



# Turning IOT Data into IOT Intelligence

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The Internet of Things (IoT) is unarguably at the center of workplace digitization and enhancement. The definition of IoT is not limited to just the internet connection of devices all around us, it also expands to encompass the platforms of software and databases that manage, analyze, and present this massive amount of data.

IoT is said to become the **4<sup>th</sup> Industrial Revolution** and is on its way to being exactly that. It has proven to be effective and implementable, yet we are at only the very beginning of this technological journey.

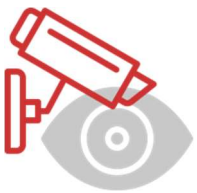
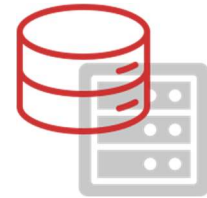
**IT IS ESSENTIAL TO REALIZE THAT THIS IS A STARTING POINT IN THE VOYAGE WHERE WE CAN BEGIN TO MAKE THE MOST CRITICAL DECISIONS FOR SUCCESS.**

The momentum of the IoT transformation is truly colossal and expands into the largest companies in the world with extensive investments. Despite this momentum, all the hurdles with IoT are far from resolved. What seems to be the most popular topics in this regard, is how to implement the various aspects of the technology effectively and efficiently. This is certainly a more than worthy topic and there are numerous challenges still to be worked out.



Infrastructure investments and convergence issues, the problem between physical layers of communication such as wired and wireless methods of communication and how the data transmission can be structured and uniformly ingested.

Data normalization issues, such as aggregating data from highly disparate sources and conforming it into a universally understood rule set so it can be transformed into an actionable format. There is certainly much work to be done in this area because it is a merging of multiple industry silos; IT, facilities, human resources, and others all have data sources that need to be understood by one master aggregator.



Data privacy challenges, how to protect personal data ethically and in line with regulations. Potentially most transformative is how to manage individuals' preferences in regard to anonymization, distribution, and purpose without implementing in a way that skews the results efficacy.

Data security is of course a well-known concern and is an area where improvements are being made in positive directions, but the byword in this case is diligence. This diligence requires us to never be satisfied with the status quo and to never lose focus on protecting commercial and private assets.



Each of these topics warrants, and receives, extensive research and ongoing discussions. The challenge, however, that should be addressed before any of these issues is:

## **To what end are we implementing these massive projects of infrastructure and data?**

The intrinsic benefits of IoT are not in question. Results have been clearly established and many are now reaping plentiful rewards in improved efficiency and other areas. Certainly, there is value to be had from aggregating sources of data from multiple entities in a business process, for a simple view of organization and structure with the purpose of more efficient process management.

The industrial market has demonstrated this in assembly lines and other processes that are able to profit from global synchronization, artificial intelligence, and digital simulations.



What needs to be embraced is that **the possibilities of IoT are more than simple process improvements**. If we think about what really matters in the workplace; the people, the environment, and our financial bottom line, we have yet to focus our efforts holistically on any of these three apex areas to the extent that is possible. The answer to this is not just more data sources and dashboards. There is more required if we want to impact the business in a vitally positive way in the most critical areas: **people, planet, and profit**.



One way to understand the issues we should be addressing with IoT visibility and decision-making, is the fable of the blind men and the elephant. Most have heard of the tale of a king who brought an elephant to blind men and asked each to surround the elephant, touch it, feel it, and then describe what it was that was in front of them. Each blind man described the elephant in a completely different way. One said it was like a tree because he was feeling the leg, one said it was like a rope because he had hold of the tail, one said it was like a snake feeling the trunk, and one said it was like a wall touching the side of the elephant. All the blind men gave a different answer on what an elephant was, based on what part of the elephant they happened to be touching.

We can view the described IoT dilemma in a similar way. While we can bring data from different facets of our facilities, systems, processes, and even employees into a very easy to use visual dashboard, the question is:

**Are we really seeing the complete story to be able to make the correct conclusions?**

We treat IoT as if it is an all-encompassing data collection, but in reality it is still capturing just a small portion of the reality we are trying to interpret.



IoT is a tool and like any tool it can be used in any variation of effectiveness. It is not that IoT is incapable of assisting us in telling a complete story, rather it is that more human knowledge, experience, and proper perspective needs to be incorporated into what we are capturing and why we are capturing it. In addition, a laser focus to the importance of data in relation to the decision we are making and whether it is the right information to make that particular decision.

An example instance could easily be imagined is that an executive decides to install occupancy sensors to office desks so that the leadership can see how frequently the employees are performing their work. This resulting metric would deliver the hours spent at desks per person at an aggregate or average level and show how things were improving based on other actions they were taking. On the surface, this seems like an immensely powerful and actionable key performance indicator to utilize in decision making. What is missing in this equation is the psychology of people themselves. Individuals make decisions and emotionally react based on how they are being managed and monitored, especially in the workplace. As an employee who is being clocked on time at their desk, you can imagine that they would be driven to sit for longer periods of times regardless of the productivity outcome of their work. Just the fact that they are aware that they are being tracked, influences their productivity, and could likely result in decreased productivity. This makes this metric for decision-making purposes almost completely ineffective and at worst, could lead to false conclusions and incorrect insights.



**AS IoT ADOPTION GROWS, IT IS CRITICAL THAT FOR EVERY STEP IN THE PROCESS, WE ALIGN OURSELVES WITH HOW DECISIONS WILL BE MADE BASED ON THE METRICS WE ARE CAPTURING, AGGREGATING, AND DISPLAYING TO BE USED BY EXECUTIVE LEADERSHIP FOR CRITICAL BUSINESS DECISIONS.**

This makes finding a **trusted technology partner** the most critical portion of any IoT project by far. Technology is very accessible and while there are challenges and hurdles still to overcome, it can be thought of as a foregone conclusion that they will soon be resolved. We can look at history and see that as technology progressed, and care is not shown, the results can be devastating.

We should all examine our IoT projects, understand the whole story by expanding beyond organizational silos, and holistically scrutinize the situations we are solving for.

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About the author: Jason Whipple has 20 years of experience with CRE systems engineering and managing integrated building solutions for Fortune Global 500 companies. Jason has worked on designing and building multi-discipline integrated eco-systems capable of meeting customer's short- and long-term needs and has practical experience delivering enterprise-level OT and IT convergent frameworks. Jason prides himself in developing creative ways of combining Edge and Cloud based solutions for optimum systems performance to result in tangible ROI, and architecting integration platforms that are able to quickly adapt to new technologies and ever-changing business needs.