



5 IoT Worksite Myths Busted

Devices with some form of data collection functionality have flooded a variety of markets. They're in our cars, on our wrists, embedded in our phones, powering our medical devices—the list goes on. These devices can track not only physical location but also biometric data. Even among concerns related to privacy, security, implementation, maintenance, and durability, usage numbers continue to rise.

In 2014, 28.8M wearables were shipped worldwide. In 2022, that number has exceeded 533.6M, representing a 20% year-over-year increase from 2021.

Data collection devices are slowly making their way onto construction and industrial worksites in the form of safety wearables and video monitoring devices. There's a lot of value in tracking movement and behavior. Ignorance was never bliss. **But before you choose a technology product or service, it's critical to ask the hard questions and make informed decisions.** It's also equally important to separate fact from myth, and when it comes to worksite IoT solutions, there's no shortage of misconceptions to unpack. This ebook will help you do that.



Top 5 myths about worksite IoT solutions

- 1. Violate worker privacy**
- 2. Require complicated, disruptive implementations**
- 3. Introduce maintenance and management hassles**
- 4. Pose a significant cybersecurity risk**
- 5. Lack the durability needed for rugged industrial environments**



Myth #1: Worksite IoT solutions violate worker privacy

Workplace productivity, which has declined in recent years, cannot be optimized without data gathered to establish baseline metrics. While data collection options promise improvements in both productivity and workplace safety, they can raise concerns around employee privacy. While many individuals choose to wear a fitness tracker to help achieve a personal goal, they often raise concerns when their activity level is monitored as a condition of employment.

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A frequent argument against worksite wearables is that they grant a company complete visibility into a worker's physical location—on and off the jobsite. What's to stop a corporation from tracking location outside of the jobsite and/or work hours? The best way to assuage these fears is to ensure that the only location data gathered is on-site.

It's also very important when implementing these tools that you are gathering data at a level that makes sense. If you don't need to identify individuals, you may only need to leverage computer vision for aggregate trends. If you need general location data, don't use GPS pinpointing in unnecessary areas (like the restroom).

Choosing a data collection partner who values privacy

When selecting a technology partner, it's critical to **choose a safety and productivity approach that both honors employee privacy and keeps personal information safe**. It is important that everyone at your organization understands—and feels comfortable with—exactly how the technology gathers and stores information. Otherwise, no one's using it.

Data collection privacy really comes down to two questions:

1. **How is information collected?**
2. **What is it used for?**

Establishing a data governance and ethics policies around these data is essential. Documenting and sharing this policy with your workforce is critical. The policy should outline appropriate and inappropriate uses of the data and can even go as far as consent policies (i.e. biometrics in Texas).

How Triax Technologies handles data collection

At Triax, we consider **privacy a non-negotiable** for safety wearables and other data collection methods. Our solution is designed for worksite visibility only. The proof is in how we collect data.

The invasive way: Using GPS, a company could theoretically track workers beyond the job site. Through trilateration, cellular networks create a connection for GPS satellites to gather position data.

The Triax way: By contrast, our network is localized, meaning it doesn't make use of any GPS or cellular network. Instead, 900 MHz replaces the cellular network. And instead of connecting to satellites, we place nodes around the jobsite to determine location. If a worker isn't physically close to one of these nodes, there's no way for the tracking device to communicate or triangulate to determine their position. Outside of the work zone, our wearable device is not tracking anything about the employee.

Respecting **employee privacy** is a core tenet of our solution. We're proud to have over **100,000 devices deployed**, with almost half on unionized workforces. With any technology solution, it is critical to work in collaboration with your workforce and be realistic. Talent is harder than ever to find. Leveraging our data should ultimately serve to make jobs safer and more productive. There is far more to gain from understanding how we are in the way of our workforces' productivity than in policing and micromanaging.



**More than half of Triax devices
are used by unionized workforces.**



Myth #2: Worksite IoT implementations are too disruptive

A **workforce productivity platform promises** many exciting benefits including identification of trends that impact worksite productivity. This can quickly lead to a significant reduction in costs and can also identify opportunities for key safety interventions.

But how do you capture the data needed for trend identification? Does the pain of implementation outweigh the positive outcomes?

Worksite IoT deployment

Data collection methods, including wearables and computer vision, at their core, are IoT devices. With **14.4B active IoT connections** in the world right now, there are plenty of cautionary tales when it comes to implementation challenges. For industrial sites, a less than smooth deployment can mean months of interruption as contractors install wifi access points and run power. That's not to mention the millions of dollars lost to setup costs.

When choosing a technology partner, it's important to take a close look at how the solution achieves connectivity and how far you'll be from return on investment (ROI) once the data collection technology is deployed on site.

Questions to ask before implementing a worksite IoT solution

IoT is positioned to **significantly increase worksite safety** and workplace visibility for multiple industries. Labor productivity and activity data is often hard to capture in rugged environments. Here are some of the questions you should ask when choosing an IoT solution for your worksite.

How will an IoT productivity platform help my team?

Before IoT into your worksite, develop a clear strategy to assess whether it will enable fundamental improvements to the problems you want to solve. **Are you over budget on labor** and unsure why delays continue to occur against key milestones? Engage with the relevant key stakeholders and begin to address the impact IoT technology can have on daily operations. Think about how you might reallocate resources once you begin to recognize gains in productivity and safety.

How does IoT help us outperform the competition?

When choosing an IoT worksite solution, look for indications that implementing a technology would result in long-term returns and **competitive advantage**. IoT technology can provide access to a new pool of data the competition is likely unable to gather. Be sure to ask potential partners how their platform can be utilized to gain valuable insights into hard-to-capture data.

Does your provider work with multiple heavy industrial and energy clients?

With such a wide range of IoT provider solutions, it is common to come across providers who aren't specific to your industry. Take time to ask your potential provider for case studies on their IoT solution that match your industry. It is imperative to work with **a provider who not only understands your industry but also fosters a collaborative relationship with your business.**

How long does the IoT technology implementation process usually take?

The average time-to-market for many IoT technology implementations is 18-24 months. But that's just to get started. Depending on the type of IoT solution at play, ROI could be years away as you work toward reaching critical mass.

At Triax, we pride ourselves on fast, painless deployments. Many are completed within a week, and our clients can expect to fully deploy in under a month. **Once our solution is implemented, our clients often see the results in less than a quarter.**



Many see a 10x ROI, meaning that our product often costs a fraction of the money it saves companies in labor productivity on site.

18-24 months

Average time-to-market for IoT technology implementations

< 1 month

Triax clients experience full deployment in less than a month

What are some challenges and delays during IoT implementations?

With any implementation, there are a number of technical elements at play. Data can be collected in a variety of ways (including a wearable device or facial recognition camera) as a sensor, that is then shared across a network and processed by a SaaS system. In other words, there are more moving pieces than meets the eye.

We can think about IoT data capture options across 5 key components:

1. The device itself
2. Communication across a network
3. Cloud services
4. Applications
5. Security

Second, implementation doesn't automatically mean adoption. Plugging in a wearable data capture device doesn't mean people will use it properly—or at all. You'll need buy-in from key stakeholders and clear change management messaging for users on how the solution works, why you're adopting it and what they will need to do differently moving forward.

At Triax, **we take the time to understand our clients' business.** We then leverage our 10+ years of expertise to advise them how they can best use our solution to their advantage. When we move to installation, **everyone is prepared to execute** as efficiently as possible. In terms of physically placing network gateways to enable data capture, we also have a set formula based on the size of a site to help determine hardware requirements for optimal data collection.

We can deploy in several ways, from a virtual installation to a full on-site service with a small crew. **The process is streamlined, fast and requires minimal IT involvement from your team.**



Myth #3:

Once implemented, worksite IoT solutions are too difficult and time-consuming to manage and maintain

Once a worksite IoT solution has been implemented, **how much work will you and your team have to do to manage it?** How do the data capture devices charge—and for how long? How likely are they to malfunction? Will your IT staff be overrun with connectivity issues and other support requests?

It is essential to vet the power and support requirements of every solution option—and make sure they meet your specific job site needs before selecting a solution and/or provider.

How often will IoT data capture devices and networking components need to be charged?

Adequate power cycles are not a given when it comes to IoT devices. Wearables, like any other consumer-friendly technology, are only getting smaller over time. Remember the original size of a cell phone? Consumer demand dictates that as a device's data collection sensor functionality becomes more advanced, the size and weight shrink.

The demand for low-power solutions for IoT devices is high. A common concern: smaller or “miniaturized” pieces of technology, particularly ones with sensors like a safety wearable, generally don't leave much room for a battery that can accommodate the power drain. If your safety wearable runs out of battery every few hours, you won't be able to

meaningfully track productivity and safety across the worksite to gain actionable insights. **Without reliable data capture and networking capability, the business and safety value ROI of the solution evaporates.**

At Triax, our **device power cycles span for months**, not days like a cell phone. Additionally, your workers also won't have to deal with constantly charging the device. Our devices are also completely solar and battery-enabled, so you don't have to worry about excessive electricity drain that would complicate daily use and/or your ESG targets.

How durable are IoT data capture devices?

In terms of maintenance, **durability is extremely important** in data capture devices, from facial recognition cameras to wearable technology sensors and equipment tracking tags. Workers in industrial environments aren't typically at a desk, but instead perform challenging manual labor in environments that can be high-stress and high-risk. The devices have to be able to withstand reasonable wear and tear. In many environments, there's also a **requirement around intrinsic safety**. Will the data capture devices, including wearables for workers, meet this requirement?

Design matters. If thousands of workers are wearing a device and there's a design flaw or equipment defect, you could have to correct that issue thousands of times. If maintenance becomes too time-consuming and/or costly, the solution cannot provide the ROI that warranted the investment. Adequate support and clearly established protocols for accessing that support through your provider are key.

At Triax, we offer device maintenance as an ongoing service to our clients, so your IT team can focus on their core responsibilities. We're also easy to reach with a single point of contact so the support process is always seamless.

What level of maintenance will be required?

Maintenance is a crucial consideration when choosing any IoT solution—perhaps especially in the industrial field. You must be sure that you're collecting continuous data from workers and equipment on your site during working hours.



Myth #4:

Worksite IoT solutions pose a significant cybersecurity risk

Safety wearables gather critical information from industrial sites and provide data to project leaders for bottleneck identification, safety risk mitigation, increased labor productivity and more. But as **cyberattacks become more sophisticated and frequent**, the pressure is on to protect personal identifiable information (PII) and make sure IoT devices don't jeopardize your organization's overall security posture.

When choosing an IoT solutions provider, it's important to pay attention to what type of information is collected and stored—and what **safeguards are in place to ensure both compliance and layered protection**.

The potential downsides to IoT data collection

While it holds a wealth of analytical potential, data must be protected. **In 2021, data breaches exposed 22 billion records, and 54% of companies say their IT departments are not prepared to handle sophisticated cyberattacks.** Once personal information has been exposed, companies can face significant compliance penalties and other costs—not to mention the more intangible **loss of brand equity and trust**.

The cost of a **data breach has increased 2.6% from 2021 to 2022, now totaling \$4.35M**. IoT data collection devices often raise questions around security risks, since infiltrating the device can then connect cybercriminals to broader networks and databases at an organization. From January to June 2021, there were 1.5B IoT breaches. Moving forward, the amount of **shared data on connected devices is expected to reach 73.1 zettabytes by 2025**, making IoT solutions an enormous source of valuable information.

Your cybersecurity checklist when evaluating IoT wearable solutions

As you evaluate safety wearable solutions, keep the following four areas in mind to make sure your partner can provide the strongest security posture possible:



PII

Are the safety wearables collecting information that can be matched to a personal identifier? If so, you will have to make sure you are complying with all industry regulations and laws related to PII. Triax safety wearables, by contrast, can have no identifying data, just serialized interactions. If they don't capture sensitive PII, you don't have to worry about how sensitive information is being stored, leveraged and protected.



Encryption

Encryption is one of the most important safety measures for protecting data in transit and at rest. Using cryptography, encryption basically scrambles the meaning of data, rendering it unintelligible to anyone without the proper encryption key. When data travels on the Triax network, transmissions are encrypted locally and again when that information reaches the cloud for processing and storage.



Network vulnerabilities

When devices connect to your network, they create an endpoint. Cybercriminals could potentially infiltrate that endpoint to access your broader network. That's why the data collected, sent, shared and stored from Triax IoT wearable devices never touches your local IT system. Instead, integrations happen through an API, leaving your existing systems untouched.



Certifications & audits

A reputable SaaS provider should be able to detail how they regularly audit their processes for handling customer data. SOC certifications, the industry gold standard, require an outside audit that confirms the reliability of a vendor's systems and/or their operational effectiveness when handling data. Triax Technologies is SOC2 certified and has passed multiple security reviews with some of the largest energy companies, including governmental cloud requirements.



Myth #5: Worksite IoT solutions aren't durable enough for rugged environments

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Labor productivity data collection promises big benefits for many worksites from construction to energy and manufacturing—but can existing platforms really deliver on those promises?

In addition to concerns around worker privacy, cost of implementation, maintenance requirements and data security, there's the necessary wear and tear that comes with any industrial workplace setting.

When selecting an IoT technology partner, you need to make sure that physical **components can both hold up to the stressors of the worksite and deliver measurements that can translate to actionable insights for your business.**

The cyber-physical components really depend on the physical

Labor productivity data collection typically takes the form of a cyber-physical system, meaning it uses physical equipment, like wearable devices and connectivity nodes, to draw measurements from the physical world with the goal of deriving analytical insight. On the cyber side, software and cloud connectivity allow you to **process, store and analyze the data** collected from those devices.

The value of the system depends on the **reliability and consistency** of the physical measurements, since they power the insight you will use to pinpoint how you can improve productivity and safety on your worksite.

Consider durability from every angle

When evaluating a technology offering, make sure you're thinking about durability from a range of perspectives.

A few of those could include:

Wear & Tear

Can wearable technology stand up to harsh environments?

At Triax, our labor productivity collection platform has been proven in a variety of rugged industrial environments. From manufacturing to construction to oil and gas and more—Triax has got it covered.

Connectivity

How reliable are the satellite and cellular networks in your area? Can you afford to rely on them for long-term data collection? What happens if they fail?

To eliminate these concerns, our platform relies on a 900mHz proprietary mesh network that can capture data when cellular and/or satellite connectivity fall short or are too expensive to sustain.

Power

How often will you need to charge hardware components? Will you be able to consistently collect the data you need?

Our IoT wearable devices, for example, are fully rechargeable and use TAG batteries that last for 6+ months.

Time-to-value

Raw data provides little to no value to your organization. It has to be organized and contextualized into insights that you can both trust and act on to create safety and productivity benefits.

Once installation is completed, our IoT platform immediately begins gathering and synthesizing data to deliver actionable insights related to your worksite.





Reap the benefits of a worksite productivity platform with the right partner

There are plenty of **misconceptions surrounding worksite IoT solutions**, and depending on the solution you choose, some of them might prove factual. That's why it's so important to properly vet all of your potential solutions partners on privacy policies, deployment, maintenance requirements, cybersecurity and durability. With the right partner, challenges are nothing more than myth—and you can begin gaining the valuable insights you need to improve **both labor productivity and safety** on your industrial site.

Ready for an affordable labor productivity data solution that pays for itself in ROI?

Discover **Spot-r® by Triax**, a comprehensive worksite solution platform that offers a proprietary blend of IoT devices, networks, applications, and insights to capture, synthesize, and act on field data. **Contact us today or request a free demo to gain access to unparalleled workplace safety & visibility into your labor analytics.**



Learn More

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