truecontext

WHITE PAPER

Ensure Environmental, Health and Safety Compliance

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Paper-Based Workflow – Yesterday's Choice

On average, 7.5% of all paper documents are lost altogether. The re-creation costs associated are inestimable[1].

Mobile solutions have empowered environmental, health & safety (EHS) teams to conduct efficient and accurate EHS inspections, raising compliance and, in turn, strengthening the bottom line and company brand. Yet many businesses are still relying on slow and ineffective paper-based methods for collecting and sharing EHS compliance data. These outmoded methods present a number of considerable drawbacks:

- **Illegible handwritten paper** forms suffer are vulnerable to loss or theft
- **Time-consuming** and error-prone process
- **Delays** when addressing compliance breaches, and in response to claims, litigation, or audit
- **No rich media capabilities** (images, sketches, sounds, voice annotations, scanned bar codes and more)

[1] Visioneer, Inc., a Xerox Scanner Licensing Partner

Introduction

Many businesses are aware of the pitfalls associated with relying on manual processes, but they often have the perception that a greater challenge would be adapting to new technology. Managers who have spent their entire careers relying on traditional routines are often wary of adopting new, unfamiliar digital platforms. Still, a rapidly changing world mandates the adoption of new technology to stay competitive.

While ad-hoc solutions – often based on manually aggregating handwritten notes, photos, email and spreadsheet files – can be captured and distributed digitally, they fail to form a cohesive and auditable data record submission process with GPS, time stamps, and other metadata. These methods also lack comprehensive analytics capabilities, making it difficult and time-consuming to extract compliance and business value from the collected data.

Once a company has decided to upgrade to a mobile solution for collection and sharing field data, there are a number of solution components to consider. **This white paper will guide you through the many options.**

Consequences of Failed Environmental, Health & Safety Compliance

Workplace accidents can be disastrous both to workers and businesses. In 2014, over 12 workers were killed every day in U.S. workplace accidents[2]. The four most common causes – falls, electrocutions, struck by object, and caught-in/between – happen across industries, including construction, manufacturing, agriculture, warehousing, mining, transportation, and energy. All stakeholders share a responsibility for finding ways to make our workplaces safer.

Over the years, improved health & safety regulations have had a dramatic impact on worker safety. Worker deaths in the U.S. are down from about 38 deaths per day in 1970 to 12 per day today, but efforts to improve conditions, processes and workflows are ongoing. Diligent companies create business processes designed to identify risk areas and take the appropriate measures to mitigate risk. Even modest, incremental improvements in health & safety practices are likely to save lives, which is why it's so important for businesses to collect, analyze and distribute vital safety information in a seamless and timely manner.

The consequences of failed environmental compliance are often highly visible and dramatic. Large oil spills and other contaminations can have catastrophic consequences for both the environment and corporate reputations. A recent example is the BP Deepwater Gulf of Mexico incident, which cost 11 lives and $60B in fines and litigation settlements. The damage done to the BP brand and corporate value is astronomical and will take decades to repair.

The Lac-Mégantic train disaster on July 6, 2013 killed 47 people and saw over 5.5 million liters of oil spill into nearby lakes and rivers – contaminating the surrounding grounds up to 60 km away. The accident wrought havoc on the town of Lac-Mégantic. Three railway companies suffered devastating financial losses and eventually had to file for bankruptcy.

[2] Source: osha.gov

Town of Lac-Mégantic, Canada, 2013

Other Liabilities and Costs

In addition to potentially millions or even billions of dollars in lawsuit settlements, there are a number of other costs that companies can incur as a result of inadequate EHS inspection processes. These include time lost from work due to injury or illness, replacement costs, reduced efficiency rates due to the breakup of a crew, damage to tools and equipment, and loss of production. Accidents can also deliver a substantial blow to employee morale, causing a decline in workplace productivity.

According to a recent study by independent research firm BLR, nearly half of EHS professionals still use paper-based forms to collect and share environmental, health & safety data. A majority of respondents still use spreadsheets to report on and aggregate monthly safety trends. Considering the magnitude of the risks in terms of environmental repercussions, liabilities and impacts to the brands of the companies involved, the results of this survey are quite astonishing.

A clean compliance record means efficiently collecting, analyzing, and sharing accurate EHS data. U.S.-based market research firm Aberdeen Group recommends in a recent report that businesses adopt a mobile solution to make reporting more effective and less cumbersome. Mobilizing compliance reporting dramatically increases the efficiency of the process, which in turn reduces — and in many cases, eliminates — the risk of unreported issues. Many organizations are quickly realizing how mobile technology can be used to improve environmental, health & safety reporting. This white paper outlines a number of factors to consider when deciding which mobile solution to adopt.

READ THE REPORT

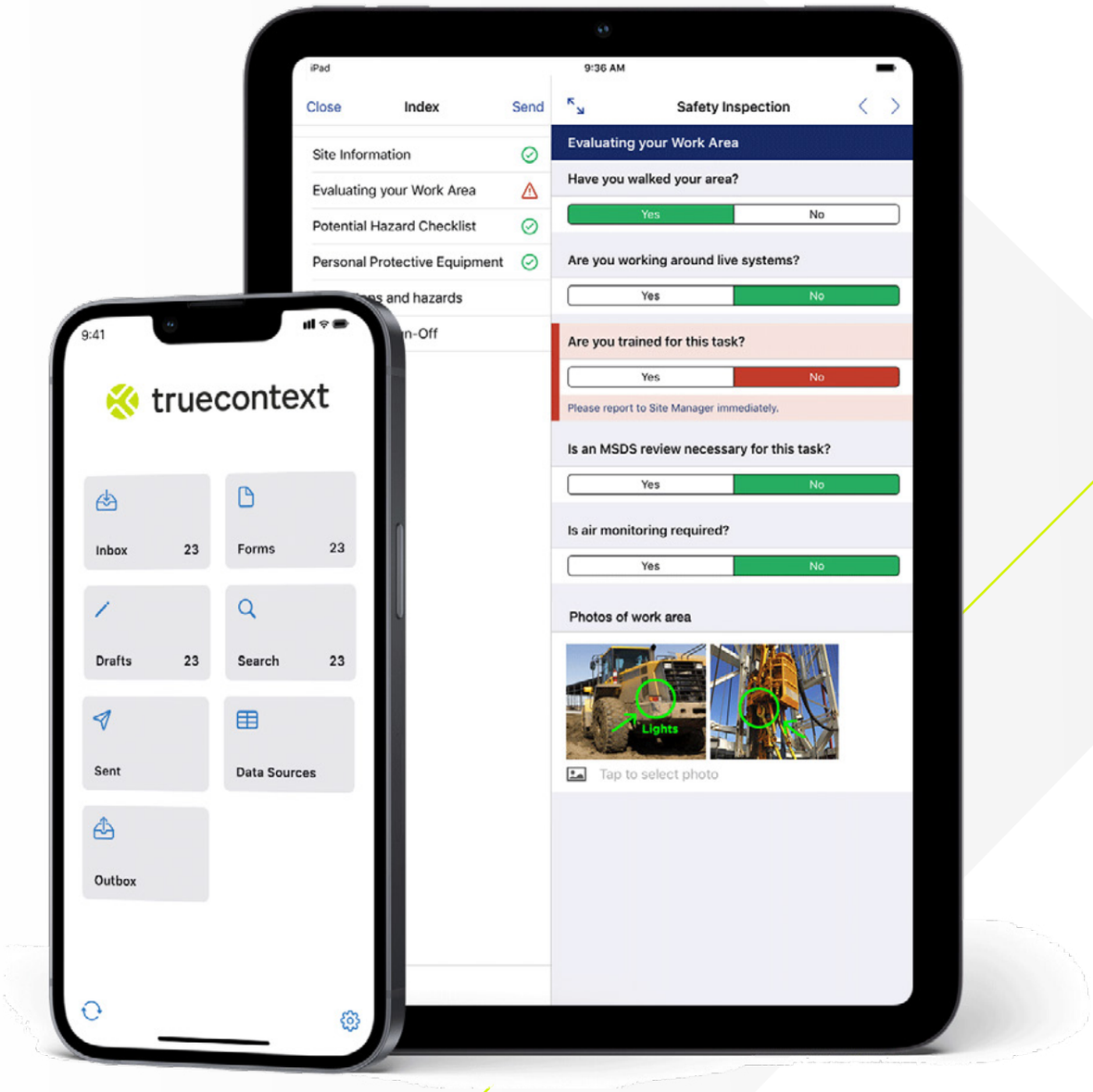
Platform Considerations

DEVICES

The first thing to consider is the devices themselves. Consider a device with a reputation for cutting edge technology that is usable out of the box. The successful launch of 3-dimensional device interaction is a great example of this.

It is important that the device you choose suits the different needs present in every business. Whether a user needs a large screen and the ability to connect to a keyboard, or they need to be fully hands-free, your platform has to be flexible enough to accommodate every need. Ideally, the platform will be familiar to the majority of your users to minimize the training process. Ideally they should be user-friendly and intuitive even to novices and people who are unfamiliar with mobile technology.

The devices must have a reputation for consistent connectivity, with hardware specially designed to ensure that your team will be connected wherever they go. Powering down is not an option during the day, so ideally the device will be able to boast the longest battery life in the industry.



OS

The operating system that runs your mobile solution has to be powerful enough to fuel your business, and simple enough that onboarding users is quick and easy with little to no training. The chosen OS will need to support third-party apps, including the tools, frameworks and guidelines to help developers build great apps. It should also craft its basic features, like the ability to search the device's content, to be compatible with any app on the device.

Integration with back-office systems and cloud services needs to be easily manageable either by an administrator on your team, or by individual users. This is especially important when your team is BYOD, or works with contractors that have to submit data to your back office.

Updates to your solution's operating system should be frequent and reliable to mitigate emerging security risks. If they're reviewable by administration before they're made available to mobile users, even better. To save time, it is desirable for administrators to be able to customize the roll out of apps and updates when using managed, company-owned devices without the need to interact with the devices directly. This will not only eliminate the need for users to bring their devices in, it will ensure devices are only running authorized versions of the app(s).

Rugged Devices

If you need your device to meet military standards for durability, their significantly higher price points may be acceptable. However, consumer products, when paired with specially-designed cases and other accessories, can be made to withstand inclement conditions, and offer a much better user experience. **For all but the most extreme environments, consumer products are often not just enough – they're ideal.**

APP SELECTION

The app store supported by your mobile solution needs to include the best apps for business users in a wide range of categories: Business, Finance, News, Productivity, Reference, Travel, Utilities and many more. If your team or contractors work with multiple platforms, it's also preferable that these apps are accessible cross-platform for company-wide visibility and support where it's needed.

Be sure your solution's app store supports secure, bulk purchasing and deployment of apps, and allows you to schedule updates for your team, or accommodates BYOD users with app codes.

SECURITY

Whether users' devices are company-owned or BYOD, it is important that your mobile platform is a leader in security with a proven record of success. The app store must feature strict security and QA protocols that minimize the risk of end users being exposed to apps that contain viruses, security risks, and other malware.

The devices themselves must take a holistic approach to security with hardware, software, and services designed to ensure that both third-party and in-house apps access data only in ways that are authorized.

The platform must also support fingerprint login, as well as remote wipe capabilities for lost or stolen devices.

Enterprise Support

It's important that the platform offers broad out of the box support for third party enterprise-level Mobile Device Management (MDM) solutions. These solutions are used to secure, manage, and monitor hundreds, or thousands, of corporate- and employee-owned mobile devices that access business critical data in an enterprise environment.

Security and configurability are key components of an enterprise-level mobile platform, so look for best-in-class security that can be easily managed – starting at the system level, via strong encryption and data protection features, via app and network security, security tools for Internet services, down to privacy controls for the devices themselves.

A PLATFORM THAT OFFERS THE ABOVE CONTROLS IS WELL SUITED FOR USE IN THE ENTERPRISE.

Desired Mobile Solution Capabilities

ABILITY TO CAPTURE RICH DATA – EVEN OFFLINE

Many work-related tasks can be performed much quicker by taking pictures, scanning barcodes, tracking employee movements, and recording signatures to confirm authenticity. To do all this on a single device, and store it automatically, even better. To effectively communicate and authenticate information in the field, it is essential that your mobile solution include these capabilities.

Media-rich data empowers key stakeholders to make better decisions. Sometimes, only a picture can fully convey issues and concerns found during an inspection. Top-tier mobile forms solutions allow field workers to sketch and annotate on top of site and equipment photos to highlight EHS concerns. The final images are seamlessly integrated directly into the forms. Leading solutions also feature audio capabilities, allowing inspectors to capture the sound made by a piece of equipment, which is crucial for gauging its health. Like photos, audio files are effortlessly embedded into the forms for later review.

As field workers often work in remote locations, they can't afford to stop working whenever they lose internet access. The mobile solution must include the ability to capture rich data in the field whether their mobile devices can connect to the internet or not. Failing to do so can lead to not only lengthy delays, but also embarrassing moments in front of customers when offline device becomes unusable.

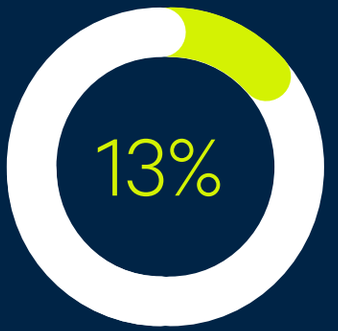
For this reason, simple web apps running in a browser cannot be recommended for professional field service use. Only truly native apps have the inherent offline capabilities to meet the needs of field service professionals.

HIGHLY SCALABLE AND CONFIGURABLE

The best mobile solutions are scalable and flexible enough to meet the needs of an ever-changing environment. All aspects of the solution should be easily configured and controlled, regardless of the size of the workforce, the types of information collected in the field, the types of devices used, operating systems, types of back-end and analytics systems used.

of businesses are using cloud services to support their business operations

plan to use cloud services within the next year



plan to use cloud services within three years

CLOUD MANAGEABLE

Forward-thinking companies are increasingly turning to cloud services as they open great opportunities for low cost, highly scalable solutions while those relying on internal IT infrastructures face large capital expenditures in hardware, data centre facilities, and operations when trying to expand.

CLOUD SERVICES UTILIZATION IN BUSINESS

2014 International Data Group survey results (SMBs, large companie & enterprises)

- **87%** of small and medium businesses used cloud services and **43%** wish they had adopted the service sooner.
- **75%** say it reduces time spent managing IT
- **94%** say it produces security benefits
- **70%** say it improves service availability
- **51%** are reinvesting money they saved back into their business as a result of moving to the cloud

IDG

SEAMLESS END-TO-END WORKFLOW

The mobile solution must facilitate an end-to-end workflow to ensure effective business operations throughout the organization. Employees, managers and other stakeholders must be able to seamlessly record, store, access, and share information in real-time using a wide range of workstations, laptops, tablets and mobile phones.

This makes it possible to extract value and generate actionable business insights based on the collected field data.

Big Data Analytics

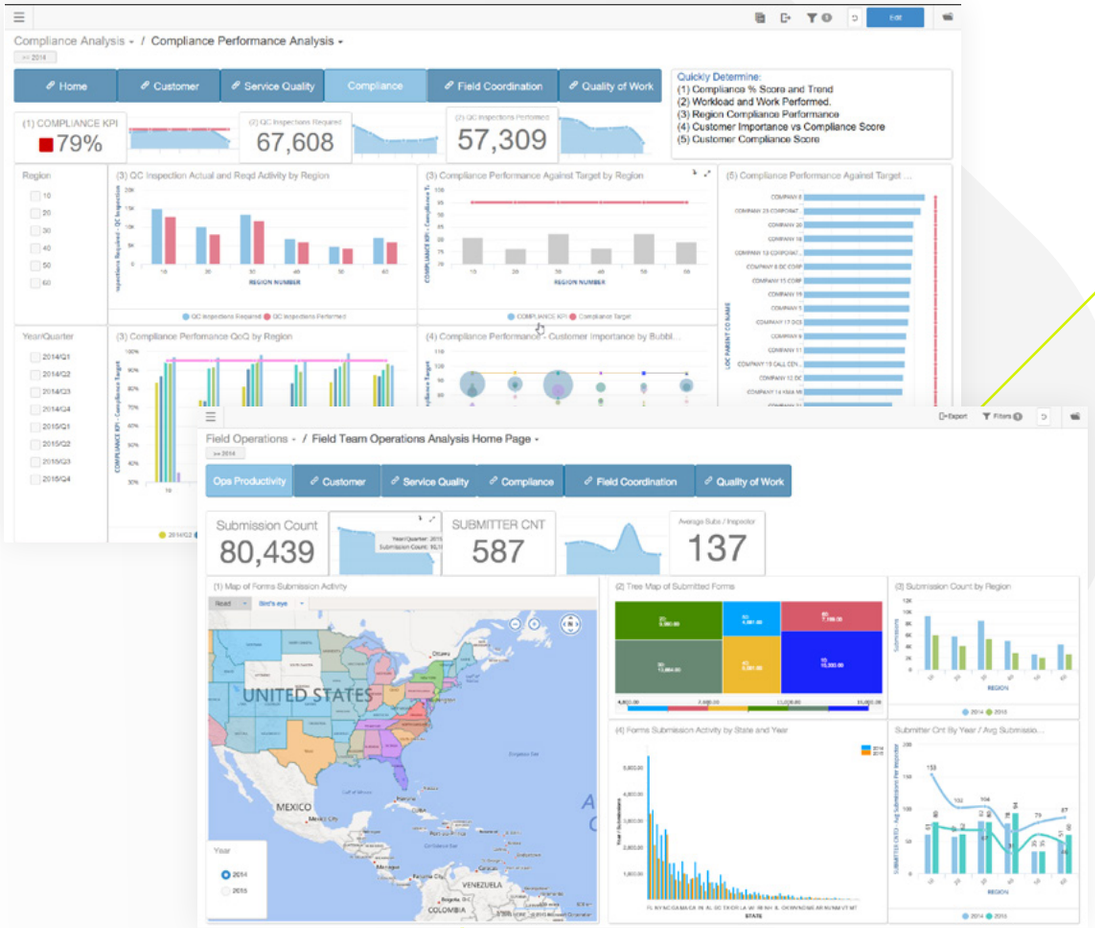
Along with cloud adoption, many organizations are beginning to make use of analytics to leverage collected field data quickly, and respond to business processes and opportunities faster.

According to The International Institute for Analytics, a company requiring analytics a decade ago would engage in descriptive analytics: they would simply condense big data into smaller, more useful nuggets of information. This typically was time-consuming and involved creating analytical models in batch processes which influenced decisions made based on experience and intuition.

Analytics advanced into big data in the mid-2000's, when complex data sources and new analytical and computational capabilities emerged, including predictive analysis where existing data can be used to predict outcomes for different causes of action.

Today, the most advanced analytics tools allow companies to leverage big data to perform prescriptive analysis where data can be used to recommend one or more courses of action – and show the likely outcome of each decision.

Analytics tools allow you use big data to track progress on a number of projects and drill down to identify productivity challenges by region, work group, site or even individual employees. Additionally, analytics provide quick access to data that can be used to confirm compliance to address legal, regulatory or other requests from partners and/or management.



Hofstadter's Law: It always takes longer than you expect, even when you take into account Hofstadter's Law.

DOUGLAS HOFSTADTER
GÖDEL, ESCHER, BACH: AN ETERNAL GOLDEN BRAID

The Choice to Build or Buy

A major factor that needs to be considered before adopting any data collection solution is whether to build it internally or adopt an existing solution. SMBs rarely, if ever, have the required expertise in-house, which rules out a do-it-yourself project.

Enterprises might have software teams that could undertake a project of this size, but unless creating mobile apps for data collection is among your core competencies, your time to market is likely going to be long and there's no guarantee you'll get the results you want. Examples abound of enterprises spending thousands of man-hours over six-to-nine months trying to come up with a software solution for data collection, only to realize the end product doesn't meet the needs of the end users and they're back to square one.

Enterprises that can afford to build their own app also generally need to support BYOD contractors that don't use standard devices issued by corporate IT departments, and so either can't access the company's app, or the company must build to accommodate multiple platforms. It's also important to note that if you're building solutions for existing products, keeping app development up-to-date with new releases on the platform can cause delays in programming.
It has been said that all software development projects take twice as long and costs twice as much as initially planned. Analysts suggest that approximately 30% of the development costs of an in-house app will be spent in yearly maintenance-only costs. In contrast, subscriber deployed solutions have zero-to-little maintenance and support costs and frees up sizeable enterprise IT and development resources, requiring no further major maintenance costs.

Should a customer still require a bespoke solution, there are customer-centric vendors that offer custom integration capabilities.

Case Studies

Shell's Health and Safety team strives to make Groundbirch, B.C. a place where no one gets hurt, nothing gets spilled, and damage to assets and reputation simply do not occur. Before adopting a mobile solution for its health & safety procedures, each site operated somewhat in isolation. Many documents were modified in the field, not all sites performed inspections and checklists, and the process differed from one site to the next.

Using this process to monitor and maintain health and safety compliance resulted in inconsistent inspection forms across the company. This meant that analytics reporting in SpotFire, their chosen business intelligence analytics tool, suffered. SpotFire requires consistent data entry by administrative staff, and often there were delays in data entry, which caused delays in noticing safety trends.

Additionally, inconsistent reporting was received from subcontractors for safety issues because they didn't have access to Shell's reporting systems.

TrueContext provided Shell with a form building toolset, which they used to develop their own forms for use on iOS devices. Shell was able to roll out consistent tracking and reporting capabilities.

TrueContext's breadth of features and capabilities equipped Shell with the tools they needed to consistently track and report on their capabilities, as well as integrate TrueContext with their analytics engine. The mobile solution provided to Shell by easily scaled, and was distributed to all of Shell's users while maintaining a consistent operational cost for forms. The low cost of ownership for the TrueContext mobile solution was proven to be the best value for the best return.

Shell needed a lean process and consistent measurement tool that could quickly gather and effortlessly track, filter and analyze the information gathered in the field and make sense of it.

Shell is now able to track, filter and analyze the information gathered from field workers, keeping their sites – and their employees – productive and safe.

Shell

CROSSTOWN

Crosstown Transit Constructors is a joint venture of four Canadian and American construction firms. Its goal is to complete the western contract for the Eglinton Crosstown Extension Light Rail Train (LRT) for the city of Toronto, to expand the city's subway system. This extensive construction project is one with high health and safety requirements, including the undertaking of regular construction audits and adherence to stringent regulations.

Featuring close to 300 employees (including subcontractors), Crosstown Transit Constructors has over a dozen types of critical forms that field workers must fill out. Thus, according to Christina Lindstrom, Crosstown Transit Constructors Health and Safety Manager, the communication of information is a key challenge.

"We began the old fashioned way, with paper forms in the field, for everything from safety site checklists to surface engineering reports. But we knew there had to be a more efficient and effective way of communicating this data."

Through research and due diligence, Crosstown decided on mobile forms from TrueContext to speed up business processes and increase productivity.

"We tested out TrueContext and liked it right away. It was easy to see the value in mobilizing our forms in the field. We began our TrueContext rollout with approximately 15 users on iPhones and iPads, with plans to expand use."

Several of the TrueContext features have proven to be invaluable to the Crosstown data collection process, including offline functionality and photo capture.

THE NEXT STEP IN THE PROCESS IS WHERE CROSSTOWN IS REALLY SEEING GREAT ROI.

"Previously, paper forms would eventually make their way back to me. I would then have to review them for errors and perform time-consuming data entry or scanning. Before, the process could take up to five days. Now, forms are dispatched to all of management via TrueContext and the whole process takes an hour." The success of Crosstown's mobile form deployment has management looking at other processes in which TrueContext can be deployed.

"In an industry where safeguarding employees and the job site is paramount, TrueContext has greatly helped to streamline and speed up our health and safety data collection and reporting."

We use iPads in the field and underground, so the ability of the TrueContext application to function without network connectivity is huge for us. Our field staff fill out mobile forms. Then, once connectivity is established, the forms are sent from the App's outbox.

CHRISTINA LINDSTROM
HEALTH AND SAFETY MANAGER

Mobile Solution Provider Profile

ITERATIVE APPROACH

Look for a mobile solution provider that offers an iterative approach to designing, building and deploying mobile forms. This flexible process allows you to use a simple form as a starting point and iterate, test, make changes, refine, gather user feedback, and increase deployment on your own terms.

Your needs are likely to evolve as you realize the many benefits of using mobile forms, and your solutions provider should enable you to continually make changes to your mobile forms application.

CUSTOMER TESTIMONIALS

Customer testimonials are a good way to assess a company's capabilities, performance and reputation in the market. Look for a solutions provider that has experience deploying mobile solutions to customers of all sizes in different markets, verticals, and deployment environments. A breadth and depth of real-world deployment experience means there's a good chance they know how to avoid common mistakes and pitfalls that might befall a less experienced solutions provider.

COMPLETE SOLUTION & DEPLOYMENT EXPERIENCE

There are other signs you can watch for when choosing between mobile data collection providers. The leading mobile forms provider will have full solution capabilities for mobile data collection, a sophisticated administrative portal, workflow connectivity to the cloud, and analytics. It will be important for your mobile forms provider to have experience deploying and supporting the solution with an organization with your size, and in turn be able to offer a breadth of deployment and outsourced management services.

Look for proof that they have best-in-class customer support to protect against any pitfalls that could impede the success of your venture. Finally, when new features are released in your mobile platform, be confident that the solution will be able to incorporate those new dimensions into their apps so you can take advantage of these updates.

SOLUTION LEVERAGE

Finally, your mobile form provider should have top-tier partners, allowing you to leverage your solution with additional industry-leading solutions. These partners should be similarly positioned in the market to provide with top-tier hardware, software, and security

Industry recognition.
Look for mobile forms providers that have received recognition from independent business analytics and industry analysts for their solution's capabilities and the company's customer service.

Conclusion: Don’t risk settling for less

Environmental, health & safety incidents can have devastating consequences – both for business and for individuals. No organization can afford to use a data collection system that leaves them vulnerable to accidents, lawsuits, or terminated operations.

This white paper discusses the many considerations companies face when adopting a mobile data collection solution, and the conclusion is clear: the combination of iOS devices and TrueContext is the best option for companies looking to improve environmental, health & safety processes today.

The iOS ecosystem includes software, hardware, and services that have been designed to work together seamlessly – offering the best user experience in the industry. An iOS-based solution features not only best-in-class devices, but also an enterprise-friendly architecture, while its security features protect its users across devices, networks, and Internet services.

TrueContext, a proven data collection and analytics platform, offers a sophisticated and easy-to-use mobile solution that is transforming the way companies do business today. No other mobile forms provider has more experience and the company is frequently acknowledged by top-tier industry partners as a mobility leader.

“We use TrueContext on iPhonesand iPads in the field because the iOS platform is by far the easiest to use.”

JEFF PEEL
COO, PESADO ENERGY SERVICES

WANT TO SEE IF TRUECONTEXT CAN HELP MOBILIZE YOUR BUSINESS? **CLICK HERE**