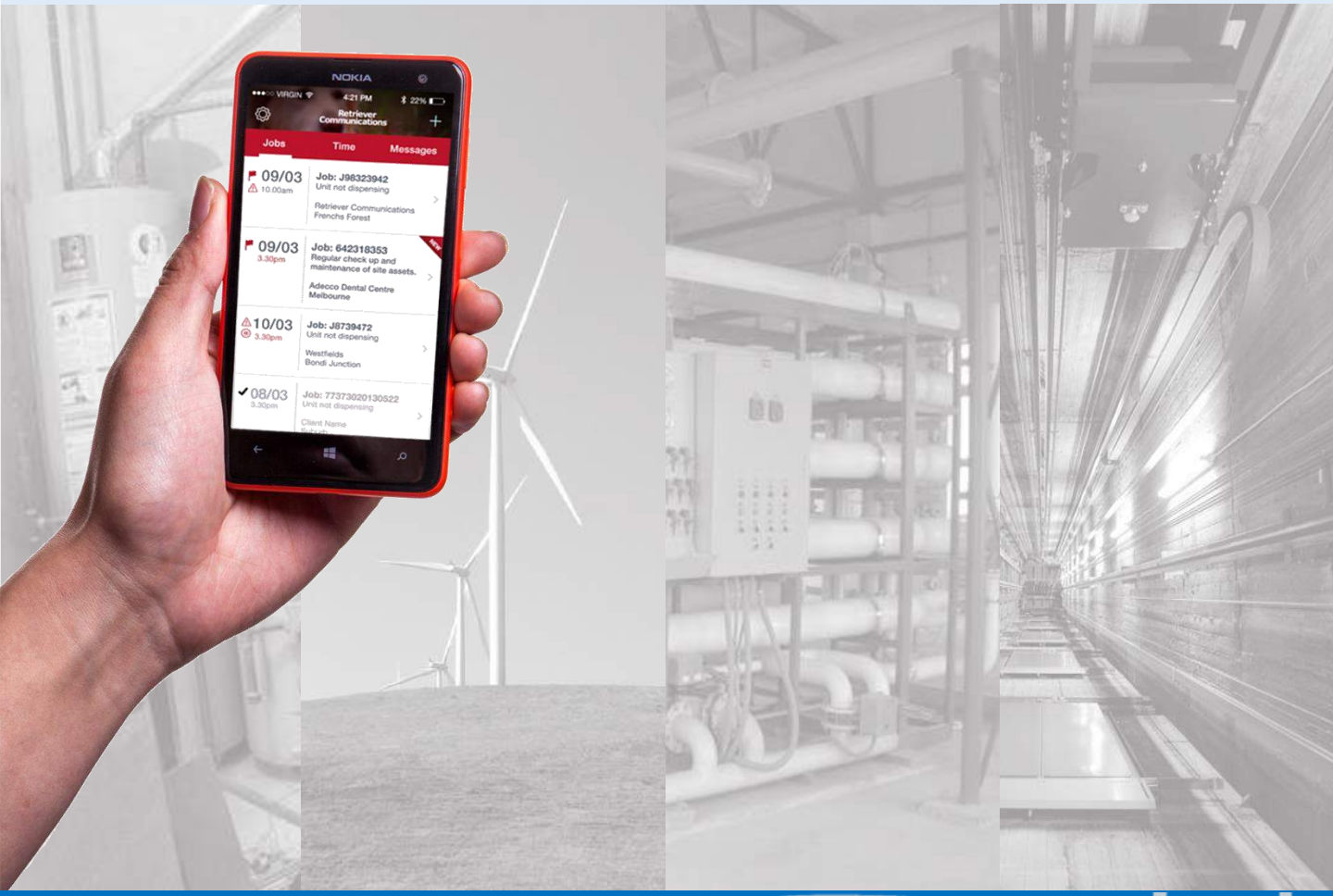
Retriever Communications

WHITEPAPER

8 Key Things to Look for in a **Field Service Mobile Application**

What to consider to ensure the app you choose becomes an indispensable 'tool of trade' for your field workers



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Automating the Field Force

Regardless of the size of your business, managing a field service operation can be challenging.

Today more and more businesses are investing in field service management technologies, including mobile apps, to manage and further advance the productivity of their workforce. So it seems clear that that the time to mobilize the field force is now…so what's the hold-up?

In reality, anyone who's ever actually faced the challenge of deciding which field service mobile app to deploy are often all too aware of the challenges – time-consuming at best and confusing at worst.

To aid you in the decision making process Retriever Communications have identified a list of must-have application qualities and things you should consider when evaluating any field service mobile app for your field force.

The insights in this whitepaper come from the results of a recent university study commissioned by Retriever. The study was performed by Access:UTS, a controlled entity of the University of Technology Sydney, and observed a group of technicians who use mobile apps in the field.

You can read more about the study below.

According to Gartner, 85% of businesses indicated they're using mobile field service applications or plan to use them within 24 months*

About the study…*

Johnston, A. and Pickrell, M. Designing for Technician's working in the Field: Eight Usability Heuristics for App Design (2016)

A recent study conducted by the researchers at Access:UTS inspired this whitepaper. The study proposed a set of eight design considerations when developing mobile applications for staff working in industrial field environments.

The study focused on the use of mobile applications by technicians working in the field. The researchers carried out contextual inquiries to better understand this specific context of use.

Based on the findings from these inquiries, a set of eight design heuristics were been proposed.

Along with use by designers and developers who are working on applications specific to this context, the rules can also be used as a guide to evaluate the usability of current field service applications in the market.

Download and read the university report for yourself by clicking on the button below.

Click Here to Download the Report

* **Source**: Gartner, 22 December 2014, Magic Quadrant for Field Service Management, accessed 1 July 2016
* **Source**: Johnston, A. and Pickrell, M. Designing for Technician's working in the Field: Eight Usability Heuristics for App Design (2016)

1. HIGH CONTRAST COLOURS

Functionality in a Field Service Context

When you consider that fact that a field worker may be standing on a roof wearing gloves, down a dark lift shaft or in an oilfield in direct sunlight you realise the importance of a well thought-out practical app design.

In an industrial field service context, the aim for any app should be to assist the field worker to do his job. This requires a good understanding of his environment, to ensure easy screen navigation and seamless data capture at all times.

Another point seldom considered is that with about 10% of the male population suffering from colour blindness* a good field application should:

1. **Avoid colour combinations which are particularly hard on colour blind people**
2. **Go monochrome -** use various shades of a single colour rather than multi colour
3. **Not rely on colours as indicators** – for example that the colour red is bad

Key questions to ask the vendor…

- **What measures have been taken to ensure the application is functional in the field?**
- **Does the application make use of high contrast colours to reduce screen glare?**
- **Colour blindness affects a significant proportion of the male population. Is the app functional for those with colour blindness?**

WORKING OUTDOORS?
THINGS TO CONSIDER…

Screen Glare

Poor colour choices can make an application difficult to see on a mobile screen when outdoors.

How to avoid it?
Look for apps with high contrast colour combinations, e.g. dark text on a white background to improve readability.

Button Size

If buttons are too small or button placements are unintuitive techs will find it difficult to figure out where to tap. Wasting time and often leading to mistakes.

How to avoid it?
Look for apps with large buttons that are intuitive & consistent.

Small Screen Size

It's often time consuming to collect large amounts of data using a device with a small screen and/or keyboard.

How to avoid it?
If your techs need to capture large amounts of data, it's advisable look for apps or devices that devote a large portion of screen area to data capture.

* **Source**: Johnston, A. and Pickrell, M. Designing for Technician's working in the Field: Eight Usability Heuristics for App Design (2016)

2. AVOID BATTERY DRAINERS

A well designed field service application should not strain the battery life of the mobile device it's running on. This is especially important if your field workers are out in the field for long days with minimal ability to re-charge.

Look for applications that…

- **Use High Contrast Colours:** reduces need to have the backlight on which drains power
- **Use Networks Efficiently** - look for apps that bundle information to transfer at key points rather than constant updating.
- **Uses A Smart Synch** – constant synching drains battery so look for apps that synch only at key points in the business process.
- **Can Control GPS Data Relay** – ability configure how often GPS locations are sent as constant GPS updates can deplete battery.

Other tips to extend battery life…

Provide In Car Chargers – to allow for battery top-ups when travelling between jobs

Maintain Devices– old devices have poor battery life, regularly maintain & refresh the fleet

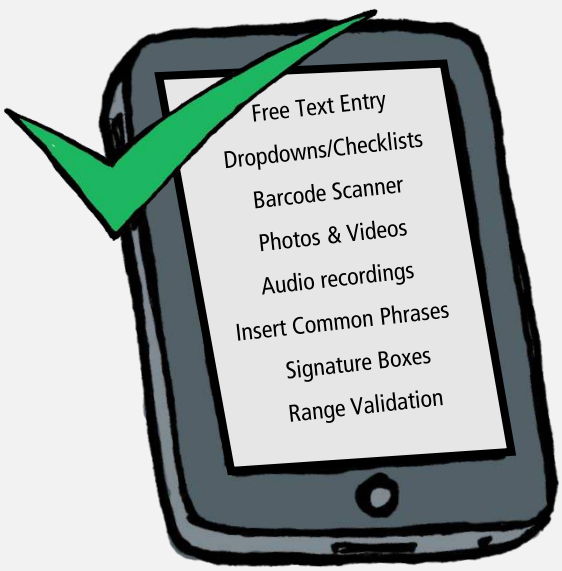
Key questions to ask the vendor…

- **How often does the device synch to send and receive data? Can this be configured to maximise battery life?**

3. MULTIPLE DATA CAPTURE METHODS

When evaluating the useability of a field service app ensure you look for simple interfaces designed for ease of data input by field workers.

This includes providing multiple ways for information to be recorded. Allowing data capture by means of dropdown lists, barcodes scanners for identification and photos rather than entering lengthy descriptions will allow for more fast and efficient data collection.



Key question to ask the vendor…

- **What data capture methods do you advocate?**

4. EASY ACCESS TO JOB INFORMATION

When evaluating field service apps, always ask what types of information or documentation the application can deliver to field workers. It can range from simple job location and description right through to technical documentation, safety guidelines, site maps and hazard report forms.

By incorporating all the required job documentation into the app, it reduces time spent finding the relevant information elsewhere.

If documentation cannot be found quickly, jobs which might otherwise be completed on the spot must be deferred to a future visit.

Key questions to ask the vendor…

- **How does a technician retrieve job information? What types of job information can he access?**
- **Can a user access job documentation, for example a manual even if he has been offline for a day? A week?**
- **Can I configure specific job information to appear per job type, per customer or per asset type? For example, all jobs for Customer ABC require a specific safety form to be completed.**

5. ACCESS TO ACTIVITY HISTORIES

A single customer or job site is often visited multiple times by many technicians.

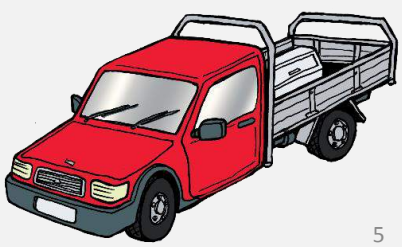
Information 'learned the hard way' by a technician about a particular site should be made available to others working at that site in the future via the mobile application.

The same principal applies to pieces of equipment which may be serviced or repaired many times during their working life.

The ability to add site and/or asset notes is one way to ensure knowledge share amongst your field workers, another way is to allow access to past service reports from within the application.

Key questions to ask the vendor…

- **Does the app deliver information for a customer site or asset history? Is it accessible without mobile coverage?**
- **Can a technician review past service reports via the app?**
- **Does the application allow technicians to view asset or site notes whilst on a job?**



6. COMPREHENSIVE OFFLINE CAPABILITY

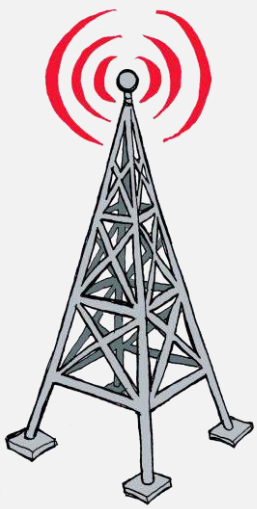
As much as we would like to believe there is mobile coverage everywhere, the reality is vastly different. There are times in each day when even the average Australian suffers bad coverage: for example simply in the underground carpark of a supermarket.

Now a worker in the field – a lift technician, a quality inspector, a cable guy often will be without coverage for hours.

If the app can't behave in the same way without mobile connectivity, how can you expect your field staff to be consistent in how they conduct their work?

What's needed is an app that is totally reliable. Therefore it's crucial for a mobility solution to be useable regardless of mobile coverage (including being offline for at least the length of the job). The app should then ensure data is synced automatically when an internet connection next becomes available.

Because offline capability is fundamental to the success of a mobility project, you should always ask if app you are reviewing is **Native or HTML5** based as this factor can impact the apps offline capability.



Why the application type matters?

HTML5 Apps

HTML5 apps are easy for IT, but it's unfortunate that the user experience is often poor and thus the business benefits achieved are at risk.

In environments where there is little to no mobile coverage most HTML5 applications have functionality & performance issues. For example, without coverage the amount of data that the HTML5 app can store or referred to is inadequate, rendering the app fundamentally unusable.

Despite this, mobile app companies often produce HTML5 apps because they're more convenient.

Native Apps

Native apps are specific to a mobile platform. For this reason, native apps are harder and more expensive to maintain, especially if the app supports more than one mobile platform.

End users prefer native apps, the look, the performance and offline capability wins them over every time. Due to this, native apps are best practice in field service to ensure user adoption.

Key questions to ask the vendor…

- **If a field worker is out of mobile coverage for a week, can they continue to capture job photos, access the parts list and view job information without the app behaviour or performance altering?**
- **Is the application portable across Apple, Android and Windows Device?**

7. GIVES CONTEXT TO DATA CAPTURE

A good field service mobile app should provide field workers with an outline of what the data they input is being used for (along with the ability to access this information when it is most useful).

Making this available helps field workers to understand what information they are required to input and encourages them to do this fully and completely. If an app fails to do this, it can result in field workers not adding the necessary detail to particular questions when documenting work completed.

It is also important to provide a clear indication of all required equipment to be serviced, required forms to be completed and mandatory fields within the forms to provide clear, unambiguous instructions of what is expected on that job.

Key question to ask the vendor…

- **Does the application allow technicians to access notes or help text when capturing job data?**

8. REFLECTS WORKFLOW

In mobile, a good application should be able to be configured to mirror your field worker's current processes. This is to ensure engagement & encourage adoption with the solution.

You must start in the field and truly understand the user's needs before working backwards to a solution – this is what is called a 'user centric design'.

In this way, mobility counters the normal IT process of creating a solution using the technical structures of existing systems and training users to change processes to fit it.

Complex menus and detailed displays work well when using a mouse & keyboard, but are impracticable when on a mobile device in the field.

Key questions to ask the vendor…

- **How do you configure the application workflows? Can you define workflows per job type, per asset type or per customer?**
- **If our processes change, how long does it take to update the workflows in the application to reflect these changes?**

Other things to look for…

Training included…

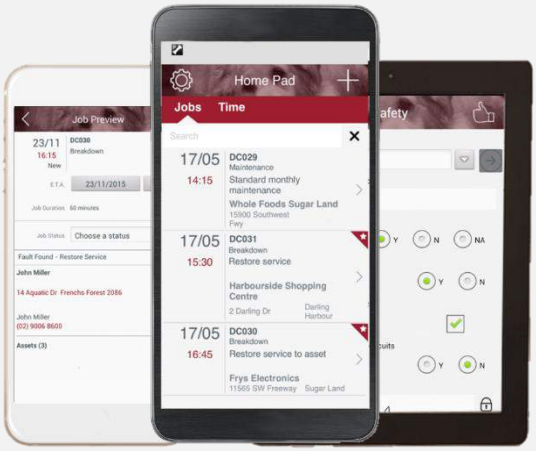
A few hours of training is all that is needed to ensure your mobile application is given the best chance to succeed in the field.

Vendors who don't advocate mobility training as essential run the risk of the solution not being used or not being used to it's full potential by technicians

Quality Support …

Always look for mobility solution vendors that provide a local support desk. A quality support desk should be easily contactable, responsive and have competent staff to fix the any problems fast.

It's also important to ensure the support staff are direct employees of the vendor. This will give your field workers confidence that they're supported if anything was to go wrong.



Retriever Communications has delivered enterprise mobility to enterprise since 1996. Retriever's industrial strength mobile field solutions improve productivity and automate data collection processes for companies with field operations - operating to service companies in energy, engineering, manufacturing, petroleum, distribution and utilities.

Contact Retriever to increase your field safety compliance, quality & timeliness of reporting.

Retriever Communications

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