



The Five Key Mobile BI Mistakes.

A free guide to avoiding the most common mobile business intelligence mistakes so you can put your critical data in front of decision makers where and when they need it most.

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Using this guide: Please note that there are multiple links throughout this document that point to a live mobile BI application with sample data. You can view these links with any PC or Mac browser or on the browser of your mobile device.

Oh, and if you happen to be using an older Blackberry (more than 3 years old), please make sure the following features are enabled in the configuration options of the Blackberry browser to insure proper formatting of information:

- Support JavaScript
- Terminate slow running scripts
- Support HTML tables
- Use Background Images
- Show Images on WML & HTML Pages

What is Mobile BI?

First, let's start with a definition. In simple terms, Mobile business Intelligence is the process of providing a company's critical decision support data to users on a device that is mobile in some form or fashion, enabling them to make better decisions faster. To break that down further, let's explore the types of users, categories of data, where it all comes from and what is meant by the overly used term "devices."

Users:

Users can mean just about anyone, but it is important to know who you want to put data in front of and why. Many companies make the mistake of putting mobile BI apps in the same category as management reporting applications. While you can certainly put management reporting data on a device, doing only that would be a big missed opportunity and here's why: Most managers, especially at the most senior levels, look at static reports that are less operational or real-time in nature, and therefore these reports are less critical in a mobile environment. The most important factor when deciding who needs mobile data is "who's mobile?" and "what decisions need action fast enough to require mobile access?"

Most often the answer lies in the words "operations" and "remote." From the C-level executives like the COO to field staff at every level, employees whose role is operational in nature are often the best candidates for mobile BI. Also, anyone who spends a great deal of their time separated from where their decisions need to be implemented (and we aren't just talking about the person who's on the golf course, although that works too).



Take a look at the following examples and key characteristics to see who you might consider ideal candidates for mobile access to key metrics:

Operational? Remote?
CEO, responsible for future earnings, growth and strategy (quarterly)
COO, responsible for keeping the trains running on time (daily)
Plant, facility or data center managers. People who solve urgent problems as they arise, especially in mission-critical environments.
Traditional BI experts. Responsible for large future planning scenarios and data processing like OLAP, data mining and data warehousing. Are they at their desk most of the time?
Marketing professionals? This depends on how real-time their marketing is (e.g. Amazon.com marketers are very real time, while the average brand manager relies on monthly reports).
Sales? Again, it depends on how real-time the business is. If measuring sales multiple times a day matters, then yes. If a weekly report will do, then there is less of a case.
Maintenance staff or subject matter experts that cover multiple facilities or distributed assets that don't have dedicated expertise at every location. Do you ever have as many subject matter experts as you have facilities?
Anyone whose job or assets change fast enough or are critical enough to be alerted when things go wrong . Does the CEO need to know when a server goes down in the middle of the night ? Maybe, but you probably know the person who does.

Think through the roles at your own company to see who would benefit most from mobile access to data and remember, if a person's job isn't regularly done remotely or they don't have a need to check their data more than once a day; they might not be the right candidate. Many decision makers are surprised once they go through this process.

Types of Data:

Just as important to your mobile BI success is what types of data you put in the hands of your users. This is an area where many companies and technology vendors go wrong, and the subject of one of our top five mistakes we talk about later in the guide.



Here's the root of the problem:

most people consider mobile BI just a mobile version of traditional BI. The best way to understand this problem is to look at what you already do on your mobile phone and compare that to what you do on your PC. Can they do many of the same things? Yes. Is that how you use them? Probably not. Here are some examples:

- You use your PC when you need to type a long document like this one, or do some heavy number crunching or detailed research. It's just plain better, and not just because it has a keyboard and a bigger monitor. It's also better because you are usually sitting down, in a somewhat controlled environment and you have the time to focus.
- You use your mobile when you are doing things that are meant for the here and now, such as telling someone you are late, sending a text message about something you just saw, or looking up directions to a restaurant when you are on the way. Most of these things are either time or location sensitive, making them uniquely mobile.
- Speaking of location, another key way people use their mobile device is because it is just that – mobile. Other than email and a few other activities, the types of information you interact with when you aren't at your desk is often different and for good reason. If you drive a truck and maintain power lines and fix outages all day, you are truly remote and you have much less of a need for heavy data processing – you need answers so you can make decisions regardless of your location.

So what are the key types of data that are truly meant for the mobile device? The answer is very broad and is unique to every business. That said, there are some key characteristics that can help us narrow down what we should be looking at:

- Operations data – things that stop the “trains” from running on time.
- Time-sensitive information – If you need to know quickly when there is an issue or an opportunity.

- Mission-critical data – many of our customers use our software in mission-critical environments where decision support with key metrics can help avoid major disasters.
- Remote data – are your subject matter experts fewer than your locations, and are your facilities and assets distributed. Extreme examples of this include wind farms (where the farms are remote, and the turbines are even remote within the farm) and oil & gas refining (pipelines, oil rigs, etc.).

Just like defining the right role, choosing the right data to put in front of people is critical to the success of any mobile business intelligence deployment. Taking your existing business intelligence data (which is often more focused on planning and reporting) and trying to shove it onto a mobile device can be not only painful, but also highly ineffective.

Data Sources:

Ok, so you know who should be getting data and even what type of data, but where should all of this data come from? Traditional BI vendors have an easy answer for this: “It should come from our big shiny data warehouse application that knows the answers to all of your questions!” While this might sound good on the brochure, anyone who has been through a big BI implementation is already familiar with some of the limitations and the effort required (time, money and people) to make this dream scenario possible:

- **A Different Focus.** If you didn’t build it with operational mobile BI in mind to begin with, you have a lot of work to do. Most data warehouses are focused on great future planning data and analysis, not on a great set of operational KPIs that you need in the palm of your hand. Traditional BI approach: bring back the expensive consultants again to start developing more features.
- **It isn’t finished yet.** This one is a classic, to the point that most people can’t name a company or even a department that have a completed and fully functional data warehouse and business intelligence solution in place and running. Why? Because you have to know what question you want answered from the data before you design it, and if that question changes you get to call in the consultants again and start reconfiguring. Given that these questions always change, you’re never really finished.
- **Things change. Often.** Even if you did one day achieve the mythical BI nirvana, the next day your company would merge with a new one, or teams would reorganize, or some other department would install a new system and require you to integrate your data with theirs, or a new government regulation would be handed down, or, or, or... Sound familiar?

These characteristics aren't found just in the world of business intelligence. In fact, they are found everywhere you find data. Every company has pockets of very important data hidden all over the place, even if they have a great data strategy. Databases, spreadsheets, data warehouses, data historians, legacy applications, and an endless supply of others. More importantly, this isn't set to change any time soon and as systems have become more complicated... uh... I mean sophisticated, the problem has only increased.

Example Data Sources:

Databases	Streaming Data	LOB Applications	Other
<ul style="list-style-type: none">• Microsoft SQL Server• Oracle• IBM• mySQL• ODBC• OLE DB	<ul style="list-style-type: none">• OSIsoft PI• Invensys Wonderware Historian• GE Proficy• Rockwell FactoryTalk• Complex Event Processing (CEP)	<ul style="list-style-type: none">• ERP (SAP, Oracle, Microsoft)• CRM (Microsoft, SAP, Oracle, Salesforce.com)• Manufacturing and Supply Chain Systems	<ul style="list-style-type: none">• Microsoft Excel Spreadsheets• Web Services (internal and external)• Machine Data

Lastly, these data sources are not always your own. If you manage a wind energy facility for example, you get data from your equipment, but you also get it from external sources like weather services. If you run data centers, you might monitor performance data and HVAC from your own systems, but what about bandwidth from your content delivery networks (CDNs)?

To summarize, you need to get data from wherever it lives and you need to make use of it without relying on the multi-million dollar BI system that has yet to be completed. If you do have one finished, that's even better because it's another great data source. My point is this: whatever solution you choose for mobile BI, make sure it can get its data from any source, both internal and external. If it can't, keep looking.

Mobile Devices:

Last stop on our tour of mobile business intelligence: the devices. This one has a fairly loose definition in that any device you can take with you is essentially mobile, but for our purposes we really mean any device smaller and more mobile than a laptop PC that has the ability to connect wirelessly to the Internet. Here are some examples:

- **Smart phones** – includes RIM Blackberry, Apple iPhone, Microsoft Windows Phone, Google Android, Palm, Nokia, Etc.
- **Tablet devices** – iPad, Playbook, Windows, Google Android tablets
- **Other** – Notebooks/laptops (PC or Mac), iPod Touch, PDAs, ruggedized specialty devices, Windows CE-based devices, etc.



There are hundreds of models and variations of these devices available today, and each run on a different hardware and software platform. Even within most companies there is no explicit standardization on one device and even where there is, it usually covers many versions of the same device which vary significantly between versions. In addition, large, multidisciplinary and international companies have such a wide array of requirements that standardization is impossible; some devices must be used in explosion-proof areas, others in warehouses employing barcodes, still others in the executive suite.

Lastly, there is another category of devices that, while not always mobile, can be very important in getting operational data in front of decision makers. Given the nature of the data (current, mission-critical, alerts, etc.), many businesses benefit from not only having it on mobile devices but also desktop and laptop PCs/Macs and flat-screen TVs in critical areas. As an example, we have multiple customers who use our application in break rooms, shift change rooms, data center network operations centers (NOCs) and more by putting this real-time data on display for everyone in the room to see and react against. It is certainly different than our primary topic of mobility, but these uses are ideal for the types of operational data that should appear on your phone. When choosing a vendor, it is a good idea to make sure they support all of these devices seamlessly (see mistake #1 later in the guide).

Everything seems to be going well. What's the problem?

If you read most analyst reports or blog posts about the state of mobile business intelligence you will probably get the sense that everything is great. You'll hear success story after success story about progressive companies who have put data on their phones and how useful it is. You'll also hear how popular it has become to do this, and while it is great to hear that things are moving forward, we also think that most of these success stories are not nearly as successful as they should be, and are fraught with painful experiences and expensive time-consuming projects.

In fact, it was a blog post we read about these "success stories" that led to the creation of this guide. The writer had gone on and on about how great these solutions were and how happy the customers were, but we couldn't help notice just how limited their solutions were and how expensive and long-running their projects were. We don't argue that these customers might be very happy with their solutions, but we suspect it is because they aren't aware of new approaches to mobile BI and some of the ideas in this and other guides available to them.

The five key mistakes

Given the ideas above, and how new the concept of mobile BI is to most customers, we felt the best thing would be a guide that exposes the many mistakes made by both vendors and customers in their quest to give their decision makers better support through mobile data. In that spirit, below are the top five critical mistakes we see on a regular basis:

1. Software on the device

Somehow most companies in the industry have ignored how powerful the web browsers are on modern mobile devices, and we're not just talking about the iPhone and the iPad. Blackberry, Windows Mobile and Windows Phone, Android, Palm, etc. all have extremely powerful browsers that can accomplish nearly everything that a custom application can without putting any software on the device (and this gets even better with HTML 5 on the horizon).

So why is this so important and why do we call it a mistake? Put simply, we have seen hundreds of mobile BI installations at very diverse companies and none of them have truly standardized on the same version of the same device. Even where a customer has standardized on Blackberry for example, they aren't even close to standardizing on the same models and versions of the device. Even if they get close, there are always some key decision makers or executives that have something else like an iPhone, iPad, Android or Windows Phone.

Now, if you or your mobile BI software vendor has architected a solution that includes a software application that needs to be installed on the device itself you are already setting yourself up for some

pain. Why? Because with every new device your company buys, you, your consultants or your software vendor has to create, test, deploy and maintain a new piece of software every time. Sound like fun?

It's amazing how many software vendors get this wrong and we find ourselves constantly reminding people how hard it is (for both the vendor and the customer) to create and maintain a new version of your app for every device that gets released? There are hundreds. It is close to impossible, and very expensive.

The key tip here is to find a solution that leverages the power of the browser, while also understanding the unique advantages of each device. The end of that last sentence is very important so let me explain. When a solution is advertised as "browser-based," that isn't enough. You need to make sure that it still understands and takes advantage of the device and its capabilities. For example, some phones are oriented in landscape, while others are portrait, and still others can do both. Also, they all have different amounts of pixels and resolutions to work with and different ways to interact with the screens (touch, d-pad navigation, gestures, keyboards, stylus, etc.). The trick is finding a solution that not only runs in the browser, but also understands the capabilities of the device requesting the information and consequently generates screens specifically for that device.

Oh, and keep in mind that if you solve for the phone's browser you also get the desktop and flat-screen TV solutions for free (and new devices like the iPad, Android tablets and Blackberry Playbook) without making a new version or creating a new app to maintain.



2. The myth of the big project

Why does everyone assume there needs to be a big services project to accomplish all of this? We expect it is because most of these vendors make the majority of their money on services (the so-called "success" story we mentioned earlier cost the company a significant amount just to get started, and most of the cost involved services and coding work. Oh, and every change they make in the future will require more services given their approach). So what is most of that money spent on? Other than some setup and IT infrastructure, we see the majority of it spent on designing and coding custom screens from scratch. Again, this is one of the biggest mistakes that get companies into trouble and costs them a significant financial outlay and months of valuable time.

To understand just how big this problem is, you need to remember the “types of data” section from earlier in this guide. Most of these companies and vendors are creating new screens, charts, scorecards, etc. from scratch or from a software toolset because they haven’t done their homework on choosing the ideal metrics to be presented on a mobile device to begin with. If done right, you will find that there are only a small number of key screens that present operational data from the right angles and in context to make better decisions. These should be built in to any software solution you consider (see mistake #4, the customization trap).

It is unfortunate how many people make this mistake, because when done right from the beginning, most key metrics can be viewed, in context and from all of the right angles, in just a few key screens (which should be generated on-demand, not custom coded in the project), especially when those KPIs are operational in nature. Key “views” always include:

- **What is the state of my x (business, factory, profit, product, supply chain, currency, etc.) at a glance?** (in our case, a [% rollup view](#) of all KPIs in a group – a pie chart flattened for mobile screens)
- **What is the current value of a key individual metric?** (found on almost every screen)
- **How does it compare with its expected value (thresholds, limits, etc.)?** ([trend](#), [KPI map](#), [bar chart](#))
- **What does this value look like compared to other similar KPIs?** ([scorecard](#))
- **What led up to this point?** (the [history](#), trend) This leads you to...
- **Are things likely to get better or worse given the trend?** ([trend](#))
- **Am I alerted when something is particularly bad or good?** (monitoring, alerts via email, SMS; see example on the right)
- **Who is responsible for this KPI and who do I alert?** (alerts)



The key thing to look for here is an application, not a project. You will find that there are completed solutions that can be showing your critical data on your devices within hours or days vs. weeks or months, without a barrage of consultants and without emptying your corporate wallet.

3. Wrong type of data

Mobile BI should focus on operations data, not future planning data. Traditional BI (OLAP cubes, data mining, hard-core analytics) often looks at planning data and also focuses on huge problems that need deep analysis (e.g. how many people might buy an iPad if we build it? Should we put a Starbucks on this corner next year?). This is hardly the right application for the mobile platform. Think about what people care about on their phones, regardless of what is possible: email, Twitter, getting directions, text messaging, sports scores and breaking news – all of these are operational, or “here and now” metrics. If you are going to analyze hundreds of variables around future planning scenarios, you are going to want to be in front of a big monitor with plenty of time and a pile of empty Mountain Dew cans – this does not make an ideal fit for the mobile scenario.

4. The customization trap

Mobile BI need not be rocket science. Most vendors we run into think mobile BI applications need to be wildly customizable. We respectfully disagree. Mistake #2 above highlights this. [Transpara's Visual KPI](#) application and others have been running with hundreds of customers' data in industries as diverse as utilities and power generation, oil and gas refining, data centers and biotech and we talk with those customers all the time. The funny thing is, we almost never get comments like "if only I could make a new screen that had x in it" which for a long time even worried us. Are they even using it, we thought? Turns out they were, and the screens we created showed them all of the key metrics in the right way. Now, this doesn't mean we don't have a significant list of improvements to make (we do, and so does everyone else) but it does highlight how straightforward mobile BI software must be in order to deliver value quickly without creating a wake of other problems to deal with.

Item Name	Unit	Min	Max	Target	Actual	High	Low	High	Low	Is Critical	Is OK	
1 Carl		High	High	68.519533	75.385205	88.69287	136.327	175	190	TRUE	CTC	
2 CTIQ2_GrNW		High	High	112.5	127.5	155	186.327	175	190	TRUE	CTC	
3 Imperial		Low	Low	500	600	484	411.482915	700	700	TRUE	CTC	
4 Peak Bandwidth		Low	Low	0	885.128	300	50.81764	125	125	TRUE	CTC	
5 Stock Temp		Low	Low	0	100.48	100.48	116.155	1280	1280	TRUE	CTC	
6 CTIQ2_Fuel		Low	Low	0	885.128	300	185.2971	150	150	TRUE	CTC	
7 Avg Bandwidth		Low	Low	800	3100	1135	3100	1104.155	1600	TRUE	CTC	
8 CTIQ2_GrNW		High	High	0	252	328.4	280	196.327	175	190	TRUE	CTC
9 Defect		Low	Low	1100	1125	1121	1104.155	1600	1600	TRUE	CTC	
10 DefectTest		Low	Low	0	100.48	100.48	106.327	175	190	TRUE	CTC	
11 New Solid Tank Level		High	High	0	100.48	100.48	106.327	175	190	TRUE	CTC	
12 CTIQ2_He		High	High	7000	4000	6000	8800.354	10000	12000	19300	TRUE	CTC
13 Data Transferred		High	High	0	885.128	3100.48	4000.89326	1875	1875	TRUE	CTC	
14 MWI7_Foodmaster		High	High	0	565	1300	1130	1194.872	1812.5	1995	TRUE	CTC
15 CTIQ2_Fuel		Low	Low	0	565	1300	1130	1194.872	1812.5	1995	TRUE	CTC
16 CTIQ2_GrNW		High	High	0	565	1300	1130	1194.872	1812.5	1995	TRUE	CTC
17 MWI8_Foodmaster		Low	Low	0	565	1300	1130	1194.872	1812.5	1995	TRUE	CTC
18 Peak Hts		Low	Low	0	565	1300	1130	1194.872	1812.5	1995	TRUE	CTC
19 McHstry		Low	Low	0	565	1300	1130	1194.872	1812.5	1995	TRUE	CTC
20 CTIQ2_GrNW		High	High	0	565	1300	1130	1194.872	1812.5	1995	TRUE	CTC
21 CTIQ2_GrNW		High	High	0	565	1300	1130	1194.872	1812.5	1995	TRUE	CTC
22 TotalHts		Low	Low	0	565	1300	1130	1194.872	1812.5	1995	TRUE	CTC
23 CARKP2		Low	Low	0	565	1300	1130	1194.872	1812.5	1995	TRUE	CTC
24 CARKP2		Low	Low	0	565	1300	1130	1194.872	1812.5	1995	TRUE	CTC
25 Hydroser Density		High	High	0	88.888255	78.688257	84	50.81764	125	125	FALSE	Can
26 Phase		Low	Low	0	333.55164	154.4388	195.8303	371.7	378.3	TRUE	CTC	
27 Phase		Low	Low	0	333.55164	154.4388	195.8303	371.7	378.3	TRUE	CTC	
28 Unique Visitors		Low	Low	0	100000	100000	100000	100000	100000	TRUE	FALSE	
29 Phase		Low	Low	0	100000	100000	100000	100000	100000	TRUE	FALSE	
30 Motor Speed - MTD		High	High	0	6.427208	0.3048375	1.848959	6.25	1.5	TRUE	STW	
31 Site_AES		High	High	0	1.448959	1.448959	1.225	1.5	1.5	TRUE	STW	
32 Site_NEX		High	High	0	1.448959	1.448959	1.225	1.5	1.5	TRUE	STW	
33 Top Content		High	High	0	10.8413	10.8413	10.82886	6	10	TRUE	STW	
34 Site_NEX		High	High	0	10.8413	10.8413	10.82886	6	10	TRUE	STW	
35 Site_NEX		High	High	0	10.8413	10.8413	10.82886	6	10	TRUE	STW	
36 Top Directory		High	High	0	10.8413	10.8413	10.82886	6	10	TRUE	STW	
37 Top_Sales		High	High	0	10.8413	10.8413	10.82886	6	10	TRUE	STW	

5. The "master source" mistake

Mobile BI software is not just a front end client to traditional BI. Again, read mistake #3 above (wrong type of data). Traditional BI is a great source of data for a mobile business intelligence solution, but they are most often not a 1:1 match and certainly not exclusive to each other. The ideal mobile solution often includes marrying multiple data sources to create that real-time solution, without creating a new master source of data for you to manage and maintain. For example, you might get some of your thresholds or limits from deep analysis in your data warehouse but combine that with some real-time data from a streaming database, historian, or even a traditional database that is refreshed faster for a true "here and now" mobile application. These combinations are endless and you shouldn't be forced to decide where all of your data comes from in advance. Things change (often), and your solution should be built with future changes in mind before they happen.

Additional things to avoid

We have highlighted five of the biggest mistakes we have seen in deploying mobile business intelligence solutions for the last 5+ years. There are many more, but avoiding those five are critical to getting yourself on the path to mobile BI success. To further help customers as they choose a solution, we have added a few more brief topics to keep in mind when speaking with vendors.

- **Security** - Some might say security is an issue, and it can be. What is most important is making sure any solution you choose will fit within your existing security requirements without requiring major (or any) changes to the way you operate currently. Asking for too much from IT will surely send up red flags, cause delays, or even put your entire project at risk. For more information on how this can be implemented, read this blog post about [mobile BI security](#).
- **Software as a Service (SaaS)** – Whether or not you want a hosted solution (we offer both) is often a matter of preference, but less critical to the overall success of your solution than the topics covered earlier in this guide. Over the past five years we have found that most customers prefer an on-premise solution for two reasons: a) it gives them better control over their data and security with the added benefit that IT prefers it as well, and b) when connecting to live internal data sources and integrating with existing IT infrastructure behind the firewall, it is much easier to start with an on-premise or private cloud solution.
- **Company background** – we think this goes without saying, but do some due diligence on the vendors you choose. Software companies are everywhere and even with the best of intentions they end up making promises they can't keep. How long have they been in business? How long have they been working on mobile BI? What is the background of the management team and have they done mission-critical software before? Don't just look at their customer list, call those customers yourself and see what they like and don't like.

Real examples

To illustrate how many of our customers have avoided the key mistakes listed above and to provide a sense of how large and medium-sized businesses are using mobile business intelligence successfully today, we are including a list of links to success stories from around the web:

- [Mohawk Fine Papers](#) (ControlGlobal.com)
- [Constellation Energy](#)
- [KeySpan Corp](#) (Intelligent Enterprise)
- [National Grid](#)
- [Western Power](#)

For more customer stories and articles on the topic of mobile business intelligence, please visit the [Transpara website](#) or the [Transpara blog](#).

Summary

With the right knowledge, choosing the ideal mobile business intelligence solution is much easier than you think. In the guide above, we have given clear guidance on avoiding the most common and significant mistakes. To summarize, below are some of the key characteristics to look for when choosing any solution for mobile BI:

- Focused on the mobile experience as a primary target (not an afterthought)
- Focused on the data that matters most to a mobile user (timely, remote and operational data)
- Gets its data from any source, including internal, external and future data sources that haven't even been identified yet.
- Built to leverage the browser with no client software to install, update, upgrade or maintain.
- Takes advantages of the unique characteristics of each device (e.g. touch, a mouse on a PC, a keyboard, etc.)
- A true software application vs. a toolset that requires significant customization, coding or screen building.
- If it requires a significant services project, you should already be concerned.

Regardless of what vendor you choose or solution you adopt, it is helpful to ask the right questions throughout the process and we hope, even if you disagree with some of these mistakes, that this helps you through the process of navigating this new and exciting area of decision support.

If you have questions about this guide, mobile business intelligence software, or [Transpara](#), please contact us at info@transpara.com or +1-925-218-6983.

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