Absoft White Paper

A guide to Mobile Business Intelligence in SAP

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Contents

Executive summary

Mobile Business Intelligence (BI) enables users to access the same analytics and data they would find on a PC-based solution through mobile devices such as smart phones and tablets.

Increasingly, companies are evaluating the benefits, cost effectiveness and practicalities of extending their existing BI solutions to include mobile technology.

The primary benefits of Mobile BI, which make it an attractive proposition are:

- Increased operational efficiency
- Accelerated time-to-decision
- Deepening customer engagement
- Streamlined workflow processes

The trends driving adoption of Mobile BI have never been stronger. The use of user friendly mobile devices such as smart phones and tablets is increasingly prevalent in both personal and business environments. Individuals expect the same ease of access and level of content in their business applications as they do in their personal applications. In fact, users increasingly want to use a single device to access all of their information on the move, hence the culture shift to allow employees to 'bring your own device' to work (BYOD).

Today's modern businesses need to work faster and smarter to maintain a competitive edge. The requirement for effective decision making on the move means that a mobile workforce and management team needs the ability to access and analyse the same business data they use in the office, wherever they are, using smart phones and tablets, to make effective, immediate decisions on the go. Now that Mobile BI technology is relatively mature, implementation is lower risk and lower cost.

Mobile BI also helps overcome many of the traditional barriers to adoption of BI. It makes information accessible to users any time, whether or not they are in the office, and the apps which are used to provide the content are significantly more intuitive and user friendly than the corresponding desktop tools.

Once you've made the decision to deploy Mobile BI there are several aspects to consider, which will ensure that your project is successful. Most importantly, rather than being treated as a separate activity, your Mobile BI deployment should be considered in the context of your overall BI strategy, using your existing BI solution as the foundation for any developments. This will allow you to leverage your existing investment but it also means you may need to address any weaknesses in your existing BI system prior to commencing the project.

Whilst you should use your existing reporting capability as a starting point, you must review the reports to ensure they are compatible with the mobile format. Challenges include ensuring that reports and dashboards are suitably designed for the mobile format, and timeliness of data. How up to date does the report information need to be to capture the full benefits of Mobile BI?

Usability x content = Effective and continued usage

There is also the choice of which mobile solutions to adopt. SAP has developed a range of SAP® BusinessObjects™ tools, which support and deliver mobile capability and are now well established having been available for the past two years. Each has its advantages and disadvantages and some of these are discussed later in this white paper. Not all tools are available in all operating systems and this is another factor to consider before embarking on your Mobile BI deployment.

In summary, Mobile BI can benefit businesses in numerous ways and the technology is available and mature enough to support it, so to keep up with the competition it is time to integrate this into your overall BI strategy now.

Introduction

Simply put, Mobile Business Intelligence (BI) is providing users with analytical content via mobile devices such as smart phones and tablets in any location. Mobile BI should enable users to access the same analytics and data they would find on a desktop-based BI solution.

Mobile BI should not be thought of as a replacement or alternative to your current BI solution - it is an extension of your BI capability. Mobile BI should be used to maximise the benefit of your information by making it available to the right people, at the right time in an intuitive and impactful tool.

In this paper we will discuss why you should be looking at Mobile BI and why now is a good time to do so. We will cover the business and technical trends which are driving organisations to adopt Mobile BI, and the benefits it brings to those who invest.

We will highlight what a good mobile solution looks like and how you can, and should leverage your existing investment in BI to deliver mobile capability. We will finish by looking at how the SAP BusinessObjects reporting tools support Mobile BI and show how easy it is to mobilise your existing content.

Why Mobile BI? Why now?

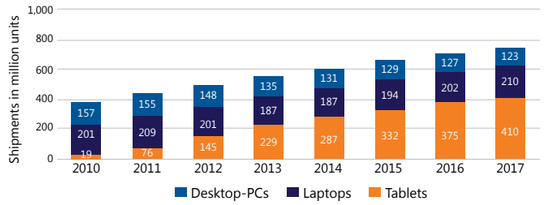
Why is now the time to start looking at Mobile BI? There are a number of business and technical trends which have been driving the push to Mobile BI.

The prevalence of mobile devices

It is clear that mobile devices (smart phones and tablets) are now commonplace and are becoming increasingly prevalent across the population. According to New Media Trend Watch there will be 30.9m smart phone users in the UK by the end of 2013. This corresponds to 48.4% of the overall population having a smart phone. By the end of 2017 it is predicted that this will rise to 2 out of 3 people owning a smart phone.

Sales of laptops and PCs are falling dramatically and, according to IDC, tablet sales are expected to eclipse PC sales by the end of 2013.

Forecast for global shipments of tablets, laptops and desktop PCs from 2010 to 2017 (in million units)



For many, particularly the younger generation, mobile devices are the primary device for accessing the internet and communication.

The price point for smart mobile devices has reduced dramatically since smart phones were first introduced into the market – compare the first phones that allowed calls, texts and picture messaging, with today's phones that have hundreds of applications built in or available for a small fee.

In some countries including India and China this is already the case and many experts are predicting that mobile usage will eclipse desktop usage in the next few years.

Bring your own device (BYOD)

BYOD policies are becoming more popular with organisations for two main reasons. Firstly, BYOD can reduce the cost of IT. With BYOD the employee is responsible for purchasing and maintaining the devices used. The IT department's responsibilities are then limited to ensuring that the employee's devices can access the network and the tools they need.

Secondly, it allows the employees to choose the tools that suit them best and that they are most comfortable using. This results in higher productivity and employee satisfaction. This phenomenon however means that the division between business and personal communication and interaction is breaking down or becoming blurred. Users are experiencing a level of service from their personal applications such as social media interactions and are expecting the same experience in their jobs.

Decision points extended

There is an increasing need for employees to be able to make quick, accurate decisions regardless of whether they are in front of their PC or not. Providing BI content through mobile devices gives employees the information they need at their fingertips, whenever they need it and wherever they are.

Mobile BI technology is established

Mobile BI has been available for some time and is considered to be a relatively mature technology. The SAP BusinessObjects tools discussed later in this paper have been available for two years. Thus Mobile BI tools are considered to be stable and represent a low risk implementation (with a high return on investment).

More recently, the majority of BI vendors have adopted a 'mobile first' policy to developing their tools and technology i.e. they recognise the importance of mobile applications to their customers and their priority for developing updates and new tools is to focus on mobile capabilities first and foremost.

The benefits of Mobile BI

Access BI any time, any where

The obvious benefit of Mobile BI is that it provides your employees with the access to the critical information they need to make decisions at a time and place convenient to them. The ability to access the BI information anywhere at any time increases their ability to make informed accurate decisions at the right time. It will enable them to seize opportunities and address issues as and when they arise.

Increased user adoption

The other benefit of Mobile BI is that it can increase the adoption rate of BI by giving greater access to existing users and open it up to new information consumers. There are many reasons why users do not use BI at the moment:

- Users spend a lot of time out of the office
- The desktop tools are perceived as being too technical and difficult to use
- The data is not presented in a user friendly manner

Mobile BI addresses these issues. Firstly, as we've stated above it makes BI accessible to users wherever they are, and so removes the need to be in the office to access information. The apps which are used to provide the content are more user friendly and significantly more intuitive than the corresponding desktop tools. Like apps used in your personal life they can be picked up straight away and used with no training. Finally, the presentation of the information is typically more visual and graphical in its format, making consumption and understanding easier. Historically, BI reports have tended to be large tables of data to wade through to find the key piece of information. Mobile devices, due to the screen size, are not suited to this sort of tabular information so to be effective data is usually presented in the form of charts, icons and alerts, which focus on the critical information and are easy to read.

Where can Mobile BI help?

Traditionally Mobile BI is thought of as a mechanism to deliver information to users when they are away from the corporate network. This in itself is a great use case for Mobile BI, for example, by giving sales people the ability to access the most current data available on a customer directly before, or even during, a meeting with that customer. By giving them access to information such as outstanding orders, issues raised, overdue payments and sales forecasts at their fingertips they can concentrate their efforts on managing the customer and driving sales rather than preparing and printing information in advance. Another common example is giving executives access to all their management reports and alerts so they can keep on top of business performance regardless of where they are.

The benefits of Mobile BI are however not merely limited to situations where the users are out and about. Mobile BI can help employees in any situation where having immediate access to information can aid making quick and accurate decisions. Managers often spend the majority of their time away from their desks so enabling them to access the information they require on a mobile device as and when they need it will make them more effective. For instance, enabling them to access reporting directly during a meeting can speed up and improve the accuracy of decision making and remove the need to predict what will be needed beforehand and print it out. Similarly Mobile BI can provide alerts to maintenance engineers so that they are made aware of potential problems as soon as they arise and can respond to them before they become critical.

The example of the maintenance engineer is a good one because it also highlights a parallel trend towards process mobilisation. Software companies have made investments to ensure that the graphical user interfaces (GUI's) for the transaction processing systems are mobile enabled, so the maintenance engineers can now survey the plant and raise maintenance notifications on the move as they encounter issues using their mobile device.

Process mobilisation focuses on the speed and flexibility at which operational business processes can be executed, thus reducing cost and increasing effectiveness.

Mobile BI focuses on both supporting these mobile operational business processes, but also, and more importantly, providing information in the right form at the right time, to accelerate and improve strategic and tactical business decision making.

These are just some examples of where Mobile BI can help. There are many more. The key to identifying where Mobile BI could make a difference to you is to identify situations where having immediate access to information could improve the speed and quality of decision making in your business.

What does a good Mobile BI solution look like?

Mobile BI and your existing BI environment

The most important aspect of any Mobile BI solution is that it should be based on your existing BI environment. The mobile aspect should be an extension of what is currently in place and not be a completely separate deployment. In creating your existing BI environment you will have invested time, money and effort in defining the metrics and key performance indicators (KPIs) you need to run your business. This investment should be leveraged; Mobile BI should be considered a new access layer or front-end to your existing BI infrastructure.

If you have issues in your existing BI system then you should address these before commencing a mobile deployment. Failure to do so is likely to harm the adoption of Mobile BI.

It is essential that the reports you access in a mobile environment must use the same definitions and show the same values you would see in your non-Mobile BI reports. If not then the users will not trust the information they have. Using your existing BI platform as a basis for mobile makes this simple to achieve.

The shortcut way to implement a Mobile BI solution is to simply publish existing reports for consumption on mobile devices. As we will see in the subsequent section SAP BusinessObjects content can be made available in this way. This will create a Mobile BI capability but may not give you the best outcome. The issue with doing this is that it assumes that your existing reports are suited to use on a mobile device but this is not always the case. There could be technical, usability, form or content issues which might limit the success of your deployment for one or more of these reasons:

- **Technical compatibility:** The report may contain features or functions which are not supported on the mobile devices. As we will see in the subsequent section for example, not all features available in the desktop versions of the BusinessObjects tools are available in the mobile versions.
- **Usability issues:** Reports which require a lot of user entry can be cumbersome to use on a mobile device as text input via a small or virtual keyboard can be slow and awkward. Where a report requires some user input it is best to use drop down lists, check boxes or other such tools which are better suited to a mobile device.
- **Form:** The size of the mobile screen limits the amount of information that can be displayed at one time. Charts with a lot of data points on them or large tables may be fine on a desktop screen, but may not translate well to a smaller mobile screen.
- **Content:** One of the benefits of a Mobile BI capability is that it can open up BI to more users. If you have had trouble in the past getting the users to access the content you need to consider whether simply making the existing content mobile is the right approach. If the issues were with the content within the reports themselves then making the content available on a mobile device is not going to resolve the issue – it simply gives easier access to the wrong information!

In summary, your existing BI should be the foundation and basis for your Mobile BI deployment. You can and should use your existing reporting as a starting point to create mobile capability but you do need to review the reports and ensure that they are suited to mobile usage.

Design considerations

As outlined above, it is important to make sure that reports and dashboards are suited to the devices that they will be shown on. It is vital to ensure that the information the users will get from the reports is easily distillable. The graphics and visualisations used must be clear and easily understandable. Less is more – don't try to cram too much onto a single screen.

Ideally, the reports should not require any parameters to run. Where possible try and populate parameters using logic (e.g. use the current date for a date parameter) or using defaults based on the master data (e.g. select costs centres which the user is responsible for). Where user input is required you should utilise controls which are suited to the touch screen such as drop down lists, radio buttons or checkboxes.

Timeliness of data

You should also think about the frequency of the data update in your reports. The aim of providing Mobile BI is to improve the timeliness and quality of decision making. Giving users access to the data anytime, anywhere is part of this, but it is also worth considering how up to date the information in the reports needs to be to achieve this goal.

For instance, if you are using mobile to monitor inventory levels in a store you would probably want the data to be real time so that you can anticipate stock-outs before they happen. Whereas if you are providing an executive dashboard showing financial metrics then an overnight refresh of the data will normally be sufficient.

Data latency is one of the key expectations to manage, particularly in situations where the underlying business activities create and update data continuously. If users have anytime access to their data then there is often an accompanying expectation that it will be refreshed in real time.

The future

Mobile BI should be integrated into your overall BI strategy - it should not be treated as a separate initiative. Once you have a mobile capability up and running you will need to make sure that all future BI projects consider mobile deployment as part of the project.

One of the benefits of Mobile BI is that it can help increase adoption of BI within an organisation. This in itself should open up new opportunities to broaden the scope of the BI implementation. New users will have different requirements and existing users will probably start identifying new use cases once they see the power of Mobile BI. After you have implemented mobile capability it is important to regularly review the use of the system and gain feedback from users about how easy the solution is to use, the content provided and how it could be improved.

As mentioned earlier in this document Mobile BI can also be the start of a wider mobile adventure. Mobile BI can result in significant benefits for your organisation, but further benefits could be found through mobilising day to day operational applications. The mobilisation of BI can be done either as part of this business process mobilisation initiative or as trailblazer to establish the concept before you look at what other applications would be suited to a mobile use case. For instance, enabling sales people to place orders through a mobile device whilst they are with a customer or providing service engineers with online maintenance manuals they can access anywhere.

How SAP BusinessObjects enables Mobile BI

So far we have discussed the concepts and benefits of Mobile BI now we will move the discussion to outline how SAP BusinessObjects supports and delivers mobile capability in reality.

SAP provides a single application for accessing BI content in a mobile device. SAP BusinessObjects Mobile version 5.0 is available for iOS® and Android™ devices but with different levels of functionality. The following section on the various reporting tools is based on the App available on the Apple iPad® which offers the fullest range of functionality. The details below are correct at the time of writing and are based on the versions of the software currently in general availability.

Note: previously, there were two apps available for accessing SAP BI content (SAP® BusinessObjects™ Mobile and SAP® BusinessObjects™ Explorer). The content of these two apps has been combined into version 5.0 of SAP BusinessObjects Mobile.

Overview of BusinessObjects tools

- **SAP® BusinessObjects™ Web Intelligence®** is an ad hoc query, reporting and analysis tool which can bring in data from a wide variety of sources. The intuitive interface allows users to quickly and easily create reports which provide detailed analysis and insight into their information.
- **Crystal Reports®** is the tool for creating highly formatted, pixel-perfect reports that are clear and customisable. Crystal reports can source data from almost any data source.
- **SAP® BusinessObjects™ Dashboards** (previously Xcelcius) can be used to create clear and compelling dashboards that show your key performance indicators at a glance. The tool provides numerous predefined objects (graphs, chart, navigation tools etc…) which can be brought into a dashboard and customised to meet your requirements.
- **SAP® BusinessObjects™ Analysis** is an MS Office and/ or Web based OLAP tool. It provides a powerful analysis tool which allows users to filter, drill down and navigate through datasets stored in SAP® Business Information Warehouse (SAP BW) or HANA. For BW customers it is seen as the replacement for the Business Explorer (BEx).
- **SAP® BusinessObjects™ Design Studio** is the reporting tool for creating web applications and dashboards based upon data residing in SAP BW and HANA. For SAP BW customers this tool is seen as the replacement for the Web Application Designer.
- **SAP® BusinessObjects™ Explorer** is the data exploration tool. Explorer provides a 'Google-like' search facility to identify the data set you need to look at and then provides a simple front-end for navigating through it.
- **SAP® BusinessObjects™ Lumira** is a cloud and desktop based tool which is aimed at business analysts. It enables them to take one or more datasets from a variety of sources, combine them together and analyse them. The user can create custom visualisations, including tables. Charts and geo-mapping and share them with other users via the Explorer front-end.

SAP BusinessObjects reporting tools mobile capabilities

SAP BusinessObjects Web Intelligence (WEBI) was the first of the reporting tools to be mobile enabled and reports can be viewed using the SAP BusinessObjects Mobile app. Existing WEBI reports can be made available to the mobile app by simply saving them in a mobile category. The majority of WEBI functionality is supported and SAP estimate that 95% of WEBI reports can be published without the need to make any changes to them. Where an unsupported component is included in the WEBI report then it should be removed or replaced with one that is.

WEBI reports viewed in the mobile app will not appear as they do in the desktop version. The app takes the objects (tables, charts, graphs etc…) configured in the report and determines a suitable layout for them based on the number of objects and their size. The format of the objects is also determined by the app and ignores any customisations made in the WEBI tool.

There are also a number of enhancements which you can make to the WEBI report such as converting a trend data series displayed in multiple columns into a 'sparkline' or changing the exception display to be a 'gradient filled button' as shown in the example below. These enhancements are activated by adding a small piece of code into the description of the objects.

Figure 1 - WEBI example on iPad

These enhancements are only visible in the mobile version of the report and not in the desktop version. In the desktop version of the report the variance column would appear as a coloured number and the trend as 52 weekly columns.

Crystal Reports content is also enabled for mobile. The SAP BusinessObjects Mobile app currently supports the downloading and viewing of Crystal Reports in a PDF document plus refreshing the data in the reports. Crystal reporting objects are mobile enabled in the same way as WEBI by saving to the mobile category.

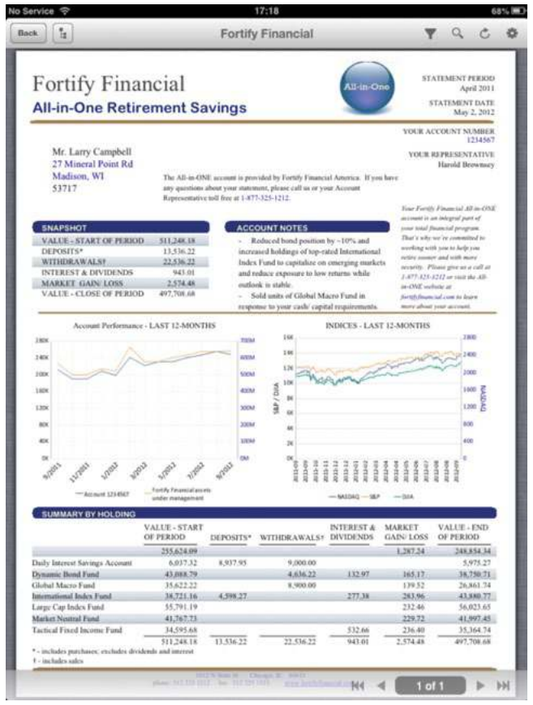


Figure 2 - Crystal Report example on iPad

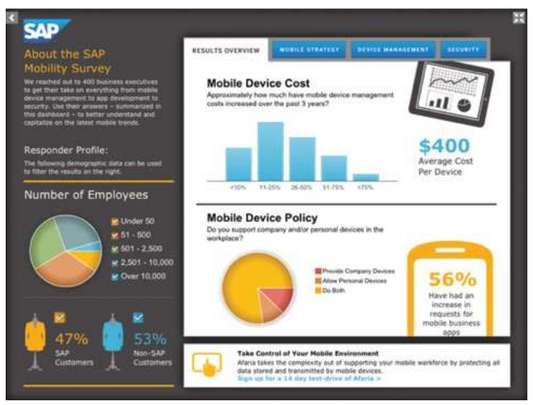


Figure 3 - Dashboard example on iPad

SAP BusinessObjects Dashboards (formerly Xcelsius) was mobile enabled at the end of 2012. Creating a mobile dashboard is simple – when generating the dashboard there is an option to save it to the BI platform as a mobile only, desktop and mobile, or desktop only dashboard. If you chose to save it as a mobile dashboard then an HTML5 version of the dashboard is created which is available through the SAP BusinessObjects Mobile app.

Currently there are a number of limitations on what can be published to a mobile device. There is only a single theme which is enabled for use in mobile dashboards and only the commonly used (as defined by SAP) components are supported. SAP has introduced a mobile compatibility checker into the dashboard designer which reviews your dashboard and provides you with details of the components within it that are and are not supported. The preview tool also has an option to display a dashboard as it will be rendered in the mobile device.

SAP BusinessObjects Design Studio has been designed with the mobile use case in mind and all content created in this tool can be made available to mobile devices. As with dashboards, when saving a design studio object you must select whether or not you want to make it available to mobile devices.

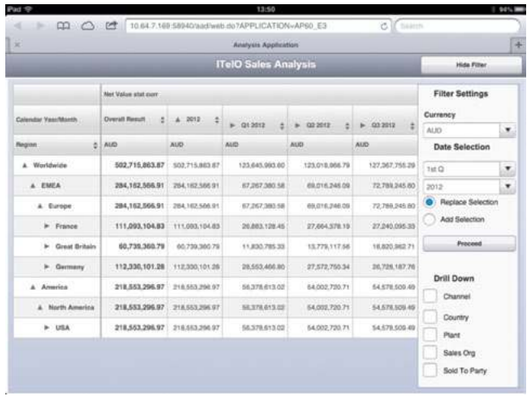


Figure 4 - Design Studio example on iPad

Figure 5 - Explorer example on iPad

SAP BusinessObjects Analysis (editions for OLAP and MS Office) is not enabled for mobile devices. Content exposed as analysis views can be published to a mobile device via the design studio application.

This mobile app can be used to access all the SAP BusinessObjects Explorer content and the look and feel of it is identical to that which you would find on a desktop. Once a data set has been created for use in Explorer it is automatically available in both the mobile and desktop versions. No extra steps are required to mobilise it.

Exploration views created in **SAP BusinessObjects Lumira** (or Visual Intelligence as it was previously known) can be accessed in the mobile app. You can also access any content created in the SAP Lumira Cloud through the mobile app. Within the app you have the same ability to explore and analyse a dataset as you would in the browser based version, however, you cannot create new datasets in the app.

Summary of availability of reporting tools

As mentioned above not all reporting tools are available in all operating systems. The table below summarises what is currently available. At present there is no support for Windows 8 mobile, but this is in development and should be available late 2013. SAP are also working on extending the Android offering to cover the missing tools with design studio due to be included in the next release (late 2013) and Explorer/ Lumira in a future release.

	WEBI	Crystal	Dashboards	Design Studio	Explorer	Lumira
IOS	Y	Y	Y	Y	Y	Y
Android	Y	N	Y	N	N	N
Windows	N	N	N	N	N	N

Conclusion

Businesses need to be able to respond quickly to the opportunities and threats that arise in the market place. Regardless of where they are, your employees need access to accurate and timely information so that they can make the correct decisions with confidence. A Mobile BI capability can provide this.

The technology which supports Mobile BI is mature and the SAP BusinessObjects reporting tools make it easy to take your existing BI reports and publish them to mobile devices. In creating a Mobile BI capability you should look to leverage the BI environment that you have and reuse the same definitions and data model that you use in your current reports. A starting point is to publish your existing reports to mobile devices but you should be aware that some content may need adapting to the mobile platform.

Once you have established a Mobile BI capability you will find that your BI system has a higher adoption rate. The user interface for Mobile BI applications is significantly more user friendly than desktop based tools and your users should find it easier and quicker to access the content they need. As your users get used to accessing BI in new environments they will start to come up with new use-cases and request new reports and data. Once established, mobile will become a key aspect of your BI system and once in place should be part of all future BI deployments.

To summarise, there is a strong business case for Mobile BI, the technology is available, and mature enough to support it so now is an excellent time to be implementing Mobile BI.

About Absoft

Absoft is an SAP Gold Partner in the UK and a leading independent provider of ERP, Business Intelligence and Enterprise Performance Management solutions.

We engage with clients in a range of performance management areas, including: forecasting, planning, reporting, analytics, data warehousing, dashboards and scorecards.

Typically 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. We also have many clients that know they need to invest in performance management solutions, but want help understanding where to start, building a roadmap and business case for investment, and selecting the most appropriate technologies for 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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