

Why IoT: 4 things business leaders need to hear from developers

As more and more companies embrace and innovate with the Internet of Things (IoT), they're gaining a head start on their competition, as well as building business value. Meanwhile, less agile companies are falling behind.

Developers are in a unique position to see the possibilities of IoT, and to communicate that to business leaders so that, together, they can move IoT initiatives forward.

Over many years of creating an IoT ecosystem side by side with thousands of customers, we've identified patterns that tend to correlate with success.

"When problems arise, it's usually not due to technology but instead due to a lack of communication and collaboration between technology and business teams. When the right people aren't working together, the following can happen:

- Wasted time and budget
- Value that is difficult or impossible to measure
- Poor user experience and adoption
- Security holes

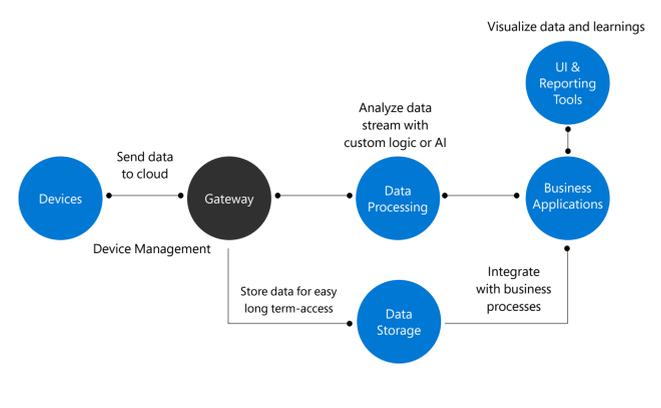
On the other hand, we've observed that effective communication and mutual understanding between teams is a hallmark of successful IoT projects. This guide provides insights distilled from our experiences. It's meant to be actively used and shared as a guide to productive conversations with your business counterparts.

Start with the end in mind

One smart city initiative succeeded in connecting traffic lights to the cloud. The project was declared a success initially, but two years later, the city still hadn't figured out how to improve traffic using its connected signals.

Consider the complete IoT value chain

Something else the smart city stakeholders failed to consider is that IoT is more than just connected "things." They didn't plan for the other critical components: insights and actions. Each step has its own set of technologies associated with it, and they all have to work together well.



01

Choose your action

There are multiple ways to use data insights from connected products.

Companies with a clear idea of their desired approach are a step ahead. Typical actions include:

- Examples:**
- 01 Reporting**
Viewing equipment performance and status in real time
 - 02 Integration**
Automating business actions such as customer notifications
 - 03 Control**
Managing equipment and operations

Instrument for success

In addition to collecting telemetry and operational data, there's a great benefit to collecting other data that can be used to support the business case, whether it's number of users, length of engagement, device uptime, production yield, or compliance status. Knowing what you intend to measure makes it easier to incorporate instrumentation early, rather than having to bolt it on later.

Question to ask your business team

- Who are the executive sponsors of this project and what are their expectations?
- What are the top business outcomes you're looking to get out of this solution?
- What metrics will be used to judge success, and how do we get them?
- Have the costs of various approaches been thoroughly evaluated?
- Are there existing reporting mechanisms or scorecards we need to integrate with?
- Which existing investments can we leverage to get this done?

Understand the impact

Seeking to increase sales, an ice cream manufacturer designed an IoT system that tracked how long shoppers took to choose a product and what they bought, and then responded with custom coupons and social offers displayed on a screen. Unfortunately, store chains refused the system. They were concerned that it would negatively affect shoppers' experiences because it took up too much space in the aisle, was not compatible with the stores' existing systems, and made offers they couldn't support.



Know the user

Getting users to adopt any new technology can be challenging. With IoT applications, getting the user experience (UX) right can make the difference between success and failure. Standard UX best practices such as user interviews, testing, and experience design can help address this challenge in an orderly fashion.



Investigate in-depth

IoT crosses traditional silos of operations, IT, and the business. Projects gain speed when teams have a good idea of which systems, people, and processes will be affected early in the design of the solution. This is software best practices 101, but it applies equally, if not more, to IoT projects.

Question to ask your business team

- How are target users doing tasks today, and how will the IoT solution change that?
- How can we get those users involved in shaping and testing the solution?
- What are the potential barriers to adoption?
- Which business processes could be affected by the adoption of IoT?
- Are there technical or process changes that need to be made outside the implementation of the IoT solution itself?
- Will partners or vendors be affected by this change? How do we work with them effectively for a smooth transition?

Involve your stakeholders

An automaker wanted to connect its assembly line to enable predictive maintenance. IT delivered a solution that required shutting down the equipment during software updates. The operations team rejected it because the factory would lose \$1 million per hour of downtime. The operations team delivered a solution that didn't use standard security protocols, so IT vetoed it. The project stalled indefinitely.

Build a broad team

Teams that identify and proactively engage a broad set of stakeholders not only get better buy-in, but better outcomes. As demonstrated by the automaker example, a strong working relationship between IT and operations is especially important.

Other teams that typically make strong contributions include:



Data scientists and business analysts, who deeply understand the company's data



Sales, marketing, and business teams, especially if it's a customer-facing application



Partners and vendors, who can offer invaluable shortcuts to effective IoT

03

Address fears with a proof of concept

For most business decisionmakers, IoT is an unknown quantity. They may worry that it will take forever, go over budget, and not deliver results. One proven way that IoT leaders overcome these barriers is to start with a

proof of concept. Cloud-based technology makes it easy and cheap to start small with IoT. Sometimes connecting just a few devices can make the way forward much clearer and help identify problems early.

Question to ask your business team

- Who are the executive sponsors of this project and what are their expectations?
- Who needs to sign off on this solution before it can go live?
- Are the operations and IT teams aligned, and are they set up to collaborate closely?
- Which departments have a stake in the success of this solution and how can we work most effectively with each of them?
- How will we communicate with stakeholders about the progress of the project and give them the ability to provide input?
- What's the minimum viable solution we could use to start a proof of concept?



The right partner can make all the difference

Because IoT involves a wide range of technologies and crosses organizational boundaries, it is one technology area where an experienced partner can greatly accelerate your endgame.

Microsoft understands how enterprise businesses work as well as the challenges that can get in the way of IoT success. We've designed solutions that empower you to

overcome them by accelerating development, keeping costs manageable, and delivering clear value. Business leaders know and trust Microsoft, which can make your path easier. Plus, we have a huge partner network that can help you solve your unique challenges.

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