Mobile BI: Features, Challenges, and Opportunities

By Jorge García, Research Analyst, Technology Evaluation Centers
Abstract

What does an organization need to consider when adopting a mobile business intelligence (BI) or business analytics strategy? What are the enablers, challenges, and opportunities of a mobile BI strategy implementation? In this report, we explore general considerations for deploying a mobile BI solution, what you should do to leverage this type of platform to best advantage, and most importantly, why a mobile BI/analytics solution can be a valuable asset for your company.
Mobile Technologies on the Rise

While mobile technologies are no longer new, it’s not until recently that mobile hype has hit the business intelligence (BI) space with enough power to become a game changer—and perhaps even the basis for a new paradigm for BI, business performance management, and business analysis.

While earlier mobile-based applications were consumer-focused and used for basic tasks such as personal reminders or grocery lists, a new generation of applications expanded this horizon by providing an improved user experience, paving the way for the use of mobile devices to track and manage everything from personal mails to purchase orders and support requests.

It took more time for mobile technologies to make the jump from operational and tactical business functions to decision making and strategic areas, where the core of BI resides. Only in the last three or four years have mobile BI applications gained traction in the business space, with reliable BI functions and features (e.g., data visualization and analytics) providing the means to display charts and graphs as well as adapted dashboards.

Organizations have started to see the benefits of providing decision-making teams—no matter where they are located—with the ability to make proactive decisions based on insight derived from their source BI systems. With the emergence of tablets and mobile devices with more visual real estate, the strength of mobile BI technology is translating into increased business adoption, due particularly to their capacity to provide strong and clear data visualization in the form of charts and graphs as well as dashboards and scorecards.

Mobile is no longer optional. It is a new way of doing—and thinking about—business. Corporate mobility is reaching a point where people from all levels of the organization use mobile devices for personal and corporate use. They are collaborating, they are sharing information, and most importantly, they are gaining access to customized data analysis from their mobile device, no matter what its type, shape, or size.

Mobile Web access (via laptops and smart mobile devices) will exceed desktop Web access within five years.

*Source: International Telecommunication Union (February 2010)*
Mobile BI and Its Role in the BI Information Cycle

Some of the enablers for business adoption of mobile BI technology derive from changes to the nature of decision making itself over time:

- Corporate executives have increased their mobility due to dramatic changes in the way processes and data are shared within organizations, including the decentralization of corporate offices and leadership among different local and global locations.
- Joint efforts between multicultural and multidisciplinary groups for improved decision making are more pervasive.
- Today's business models are more apt to rely on mobile services—both from a technical perspective (by promoting and requiring more mobility from information workers, along with anytime-anywhere availability) and from a human resources perspective (by providing a mobile corporate culture through mobile e-mail access, and access to other types of mobile applications).

With high-mobility information workers and decision makers becoming the norm, many companies are implementing specific mobile BI initiatives, in order to provide their employees with the ability to retrieve vital information at almost any location. This dramatically changes not only the way information workers collect and visualize information, but also how they analyze data for decision-making purposes.

So, what are the practical—and realistic—benefits of mobile BI?

- **Accessibility**
  Mobile BI solutions have the potential to provide information workers with the ability to analyze data, search for content, receive alerts, or simply consult metrics and key performance indicators (KPIs) on their mobile devices. Location is no longer a constraint on information or even action, particularly in the case of real-time information delivery. The practical benefits:
  - real-time visibility,
  - 24/7 availability of critical data, and
  - effective alerts and messaging.

- **Usability**
  BI solutions are increasingly device-independent and user-customizable. This means that some data consumers will gain by using a simpler and more straightforward mobile device, while others with a need for more data-intensive BI applications will be able to use mobile BI services as a companion to regular desktop BI applications. The practical benefits:
  - personalized configuration to consume information as needed by users;
  - intelligent delivery of information based on profile and preferences (location, position, etc.); and
  - the ability to configure alerts and messaging features according to user/group needs.
• **Collaboration**

Location independency and application integration can provide mobile BI users with the ability to collaborate with their peers by combining mobile BI functionality with simple services like text messaging, as well as with more complex collaboration tools such as internal or public collaboration applications for sharing rich content (e.g., voice, images, and text). The practical benefits:

- the ability to enable comments and share text messages along with and about data, and
- the ability to leverage pre-existing security to ensure reliable and secure information communication.

Certainly, mobile BI solutions have the power to not only improve and speed the decision-making cycle, but also to enable decision democracy and better-informed decisions, especially under conditions of extreme business pressures and time sensitivity. Organizations need to assure return on investment (ROI) by making best use of it as well as by integrating it with the pre-existing infrastructure, thereby creating more value with less effort.

App downloads (2010): 9 billion
App downloads (2011): 29 billion (projected)

*Source: ABI Research (October 2011)*
Many factors can go into the selection of a mobile BI architecture, but there is a small set of criteria that should be considered as a basic requirement set for any type of organization:

- **Mobile Platform**
  One of the core decisions is the type of mobile platform. There are two main flavors: client-based applications, and Web-based clients. This decision will affect all criteria below.

- **User experience**
  The architecture should enable users to take advantage of mobile features for data insight, and ease of use. Some important features to look for include individual and group personalization, and graph and data visualization.

- **Security**
  Information should be both accessible to users and secure from leaks, loss, or external threats.

- **Integration with existing BI and corporate solutions**
  The mobile BI platform should integrate with existing BI platforms and other enterprise software applications.

- **Administration**
  Tools should be available to enable effective and extensive administration of the mobile BI platform’s features and functions.

While these requirements describe in general what we should expect from a mobile BI solution deployment, there are other, more specific elements to consider when deploying a mobile BI platform. Elements like interaction and drill-through data capabilities can play a major role for improving the decision-making process while on the move. Data discovery and search are also important elements to take into account, and the systems’ ability to search for information and locate data with ease may also be an important criterion for selecting a platform.

Organizations also need to solve some challenges in order to achieve successful platform adoption, including:

- integrating all mobile solution components (devices, platform, users, and the data management process);
- cohering all these components within a corporate mobile strategy; and
- ensuring user adoption by providing fast and effective deployments as well as a platform that can scale, adjust to new needs, and provide the ability to manage all mobile applications in one place (i.e., with a BI solution that integrates tightly with a mobile platform).

In 2010, only 4% of smartphones and tablets shipped had some form of mobile security downloaded and installed.

*Source: Canalys (October 2011)*
A Call to Action

How do you begin the process of selecting a mobile BI platform? There are a few principles to follow:

- **Mobile BI solutions must create value**
  Deploy solutions that can be integrated with existing underlying applications, and that provide extensive support features and reliable development environments.

- **You must be able to deploy mobile BI solutions without changing the underlying applications**
  Look for a platform that can be effective and operative with less effort (meaning deployment, configuration, and administration), and without programming or the burden of adjusting it to fit your mobile strategy.

- **Mobile BI solutions must operate and integrate with existing mobile applications**
  Select a mobile solution that has the potential to integrate with your other current or planned mobile applications.

- **Mobile BI solutions must be device-independent**
  Look for a mobile BI platform that will give you independence from device type and mobile operating system.

- **Mobile BI solutions must be role-based and user-oriented**
  Select an application that gives users the ability to configure their environment according to their needs.

- **Mobile BI solutions must enhance and/or integrate with data security corporate strategies**
  It’s extremely important to ensure that all data security aspects are covered at all levels: device, transmission, and network.

The following table comprises some general functionality to consider when planning mobile BI deployment:

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<tr>
<th>Feature</th>
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<td>Automatic recognition of handheld device type, and optimal content display for each type</td>
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<tr>
<td>Customization/personalization of the user interface</td>
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<td>Strong system administration configuration capabilities</td>
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<td>Content search features</td>
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<tr>
<td>Data drill-down and slice-and-dice capabilities</td>
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<td>Creation, modification, and display of metrics and KPIs</td>
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<td>Alert mechanisms</td>
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<tr>
<td>Real-time data management capabilities</td>
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<td>Rich set of graphs and charts</td>
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<td>Geo-localization features (device location, location-based data visualization, etc.)</td>
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<td>Data source transparency</td>
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<tr>
<td>Strong security configuration (via virtual private networks, data encryption, etc.)</td>
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<td>Rich collaboration features (e.g., text messages, the ability to embed notes in charts, etc.)</td>
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Conclusion

Organizations are beginning to expect more from their mobile BI platforms. Indeed, mobile BI platforms are rapidly evolving from a “nice to have” to “must have” component of a larger BI strategy. The ability to view metrics and analytics alone has been replaced by the possibility of drilling through data at many detailed levels. The incorporation of newer technologies like enterprise search, as well as more collaborative environments that enable real-time interaction between user groups and global teams is closing the gap between operations and analysis, enabling more interaction between all levels of leadership—strategic, tactical, and operational—as well as a tighter relationship between BI applications and business processes, potentially boosting the performance management process as a whole.
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