Yellowfin

Making Business Intelligence Easy

White Paper
Mobile Business Intelligence
and Analytics

Contents

Overview

With the advent of the mobile phone a fundamental shift occurred in telecommunications. You no longer called a place, you called a person. The arrival of the internet provided an even greater degree of interconnectivity. It is these changes that are having a profound impact on the way in which businesses manage their mobile workforce and access to their data assets.

The convergence of BI and mobility, resulting in the capability to deliver data anytime anywhere, has been well underway for some time. Professionals are fast becoming comfortable with the use of smart phones as a means of keeping up-to-date with business information.

As a result, data mobility is fast becoming the norm, rather than a specialized set of applications. The era of the dispersed workforce is upon us, and IT and data access planning needs to be undertaken with mobility front-of-mind.

This paper looks at the audience for Mobile BI applications (senior management and executives, key sales people and field service personnel), the key influencers driving the need for Mobile BI, and the organizational benefits derived from embracing mobile analytics.

We then analyze the requirements, both technical and organizational, which are needed to ensure a successful Mobile BI platform rollout.

Incorporating a Mobile BI platform into an organization's analytics and reporting infrastructure will have a direct impact on improving its bottom line, by increasing competitive advantage, employee productivity and the level of customer service/satisfaction.

What is Mobile Business Intelligence?

The definition of mobility needs to be much broader than simply referring to the use of a mobile device.   Mobile BI is the capability of the organization to deliver relevant and timely data to anyone, whenever they need it, wherever they are, regardless of the device used to access that data.

On the one hand, there is the mobile worker who is physically mobile, and requires remote access to information assets. This is the traditional definition of Mobile BI. However, there is a fast emerging group who are device mobile. These users regularly switch between laptop, desktop and smart phone, but are not necessarily out in the field.

This modern definition of Mobile BI includes the concept of **device independence**. This is a critical distinction, as it has a fundamental impact on how organizations should think about their Mobile BI strategy.

Both sets of users demand flexible data access and the ability to access and analyze data in a uniform manner, regardless of the device used, be it PC, laptop or smart phone. In simple terms, no matter how the end-user accesses their corporate data, what they see should be the same.

Figure 1 Mobile BI Delivery

Mobile data delivery falls into three distinct categories:

Push / scheduled Reporting	Role specific predefined reports, such as key performance indicators (KPIs), can be sent to executives on a regular basis regardless of their location or device. For example, each Monday morning, a report on last week's sales could be distributed to sales and marketing executives, while the CFO might receive a report on critical financial metrics.
Pull Reporting	Authorized users can access information from the centralized server-based BI system on demand. Access to information can be customized to ensure that only those personnel permitted to view certain reports and data sets can request them. A salesperson, for example, could ask the application to identify the current top five customers, or to provide detailed background about a specific customer.
Exception & Alerts	Users receive proactive alerts about abnormal and unscheduled events and incidents that fall outside normal business routine. For example, a purchasing agent could be alerted when the inventory of a critical part falls to a level that threatens to interrupt manufacturing. Similarly, sales executives would be alerted about a delayed shipment, enabling them proactively notify the customer about the delay.

Who is it for?

There are three main groups within an organization who will benefit from the implementation of a Mobile BI solution. These are: Executives, key sales people, and field service personnel.

The executive team and senior management: Time-poor executives will appreciate the ability to access KPIs and other important data at a glance whilst on-the-move between appointments and meetings. Senior management has become proficient at absorbing information delivered to them via their smart phones. Adding analytics and reporting is not a huge leap for this end-user group.

As executives begin to use mobile phones and laptops almost interchangeably, and as those phones become capable of displaying rich Web content, business leaders are seeking more extensive access to corporate data. Additionally, business timeframes are being compressed, and if a company is to maintain competitive advantage, its decision-makers need access to the information they need - wherever they are, and whenever they need it, to enable them to make important decisions on-the-go.

Key sales people: The sales team is often out of the office, and in constant contact with customers, so will benefit enormously from access to mobile analytics. Having access to real-time sales data, such as current sales figures and sales history, provides the sales team with the timely information they need to increase sales via up-selling and cross-selling, and act upon opportunities as they unfold.

Field service personnel: Field personnel need to have an accurate understanding of their organization's customer-base to do their job effectively. Pro-active alerts and access to both real-time and historical data, detailing current customer needs and past behaviors, will lead to increased efficiency and productivity 'in the field', and ultimately enhanced customer satisfaction. Other benefits include increased risk visibility (risk management) and workforce cohesiveness.

End User Matrix

Role	Requirements
Executive / Senior Management	Real-Time Organizational KPI's Anytime. Anywhere Access to Data Decision-Making On-the-Go
Sales Personnel	Customer Analytics Proactive Sales Alerts Real-Time Customer Data Sales Performance Reporting
Field Service Personnel	Proactive Service Alerts Real Time Customer Data

What are the external factors driving Mobile Business Intelligence?

There are three major external factors that are driving Mobile BI adoption. These are: Device maturity, end user expectations and constant connectivity.

Mobile BI has reached a new level of maturity: Mobile devices such as the Apple iPhone and iPad and the Android platform allow users to have a rich reporting and BI experience directly from their pocket by supporting the presentation of complex data and analytics on-the-go. As devices mature, and the functionality and usability of those devices approaches that of a traditional desktop, we will continue to see convergence of applications across devices. As devices have matured, BI vendors such as Yellowfin, have delivered applications that take advantage of those devices. Mobile BI needs to be supported through rich clients on similarly high function devices.

Users expect to interact with the internet: The device-savvy digital generation continues to enter the workforce, using devices to stay connected in ways previously un-thought-of. This means they are becoming device independent. The personal use of the internet and mobile devices continues to grow and is shaping the expectations of business-oriented use. Technologically savvy business people have the skills to use and access increasingly complex information on increasingly complex mobile devices – they expect data delivery mechanisms to support that trend and keep them well informed about the business information that matters to them. For example, social media applications such as Twitter have a web client, but also many mobile clients, each with slightly different UI. What they have in common is that all the applications deliver the same content. In the internet-centric world, content is king, and users want to stay connected to that content. Constant and uniform connectivity is a must if business users want to take action through any device, automate many of their activities on a daily basis, and participate in business processes from any location. This allows end-users to react to change with immediacy, no matter their whereabouts. Those in the field can also respond more effectively to customer needs and issues.

Constant connectivity to the internet: The ability to stay connected to the internet and business developments means that businesses have no choice but to embrace this trend, or be left behind. In the past, business people worked offline when they were on-the-road. Access to the internet and real-time company information assets was not possible – that has changed forever. The fundamental issue of working offline is that data has to be stored on a device. How do you secure the data? What happens if the device is lost? How do you lock it down? In today's business environment, it is unacceptable and cumbersome to work offline. The inability to access real-time data is a major inhibitor for mobile businessmen and woman. How can you perform your job accurately, effectively and efficiently if you are poorly informed by outdated information?

The cost of establishing data reporting and analytics solutions that provide widespread workforce access to real-time data and key business drivers is becoming increasingly affordable. Additionally, delivering a Mobile BI platform via the internet removes security issues surrounding remote data access and storage, and delivers real-time data capabilities to end-users.
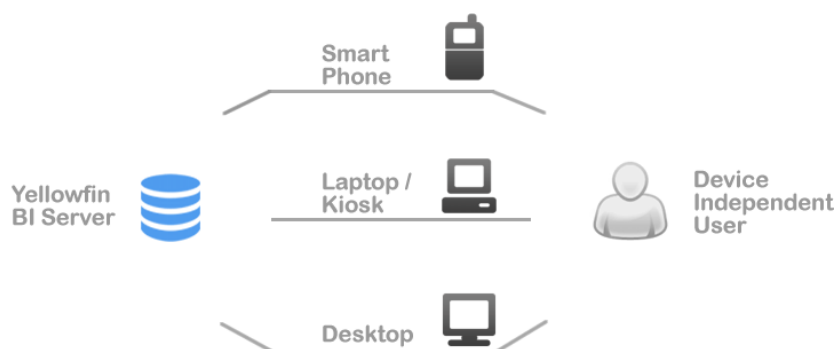
Figure 2 Device Independent Users

What are the internal drivers for Mobile Business Intelligence?

The three fundamental internal drivers for Mobile BI are: Increasing employee productivity, improving data delivery efficiency, and the need to deliver real-time reporting and analytics.

Increasing employee productivity: Increasing employee productivity is a key motivation for delivering BI to mobile devices. The inability to access real-time information inhibits the mobile worker from achieving maximum productivity. End-user groups must have access to real-time data, no matter their location or mobile device, to enable them to improve individual as well as organizational performance. Delivery of the right data at the right time, can significantly improve productivity; by reducing the time wasted in searching for data employees need to do their jobs effectively.

Improved data delivery efficiency and closed loop reporting: Improving information flow through an organization is a common overriding motivating factor for implementing Mobile BI projects. For mobile workers who are often away from their desks, a Mobile BI application provides them with direct access to organizational data assets. In addition to delivery efficiency, the ability to act on that data and "close the loop" means that overall organizational efficiencies and productivity can be streamlined. Organizations are then better placed to act on opportunities and make fast, better-informed business decisions.

Real-time reporting and analytics: Mobile BI is about delivering real-time, or near real-time, access to data. Field sales and service teams need access to real-time data so they can effectively and efficiently achieve their goals and objectives. We live in the world of the instantaneous and the now – inability to swiftly respond to marketplace opportunities will result in lost business and reduced competitiveness. For example, if a customer cancels an order, the field delivery team does not want to waste time and effort in delivering an unwanted good to the customer. It is critical that the data delivery mechanism (the BI solution) and the underlying data sources being accessed are capable of real-time data delivery.

What benefits are sought?

The potential benefits of rolling out organization-wide Mobile BI are enormous.

Access to real-time information for the mobile worker has many notable benefits including:

- Improved knowledge-sharing to support organizational collaboration and cohesion
- Increased workforce productivity and organization-wide efficiency by speeding-up the decision-making process
- The ability to make better informed decisions
- Closed-loop reporting
- Increased flexibility and adaptability to stay ahead of the competition and act on marketplace opportunities
- **Improved understanding of customer needs and the customer decision making process**
- Increased customer satisfaction and enhanced reputation through timely and accurate decision-making

Many of these benefits can also be equally applied to implementing a standard BI solution. The three most commonly sought benefits of implementing a mobile strategy are: Increased competitive advantage, increased productivity leading to greater profitability, and a clearly definable Return On Investment (ROI).

Competitive advantage: Organizations are looking to be more responsive and flexible by having access to data that keeps the mobile worker ahead of the competition. Access to real-time data increases the opportunities to up-sell and cross-sell as well as respond dynamically to changing market conditions.

Increased productivity of the workforce: With real-time access to data the potential to improve operational efficiencies are dramatically increased. The ability to speed-up the decision-making process, by extending critical information out to decision-makers in the field, is a major benefit of Mobile BI.

Raising the level of profitability through customer satisfaction: Delivering Mobile BI to the field will improve customer service and increase customer satisfaction by empowering workers to make faster and more accurate decisions. Access to timely information, particularly for field and sales staff, will help deliver better and quicker results to customers, improving their experience and saving them time, which will lead to lasting improvements in customer satisfaction levels. Through exception reporting, mobile workers can be quickly alerted to important or harmful events before they affect customer relationships, and can proactively capitalize on emerging opportunities without delay.

ROI: The rate of end-user adoption is the best method for measuring the success of any BI solution because the more people with access to the benefits of quality BI, the better equipped any organization will be to respond to and take advantage of, opportunities and shifts in their business environment.

What organizational factors are required?

Implementing a successful Mobile BI solution is as much an approach, and mentality towards business reporting and analytics, as it is a methodology driven by new technology.

To achieve the benefits sought from a Mobile BI project, a key set of organizational attributes needs to be in place.

It is vital that a company has already established a competency for BI, or has a general analytics strategy in place. Mobile BI is a sub-set of a broader BI program. It should not be embarked upon in isolation. To deliver a successful Mobile BI project employers should:

- Adopt an open 'anywhere, anytime' attitude towards business data to empower employees to make decisions and take full-advantage of the benefits associated with pervasive BI. As companies continue to focus on delivering information to the mobile workforce, they will need to ensure information is delivered promptly to affect action in the field.
- Equip as many people as possible from across the organization with the skills, knowledge and permission to access BI data – widespread user-adoption is the key factor to successful BI projects.
- Understanding the reporting needs of each of the three main beneficiaries of Mobile BI – the executive, sales and service teams – is critical. Their needs will differ, and appropriate KPI reports should be developed that are specific and meaningful to each user-group to ensure quick end-user uptake and assure high ROI.
- Have clearly defined business goals and objectives that are openly articulated throughout their organization so that Mobile BI can be delivered in a way that most effectively supports those demands.

Employees on-the-move need to know that they can access the data they need when and where they need it.

What technology has to underpin a Mobile Business Intelligence initiative?

The success or failure of a Mobile BI project does rest to some degree on the technology chosen to be the delivery platform. The fundamental requirement is that this platform is internet-centric. Beyond that, there are some other essential technological components that are required to deliver the business benefits sought from Mobile BI.

The most critical selection criterion is that a single authoring environment exists. With a single-authoring environment, information can be delivered to mobile users without having to create a separate set of BI views, reports and dashboards, which would double maintenance and support needs.

This concept needs to be extended to ensure that users have access to all authorized content that they would otherwise be able to access via their desktop. There should be no difference in the content able to be accessed from different devices. Users must have the same access to reporting and analytics on-the-go as they do from their office. There should be no need to re-create content for the mobile platform, or repackage it for mobile distribution. A 100 percent Web-based BI solution will allow data to be delivered seamlessly to mobile platforms. This way, users can gain the benefits of Mobile BI immediately and experience the power of true device independence.

The mobile software client should optimize the delivery of content based on the size of the screen. Emphasis should be placed on "bite size" reports such as KPI sparklines and bullet charts. Mobile reporting should be designed to highlight those strategic KPIs that are of the greatest concern, as well as drive action, through exception reporting. This is not a contradiction to the point above, but an acknowledgement that what works well in a full size browser, is often not ideal on a mobile device. For example, delivering an analytical dashboard with eight to ten reports on it would be a terrible user experience on a phone.

Figure 3 Content tailored to fit the device

Security is paramount

Deploying Mobile BI poses unique challenges. Security considerations are very important. Companies must consider what type of information is going outside their firewall and how they will protect it.

The most effective security strategy is to ensure Mobile BI users connect, authenticate and access organizational data from their BI server via the Web in real-time. No data should be stored on the mobile device. Too often, news stories and headlines tell a horror tale of executives whose laptops or mobile devices are lost or stolen. The stories inevitably reveal the extent of the damage to customers and stakeholders as the details about sensitive data on the device becomes known. A 100 percent Web-based BI service means that no data is stored on the mobile device.

Secondly, it is critical that authentication (such as password management) is managed centrally, preferably through a Lightweight Directory Access Protocol (LDAP) directory, so that a lost device does not result in unauthorized access to the BI server. A single simple change to the centralized authentication system ensures access to reports from a lost or stolen device is disabled.

In-business confidentiality must also be guaranteed. Delivery of data to mobile devices must be able to be personalized to suit the needs, skills, roles and responsibilities of individuals from different departments.

Finally, highly sensitive report data transferred from the server to mobile devices should be able to be encrypted.

Yellowfin's Mobile Business Intelligence platform

Yellowfin's Mobile BI applications for the iPhone, iPad and Android provide business professionals with the flexibility and security they require to access business critical information, wherever they are, and whenever the need it.

Yellowfin Mobile BI applications offer a cost-effective means to keep people of all business backgrounds and technical capabilities within an organization in touch and up-to-date. This ensures that actions and decisions are effectively aligned with organizational strategy.

Yellowfin offers a flexible, fast, secure, easy-to-use and install Mobile BI solution that empowers end-users.

KPIs: Yellowfin for the mobile device is designed to sharpen the focus on those strategic KPIs that are critical to the success of a business and its leadership team, as well as drive action through proactive alerts and exception reporting, with all of the industry-leading ease-of-use and analytic capabilities now expected by Yellowfin's customers.

Native iPhone, iPad and Android functionality: Yellowfin for the iPhone, iPad and Android supports and takes advantage of their native multi-touch interfaces and functionality features. Additionally, Yellowfin for the tablet has been engineered to take full-advantage of the tablets large screen.

Users can:

- View all their reports and data at native high-resolution picture quality
- Select, drill down and through data points by swiping or touching the screen
- View reports and data in portrait or widescreen modes - Yellowfin's interface senses device orientation and shifts to match

With Yellowfin you can email and comment on reports, filter results, drill down and through data with the flexibility to make business decisions wherever, and whenever you need to. No extra training is required – just connect and go.

Yellowfin's Mobile BI solution is:

Fast: It uses existing report content so there is no need re-create content for the mobile platform or repackage it for mobile distribution. When on the move, a user simply logs into their existing Yellowfin account via a 3G or Wifi network. This allows customers to gain the benefits of Mobile BI immediately.

Easy to use: Users do not need extra training as Yellowfin brings its intuitive navigation to mobile applications. Yellowfin allows easy access to a user's favorite reports, inbox and KPI folder all from the main menu. Newly created reports can be sent to the users inbox while they travel, allowing them to access the latest data required to make business decisions wherever and whenever they need it.

Secure: Yellowfin's mutli-tiered security model gives you the confidence necessary to implement widespread mobile BI reporting and analytics. Yellowfin's mobie apps reuse Yellowfin's security infrastructure, so data security is assured. Yellowfin's 100 per cent Web-based service means that no data is stored on the mobile device. Combined with our mobile BI password protection system, security from unauthorized access to business data is assured, even if the device is lost or stolen. Personalization of data delivery also guarantees in-house confidentiality. Groups of users can be given access to different reports and various sub sets of data within those reports.

Summary

This paper has outlined and defined Mobile BI and pinpointed senior management, key sales people and field service personnel as the three main user-groups to benefit from the implementation of an organization-wide Mobile BI program.

External business pressures driving Mobile BI take-up include the maturity of handheld electronic devices, the expectation and ability of technologically savvy end-users to receive increasingly complex data on their mobile devices, and the ability to remain constantly connected to the internet. The three predominant internal motivations pushing Mobile BI rollout are identified as increasing employee productivity, improved data delivery efficiency, and access to real-time reporting and analytics.

There are several fundamental organizational factors required for the successful implementation of a Mobile BI project. Management must adopt an open 'anywhere, anytime' attitude towards business data; equip as many people as possible from across the organization with the skills, knowledge and permission to access BI data; understanding their reporting needs; have clearly defined business goals and objectives. From a technological perspective, a successful Mobile BI initiative must be underpinned by an internet-centric BI platform, a single authoring environment, uniform data access no matter the device or location, the ability of data delivery to be tailored to take advantage of native mobile device features, and robust security features to encourage widespread Mobile BI development.

The benefits of implementing a Mobile BI project are enormous. Successful Mobile BI execution will lead to sustained competitive advantage, increased productivity, enhanced profitability through improved customer satisfaction ratings, as well as a definable and exceptional ROI.

Find out more

Contact Yellowfin at **www.yellowfin.bi**
and ask for our proven roadmap to assist you
to successfully implement Yellowfin Mobile BI
into your organization.