

# Strategies for Successful Mobile Deployments

Considerations to maximize your ROI when planning enterprise mobile data collection projects

Mobile computing is not an emerging technology but a proven method with many known advantages. Still, there are significant challenges in implementing a computerized data collection system that yields both *high user satisfaction* and *clear cost benefits*.

Some of the main benefits that organizations realize with mobile data collection are improvements in data quality, real-time data availability, accountability (by being able to track the who-what-when-where of data being collected), security (that comes from user level passwords) audit trails, and quality improvements by tracking assignments.

Still, challenges remain. Often organizations are adopting mobile data collection to replace paper-based systems and need to re-think logistics. Other times, organizations are overwhelmed by the many different hardware-software combinations, and if the wrong hardware is piloted, it can lead to delays in roll out, particularly if it requires new technical challenges.

There are smart ways to maximize your organization's ROI for enterprise mobile data collection projects that will improve the bottom line and make deployment and management more efficient. This whitepaper will address strategies for deploying enterprise level mobile systems efficiently and effectively, focusing on rapid deployment.

## Prioritize project goals

It is important out the outset of a mobile data collection project to consider the overall project goals and to prioritize them. This will make things easier when you have decisions to make regarding any tradeoffs between technologies, data transfer methods, numbers of devices, types of devices and most importantly, scope of the project. Having priorities in mind will help you avoid missteps that can cost you significant money and time.

For some organizations, the primary focus may be ease of use for employees entering data and a system that allows them to send and receive relatively small amounts of data upon request to anywhere in the field. For other organizations, the primary need may be to collect large amounts of data, and to have access to this data only once a week for upload. In these two examples, each of the companies may end up using a different type of device, a different type of software configuration, and a different type of data transfer method.

Ask yourselves the following questions:

1. What are our primary goals?
2. How will we measure success?
3. How many handheld devices users will we have?
4. How soon do we need access to the data (immediately, weekly, etc.)?
5. What technology considerations do we already have in-house, that we need to consider for support (prefer Microsoft compatible, Oracle vs. SQL, etc.)?
6. What is our budget?

Keeping these questions in mind will make implementation faster and help avoid costly mistakes down the line.

## Choosing Devices - User Considerations

To achieve an effective and efficient deployment, it is essential to consider the needs of your users and the conditions under which they will use them. There are a variety of mobile devices available – Pocket PCs, Tablet PCs, Laptops, BlackBerries, and mobile phones. Considerations for devices include screen size, method of data entry (pen vs. keyboard), and data transmission method (WiFi, EvDO, ethernet connection, etc.). But it is also important to consider other issues such as the age of your users, as sometimes older users have more trouble viewing smaller screens, and the environment in which the device will be used. If devices are used mostly outdoors, it is important to consider temperature ratings if data collection will be done in colder or hotter climates, and screen visibility, since some devices have specialized outdoor viewing screens that allow the screen to be seen easily in sunlight conditions. Another important consideration is whether your project requires ruggedized equipment. Some devices are available ruggedized to withstand drops and bumps, and some device manufactures offer ruggedized cases that can be used with devices.

Considering the needs of your users will create greater enthusiasm for the project, better acceptance and ultimately avoid buying costly hardware that has to be replaced.

## Logistical Considerations for Data Upload

Choosing a data transmission method is a key consideration that will affect how quickly your data can be accessed, device capabilities, and cost. If your project requires that your data is shared with others on a real-time basis, you will require wireless transmission that allows users to upload and download reliably in the field. If users are within a contained area, such as a warehouse, WiFi may be the perfect option. If they are traveling throughout a state or the country, a wide area wireless transmission method would be required such as EVDO. If you don't have an immediate need for data transmission, and only once a day, weekly, or monthly upload is required, you can forgo the wireless connectivity and upload from an Ethernet connection.

## Build or Buy Software?

When undertaking a mobile data collection project, some organizations may have resources and skills in house that they can tap into to create custom mobile data collection applications. Some organizations may desire to outsource a custom application to a software development company, while some may wish to purchase off-the-shelf software. This is often a pivotal decision when beginning a mobile data collection project as these different approaches can have long term requirements for service, support, resource allocation, licensing fees, and project flexibility for the long term.

### ***In-house Custom software***

Building your own mobile data collection software system makes the most sense when you have experienced employees in-house who have executed successful deployments in the past, and when your mobile data collection system needs are relatively few. It is often difficult to build and support a large scale data collection effort in-house because of the resources and support required for custom applications, particularly if the number of people using the system is large. For smaller data collection applications with simple upload and data collection needs, this may be a viable approach if the data collection fields are not likely to change, so that the software won't have to be continuously re-programmed and redeployed.

**Advantages** – The most common reason companies decide to build in-house is to save money and be independent of outside vendors.

**Pitfalls** – Developing in-house can be a very time consuming way to deploy and maintain a mobile data collection system. Custom handheld data collection software is difficult to alter if your data collection needs change. Also, there are many technical issues to consider – method of upload/download, support for handheld hardware, upgrades to the operating system, etc. that are difficult to support and can tie up much more of your internal technical resources than you

expected. As a general rule of thumb, you can utilize your resources better if you analyze your strengths and weaknesses.

### ***Outsourced Custom Software***

There are companies that specialize in custom software development who have experience with mobile systems that can execute a system on any number of platforms, technologies, and configurations. The challenge, similar to in-house development, is to make sure you have something sustainable for the future. This is often hard for custom software to achieve because changes to the data entry fields often necessitate changes to the database, which means additional programming, testing, cost, and time. Another challenge is to contain the support costs, either for in-house resources or by the company you are outsourcing to.

**Advantages** – You can gain the expertise of a company experienced with mobile data collection software deployment.

**Pitfalls** – You may have unexpected costs related to when changes to the data entry fields are required, or you may not be able to accurately predict and quantify the costs needed to successfully support the system. Custom implementations may be rigid, difficult, and costly to maintain overtime.

### ***Mobile Data Collection Out-of-the-box Software***

Commercial software exists for mobile data collection. Some of these solutions are industry-specific solutions and some are more flexible for multi-industry use. These products range from the ability to deploy simple forms on Pocket PC to more robust programs that handle deployment, security, and device management. How do you know which one is for you? Considerations include types of platform that they support (Pocket PC, Tablet PC, etc.), what databases they work with, what flexibility exists, what add-on features are available, how open the architecture is, how much it costs, and what support scenarios are available.

**Advantages** – Good mobile data collection software can automate many of the processes reliably, including data transmission, security settings, workflow management, and device management.

**Pitfalls** – Commercial software may not give you the flexibility to meet your project's needs. Some solutions only work for one type of mobile device platform, and some lack features that allow you to realize your project's goals.

Key considerations for deciding upon a mobile data collection commercial software product are the following:

- 1) What platform(s) are supported?
- 2) What is the learning curve?
- 3) How easy is the software to use, given your in-house skills
- 4) Does the software work with systems that you are familiar with and in-house systems are compatible with?
- 5) Is there a commitment by the company to keep up with and support future versions of hardware and operating system upgrades?
- 6) How easily can you customize your application to meet your needs?
- 7) Does the software have features that can grow with your future data collection needs?
- 8) Do your homework! Interview many companies and products to see which best fits your business model to see where synergies can be best achieved.