to see this process through, find the right partner who can help you implement a mobility solution that is cost effective, manageable and fit for purpose. Some mobile solutions can be bought 'off the shelf' rather than requiring you to design it from scratch (assuming you can provide the correct IT infrastructure to support it).

Prepare a mobile strategy with a clear process from the design phase through to go live.

During implementation, test your solution properly before rolling out to the wider organisation and ensure proper support will be in place to maintain your system as it evolves.

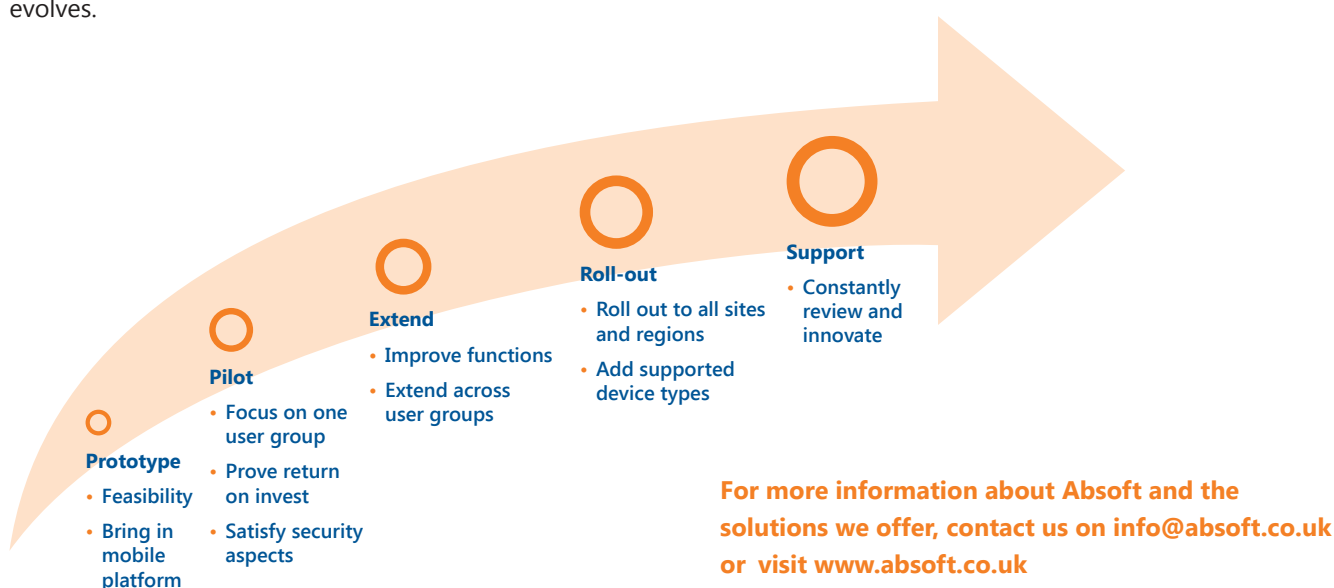
About Absoft

Absoft is an independent provider of Enterprise Resource Planning, Business Intelligence and Enterprise Performance Management solutions.

As an SAP gold channel partner in the UK and SAP channel partner in Norway, we engage with clients in a range of areas, including; forecasting management areas, planning, reporting, analytics, data warehousing, dashboards and scorecards.

We work with large or mid-size organisations that have invested in SAP solutions and want to make full and effective use of SAP within their business, and we also have many clients that need to invest in performance management solutions but want help understanding where to start. Absoft helps clients build a roadmap, a business case for investment and select the most appropriate technologies for both their immediate and future needs.

We are proud of our track record in customer service excellence and our belief in delivering business solutions of enduring value – our first customer has remained our customer since 1991.



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