



Adopting Enterprise Mobility in the Supply Chain:

How to Go from Paper to
Barcode Scanner to Tablet
with Mobile Apps.

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Executive Summary

The cost of enterprise mobility plans, security worries and technical management concerns function as key roadblocks to mobile-focused innovation. The result is an operational climate in which many businesses are still relying on old-fashioned, inefficient practices such as using manual, paper-based processes to support their day-to-day operations.

Implementing mobile barcode scanners and smartphone apps aren't just useful in their own right, they're also stepping stones to deeper digital strategies that are rapidly becoming necessary as businesses try to stay competitive in a fast-moving world.

Your organization may not be ready for the internet of things (IoT), blockchain, or augmented reality (AR) and similar cutting-edge technologies, but you might not have long to get ready, either.

Mobile devices have become commonplace in most office environments, but the same can't be said for many industrial settings.

There are plenty of barriers to implementing smartphones, tablets and comparable devices for manufacturers, including safety concerns, technical limitations and the cost and complexity of specialized ruggedized hardware.

These inherent challenges have left many organizations wary of mobile device use in their production, warehouse, and industrial environments.

Adopting enterprise mobility solutions is a critical enabler of sustained digital innovation. The time to finally move beyond manual inventory practices is now.



Benefits of Mobile Technology in the Warehouse

While organizations may be concerned about the cost and complexity of a mobility plan, the benefits can outweigh those worries. This is especially true as the technology continues to mature and become more accessible on both fiscal and technical levels.

Empowering users with mobile devices, be they barcode scanners or smartphones, allows organizations to digitize manual, paper-based processes. This allows for streamlined data flows between user groups so employees can react more flexibly to changing operational issues. In warehouse settings, this means being able to enact new strategies that take advantage of digital technologies.



A few benefits and opportunities organizations can expect when leveraging mobile devices include:

- ▶ **Faster data collection** contributes to productivity gains and allows fewer workers to get more done.
- ▶ Workers **spend less time** standing near shelves performing manual cycle counts, improving throughput in the warehouse and opportunities to move more assets, contributing to sales growth.
- ▶ Real-time data collection and integration fuels **greater visibility into asset dispositions** at a given time, allowing for inventory reduction and freeing working capital.
- ▶ All of these capabilities add up to **accelerate turnaround times** and improve the customer experience.
- ▶ A mobile-enabled ecosystem **reduces error rates** by eliminating manual data entry, reducing costs by eliminating avoidable mistakes.

Mobile devices can have a sweeping impact on warehouse operations, creating benefits that overcome the cost and complexity barriers that come with the technology. However, it's also important to understand that mobile-related solutions don't operate in isolation. Instead, they are serving as a critical bridge to continued digital innovation, something that is increasingly necessary as organizations work to compete in today's marketplace.

The Digital Revolution in the Supply Chain

Industrial organizations often operate with small margins. Over the past few decades, the move toward globalization has put immense pressure on even small manufacturers to compete on a larger stage. Fulfilling a single order may require connecting with:

- ▶ A raw material **vendor operating on a different continent.**
- ▶ A warehouse ecosystem that covers **multiple service regions.**
- ▶ A production environment that demands **flexibility and adaptability** that wasn't expected in the past.
- ▶ A fulfillment process that needs to **keep pace with shipping expectations** set by consumer e-commerce leaders, such as Amazon.

Major organizations that lead their respective industries have gotten ahead by using digital technologies to gain visibility into their operations across multiple locations and lines of business.

The global marketplace has now reached a digital tipping point, so much so that many pundits are declaring that a fourth industrial revolution is underway. Effective mobility strategies are essential to remaining competitive in this climate.



According to a 2017 report from the Forbes Technology Council, mobility may be the industrial equivalent of the “killer app” that organizations need to create more cohesive, digitally-enabled operations. While the details of this situation may be complex, the overarching themes are actually straightforward:

The internet of things (IoT), which refers to networked assets including sensors, connected appliances, smartphones, barcode scanners and similar devices operating in cohesive system, has gained a strong following in industrial settings because it enables organizations to connect devices so they automatically communicate key data to relevant stakeholders.

A specialized Industrial IoT (IIoT), a term that refers to IoT solutions designed specifically for use in industrial environments, has also emerged as a low-cost opportunity for digital innovation. Embracing digital technologies creates transparency into everything from sales to production and fulfillment, allowing manufacturers to adopt service-oriented business models that emphasize customer relationships.

However, businesses that have not adopted mobile devices and related technologies leave their users unable to take advantage of the IIoT. There is still a major gap between the raw data collected by the IIoT and the users who need that information. This is creating a mobility gap in which employees can't get the right data at the right time and are scrambling to keep up with information they need to manage and consume on a daily basis.

This mobility gap is serving as a major barrier to sustained innovation for industrial organizations, Forbes explained, but investing in contemporary mobile tools can become a catalyst for digital progress by bringing benefits on their own while laying the foundation for continued innovation.

Mobile-focused investments can drive sustainable operational gains and help smaller industrial businesses implement the kind of lean strategies they need to compete in crowded marketplaces. And the process begins with connectivity.



Connectivity Lays Groundwork for Mobility Plans

The IoT and IIoT can combine with widespread internet access to transform how businesses operate. A 2015 study from the World Economic Forum (WEF) indicates that the internet has been one of the most disruptive forces impacting entire industries over the past decade. Moving forward, the IoT has the potential to be disruptive to a similar degree.

According to the WEF, the IoT can be used for strategies that drive operational gains, allow for more robust connected operational environments, fuel human-machine communication and allow for an economy that shifts focus away from production to put greater emphasis on the customer outcome.

Adapting in this environment requires innovation in a variety of segments, but businesses can set themselves up for success by emphasizing investments in solutions that take full advantage of industrial internet capabilities. While broadening connectivity can be daunting, it's a critical component of advancing digital initiatives and remaining competitive.



From Connectivity to Mobility

Connectivity is an enabler for digitization in the supply chain, but mobility is the catalyst for digital transformation. On its own, connectivity will make entry-level IoT projects an option and let you put workstations in a wider range of locations. While useful, these aren't really groundbreaking steps. Mobility strategies take the connectivity at the foundation of the industrial internet and makes it actionable for users across every component of the supply chain.

Warehouse workers performing a cycle count can check historic data to pin down a supply error. Production managers can instantly view supply information when a manufacturing hiccup arises. Remote warehouses can function as part of a larger connected ecosystem without missing a beat because employees are using an enterprise resource planning (ERP) app that covers all facilities. These types of advances empower businesses to trim the operational fat that holds them back.

Paper-based processes are the last great barrier to this kind of operational vision. Taking the first steps into mobility strategies is becoming critical, regardless of where you stand in the digital transformation movement. An IDC study puts this in perspective. Discussing the research, Shawn Fitzgerald, global research director for Worldwide Digital Transformation Strategies at IDC explained that digital innovation is an iterative process. As leading organizations constantly develop more mature digital experience models, the gap between the companies that are simply surviving in today's climate and those that are thriving is growing quickly.

It's vital that businesses don't look at cutting-edge technologies as a distant vision that doesn't align with their business. Change is happening too quickly. Mobile devices and the systems that support them create the flexibility needed to keep up with constantly shifting technology ecosystems.



Understanding the Pace of Digital Change

Emerging technologies are making advanced digital solutions more accessible than ever, leading to rapid adoption of new solutions. Industrial organizations can't afford to sit back with traditional processes and expect to remain relevant in their market spaces. The global market is already experiencing significant impacts:

The IIoT market is expanding quickly:

The global market for IIoT solutions will grow by over 70.1 percent in 7 years, increasing from \$115 billion in 2016 to \$197 billion by 2023, Allied Market Research found.

Augmented reality (AR) is on the rise:

BIS Research found that the global market for augmented reality was valued at \$3.48 billion in 2017, but will grow to \$198.17 billion by 2025, achieving a massive 65.1 percent CAGR.

Industrial wearable devices are emerging:

Between 2018 and 2022, the global market for industrial wearable devices is estimated to expand by 11 percent CAGR, Technavio found.

New technologies aren't just emerging, they're exploding onto the scene. If you're left still using paper for day-to-day supply chain operations, you may have already fallen behind.



Embracing Mobility in the Supply Chain

Mobile devices take many forms: smartphone, tablet, barcode scanner, voice-picking headset, augmented reality-enabled safety glasses — the list goes on. Implementing a mobile strategy isn't just a matter of deploying devices, it's about creating an ecosystem that empowers users to interact with data in more intuitive, flexible ways. At **RFgen**, we specialize in building out mobile data collection solutions and offer organizations a combination of technologies, consulting and support so they can develop end-to-end mobility strategies.

In most cases, organizations will begin to implement mobility plans by focusing on specific pain points in their business and investing in a solution. For example, you may:

- ▶ Try to **reduce cycle count** and inventory management workloads with barcode scanners.
- ▶ Support **a multi-warehouse setup** using a mobile-enabled remote management platform.
- ▶ Improve **safety and efficiency** with **voice picking**.
- ▶ **Align field services** with work being done at headquarters with mobile barcode scanners.
- ▶ **Track fixed assets** with barcode labeling and scanning.

Mobile-focused strategies can seem overwhelming when you try to do everything at once. Choose a few key projects that are more manageable and you can set yourself down a path of continued innovation.



As you implement more mobile-related solutions, however, you'll need to develop strategies to bring information together under a common umbrella. Usually, this will be through your ERP system.

RFgen can assist in this process by using our ERP integration software that connects data between mobile apps and ERP systems to bridge any data gaps that may arise if you do embrace mobility without making supporting investments.

Ensuring your mobile strategies are bolstered by the right secondary technologies is critical. For example, it is vital to ensure that the mobile apps you deploy are certified as able to interact with enterprise business systems, such as an SAP ERP.

Non-certified apps come with complex and expensive integration requirements that can limit the value of your mobile strategies. Working with solution providers that are certified to work with enterprise ERP solutions can bring the blend of experience and expertise needed to embrace mobile apps and connect them with the rest of your enterprise systems.

If you're still relying on paper, the time has come to move on. **RFgen** specializes in the kind of **mobility solutions** that are **safe and valuable for use** specifically in industrial settings.

Contact us to learn more about what we can do to support your digital and mobility strategies.

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