



UNLOCKING ROI

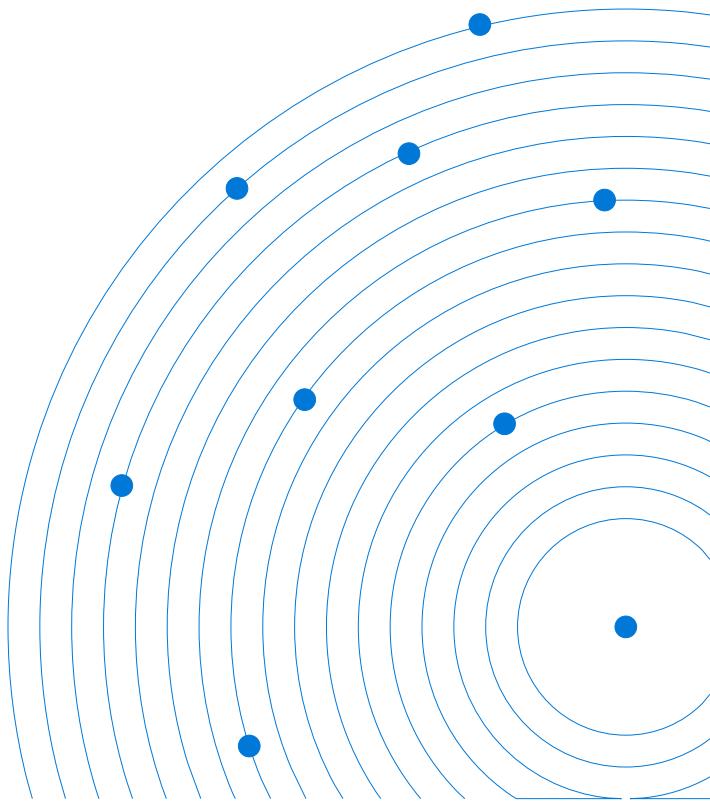
How to reduce complexity and get more value
from the Internet of Things

February 2019

 Microsoft

Contents

Introduction	3
Every successful IoT project begins with a solid foundation	4
Do you have executive and stakeholder support?.....	4
Do you have a clear business case?.....	4
Are you keeping the larger strategy in mind?.....	7
Can you quantify the business value?.....	7
Maximizing ROI requires effective execution	8
Are you developing your business and technical strategies in tandem?.....	8
Are you thinking about costs the right way?	8
Should you pursue an MVP or a PoC?.....	9
How can you extend the value of IoT beyond your initial project?	10
Conclusion	11
Take your next step today.....	11



Introduction

You're probably well aware that the Internet of Things (IoT) isn't just a trend—it's a key element of digital transformation strategies. You don't need to be convinced IoT is important, or that it offers a connected world and business evolution. You've heard it all before, and buzz words don't matter. You're busy answering a more important question: how do you get the most value out of your IoT investments?

Let's be honest, many IoT projects fail for one simple reason: companies treat them like technology projects instead of strategic initiatives. Too often, organizations rush to take advantage of IoT without thinking through where it can add real value, leaving them with an ambitious—but ultimately useless—science project. To maximize your IoT investments—and ensure your project won't stall out—what you need is an approach centered around delivering business value.

At Microsoft, we've learned a lot working with companies like yours. Our partners and customers have told us what works and what doesn't. Many discovered that what may seem obvious is often overlooked. In this paper, we'll pass along the insights they've shared to help you get the most out of your own IoT initiative. While you may have heard some of this before, or even used a few of these best practices in other business initiatives, we can't stress enough how important it is to understand how these practices impact your success with IoT.



Every successful IoT project begins with a solid foundation

Do you have executive and stakeholder support?

As you're aware, stakeholder support is a key component of getting started with IoT. Like many strategic projects, IoT projects often live and die based on their executive and stakeholder backing. But IoT can be tricky, as many of our customers have discovered. Because it's a critical step forward for your business, you'll need alignment from across the company—even those you might not expect, such as marketing, sales, customer support, and other operational groups. And let's not forget executives. Without strong executive champions, your IoT project is destined for a short lifespan.



“

The advice I would give any organization is first and foremost, understand the problem. Fall in love with the problem, not the solution.”

Shane O'Neill,
Enterprise Infrastructure Architect and IoT Lead, Rolls Royce

Once your stakeholders are assembled, make sure to involve them in business case discussions and strategic planning. This is a good time to develop a clear set of guiding principles collectively, such as a commitment to making data accessible to everyone in the company, or a goal of understanding more about your customers in order to improve their experience. Adhering to a set of principles will enable stakeholders and the company to prioritize the critical aspects of the engagement and prevent you from getting distracted by smaller business or technical challenges. If you don't get the right heads nodding here, the eventual outcome probably won't match your objectives. However, if you can all agree on a compelling business case and determine the value you want to achieve, you stand a better chance of avoiding the common blockers to an IoT project: the project isn't prioritized, there isn't enough money, or it's considered a "nice to have." Bottom line: if you don't get the right stakeholders and executives in the room from the beginning, then you won't be able to drive a successful engagement and you might not even be ready to talk about IoT.

Do you have a clear business case?

You won't be able to drive a successful project unless you start with a business case that matters. While most business leaders have the best of intentions, IoT projects often struggle because they approach IoT as a technical challenge, rather than a business one. They focus their time and efforts on the technology—will my devices connect? Is my software up-to-date? These are important questions, but they need to be asked in the context of the business strategy. Instead of technical issues, your initiative should be driven by a compelling business objective. Without a "so what" fueling your strategies, your initiative will lack focus and fail to deliver results. In fact, 70% of IoT projects fail because of poor planning in the initial stages.¹ While your overall objectives will depend on your unique use case, organization, industry, and countless other factors, there are some useful ways to think through the business case you want to tackle.

To best determine your desired outcome, it's helpful to begin with a business problem statement that clearly defines the problem you must solve or the opportunity you wish to address. This isn't unique to IoT projects, but the technology strays outside the comfort zone of many businesses. That's why developing a viable problem statement may require outside help. You're an expert at what you do, but you're probably not an IoT expert. Leveraging partners to help develop a business case—and ultimately your long-term IoT strategy—can be the difference between success and failure.

You can narrow your efforts by determining the functional areas where improvement would be most valuable, such as customer relationships, supply chain, or operations. For example, perhaps reducing scrap on your production line by 1% could result in meaningful savings and eliminate unnecessary waste. With a single area of focus, it becomes easier to scope costs and demonstrate benefits. Without it, proving ROI becomes more challenging, as it's difficult to quantify related costs and the projected outcome. One of the most helpful tips we've heard when selecting a business case is to start small and realize value quickly. Businesses talk about transformation and reorganizing their companies, then quickly become mired in the complexities. You need those quick wins to prove your business case has legs.

After determining your focus area and underlying principles, identify the benefit you want to achieve. Are you trying to cut costs? Increase revenue? Expand service offerings? Here are two common approaches to consider:

Improve your current operations

Perhaps you're a manufacturer wanting to improve efficiencies on the production floor. Or maybe you're a retailer hoping to streamline inventory management. In scenarios like these, IoT can help you do what you already do, only better. To give you an idea, a multinational energy organization² equipped their heat exchangers—a device that removes the heat from fluids flowing through it as part of the plant's fuel processing—with IoT devices. Sensors collected and sent data to the cloud to be analyzed in real time for equipment health status and predict future performance.





This gave the company a deeper and more immediate understanding of their heat exchanger health, enabling them to prevent unscheduled outages and optimize cleaning schedules. The results were quick and clear—the company saved significant time and money maintaining their machines. They then scaled their monitoring system across other equipment to further extend the benefits they realized. In another example, a European electricity company³ equipped their grid with connected sensors and applied advanced analytics to create an autonomous, responsive power grid. They were able to forecast future demand while leveraging new distributed resources to meet current demand without building new power plants. The result was a resilient, flexible grid that greatly improved the service they offered, enabling them to do more with the resources at their disposal. The potential is evident—just take a look at the impact that [remote monitoring](#) and [predictive maintenance](#) scenarios are having across every industry.

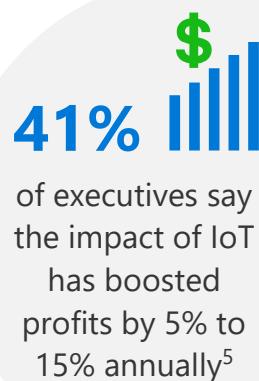
These types of use cases can serve as a solid foundation for you to scale and extend the capabilities of your solution.

Transform your business model

Aside from efficiency, you can also use IoT as an engine to innovate and drive significant business model changes. In a recent Forbes survey of 700 executives, 60% are already tapping IoT to transform or expand their existing service lines.⁴

For instance, a global food packaging company implemented IoT in stages to get the most impact. They started by achieving efficiencies on the production room floor, incorporated those insights throughout their business, and then fundamentally changed their business model. How did they do it? First, they attempted to gain a better understanding of installed machines at customer sites. By outfitting their machines with sensors, they were able to capture and analyze data to generate greater insight into machine performance. This new intelligence painted a more complete picture of why some machines were performing well and others weren't.

With that information, they educated their sales and technical teams to help customers get the most out of their machines. Finally, they extended transformation beyond efficiencies and insight to initiate a complete business model shift. They realized they could help other companies benefit from their experience by providing high-quality packaging, design, and supply chain services to their customers instead of only selling machines and packaging materials. With this approach, they were able to achieve broad-scale transformation, shifting from a traditional packaging company to a competitive and modern technology company. And let's not forget one of the most compelling promises of IoT—impacting the bottom line. 41% of executives surveyed by Forbes say the impact of IoT has boosted profits by 5% to 15% annually,⁵ and business transformation is a key way to realize those profits. But before you lock in your business case, it's important to remember the benefits of starting small, while also staying grounded in the larger business strategy.



Are you keeping the larger strategy in mind?

There are two common mistakes companies make when developing IoT strategies. First, many are too ambitious—they attempt to transform all at once and get overwhelmed. Other businesses will pull off a successful short-term project, but then not have a clear idea of how to build that success into a larger, more sustainable strategy.

As we mentioned previously, it's a good idea to start small and realize value quickly. While you're thinking through your objectives, set yourself up for future success by defining your long-term business strategy and aligning it with IoT. Without placing IoT in the broader context of an overall digital strategy, you run the risk of not being able to build on your efforts or integrate them effectively into businesses processes.

For example, you can extract data from machines on a factory floor, but if you don't have a strategy for interpreting and applying the insights from that data, then you've invested in a dead-end solution. Like any new business effort, IoT is most successful when it's treated as a strategic business initiative.

If the initial business case doesn't seem to fit well within the overall strategy, that's a sign that you may need to revisit the initial business case and adjust it to make it work.

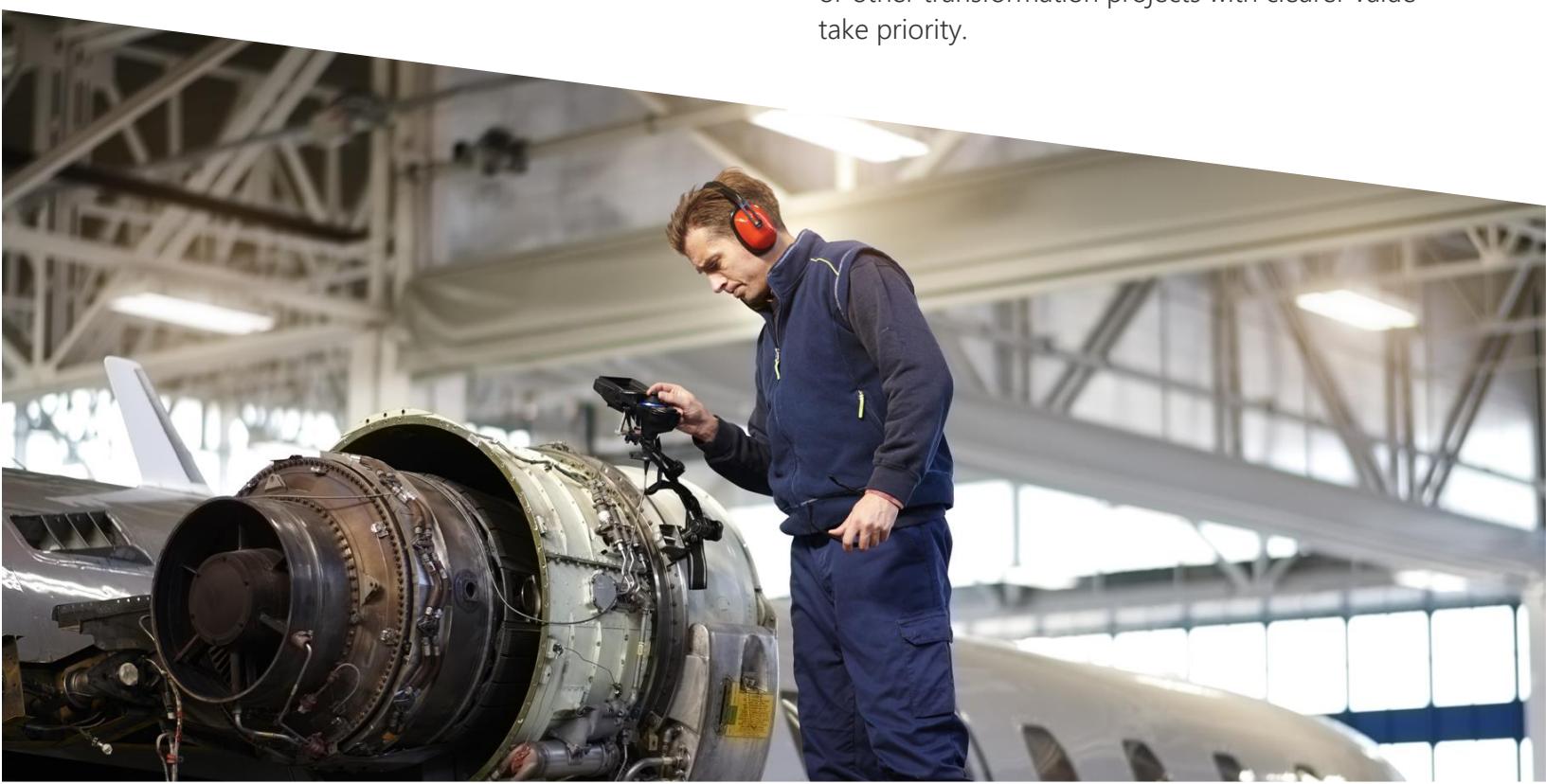


70%

of IoT projects fail because of poor planning in the initial stages¹

Can you quantify the business value?

Quantifying your desired outcome is vital to ensuring success and maximizing the value of your investments. We hear this time and time again from our customers and partners. Defined metrics will anchor your project, help you identify the right stakeholders, ensure you have ongoing financial support, and adjust your business strategies to achieve your objectives. Whether success means improving firstline worker efficiency, lowering research and development costs, upselling aftermarket services, offering next-generation subscription and service models, or simply getting visibility into specific asset data, your quantifiable business value should serve as a compass for your IoT project across its lifecycle. Without this foundation, the project is liable to stall when stakeholders realize the costs aren't worth the results, or other transformation projects with clearer value take priority.



Maximizing ROI requires effective execution

Are you developing your business and technical strategies in tandem?

After you've determined the business case you want to address, it's time to plan comprehensive business and technical strategies. One of the most common pitfalls of IoT projects is failing to plan both in parallel. Too often, organizations will treat IoT like traditional IT solutions. But IoT requires you to give equal consideration to the processes and cultural norms that must change to incorporate new insights and capabilities. Yes, there's value in connecting machines and collecting data, yet the real impact comes from making the data available to the right people at the right time. We've consistently heard from our customers that those who are empowering their employees with increased line of sight across the company are the ones who experience the full benefits of IoT. If business and technical strategies are planned separately, you'll inevitably run into several issues, ranging from costly delays to increasing your risk of security vulnerabilities.



HELPFUL HINTS

Your technology costs will likely be minor when compared to the operations or services costs.

You might inadvertently create technology and processes that don't interoperate, increasing the chances that you become lost in complexity further down the line. Additionally, it can become difficult to holistically evaluate costs across the business—a key step in ensuring continued stakeholder support. When planning business and technical strategies, an important consideration is end-to-end security. Connected devices generate massive amounts of data, both for your company and your customers. You'll need to build security in at every layer to protect devices physically and virtually, as well as address data governance and protection. Cloud services can be an effective solution, though security risks will need to be identified and addressed at every step of the data journey. It should go without saying that security risks can have a negative impact on ROI and introduce unexpected costs.

Are you thinking about costs the right way?

The business case you develop at the outset of your project should prove that the desired outcomes outweigh projected costs. You're already well-versed in determining ROI, and IoT initiatives should be treated like other strategic initiatives in this regard. However, many companies still evaluate costs the wrong way. They focus on the technology, when they should be considering business-related costs. The technology costs will likely be minor when compared to the operations or services costs.



Ultimately, the cost of the service itself, which is usually the focus of many IoT conversations, is seldom significant when compared to the hardware, maintenance, supply chain, and service costs. Those are the factors that drag down most business cases, especially when you need to scale. For many businesses, it's helpful to focus cost considerations on operations. Because IoT includes hardware and connectivity, you'll need processes for how you install physical devices and replace the equipment when it breaks. Say you manufacture industrial boilers; you'll need a process for how you install sensors and connectivity within the connected

device. You might even need to adjust the boiler design so connected devices can be more easily and efficiently installed. If you're selling the boilers and a maintenance subscription driven by automatic work orders, you'll need to change how you allocate maintenance and technician resources to meet the new requirements. This is another area where it's helpful to look into partnerships, as service partners can support you in these endeavors. But no matter how you accomplish these operational adjustments, this is where most costs will lie—in the changes to your actual business.



Should you pursue an MVP or a PoC?

When you move from planning to implementation, there are several things to consider. First, our customers often find that jumping straight into a minimum viable product (MVP) will help them gain momentum and accelerate time-to-value. In today's highly competitive market, MVPs are a useful way to get a product to market as quickly as possible.

They enable you to start small and scale once you verify that your connected devices are doing what they're intended to do and meeting their target metrics. MVPs also help you identify potential challenges you'll face when implementing and scaling the product. At this stage, many businesses uncover issues such as too much time spent provisioning devices and sourcing hardware or integrating IoT-enabled products with their billing and CRM systems. MVPs are an effective way to drive first adoption of services and scale more rapidly for

future implementations, but the other route you can take is a proof of concept (PoC).

While an MVP is designed to get a functional product to market quickly, a PoC is an internal test to demonstrate and validate product capabilities. If you decide to do a PoC, it's a good idea to establish clear business value targets and align on next steps if those targets are met. For example, determine whether you want to reduce scrap by 2%, or realize a 1% maintenance efficiency gain.

It's also important that a PoC doesn't become a blocker to forward progress. Securing executive approval beforehand will ensure that if you hit your goals in the PoC, you can move automatically to the next phase in your project. Otherwise, you risk ending up in a spin cycle where you repeatedly revisit decisions with stakeholders and executives about whether to proceed, wasting time and resources.



HELPFUL HINTS

Customers often find that jumping straight into a minimum viable product (MVP) will help them gain momentum and accelerate time-to-value.

The final consideration is knowing when to involve a knowledgeable partner. Whether you move forward with an MVP or PoC, partners can speed up your effort and show you how to avoid common pitfalls. If you want to scale quickly and get something into production without delay, it's useful to have partners already in position. System Integrators (SIs) and Independent Software Vendors (ISVs) are especially critical here. And as you move from PoC or MVP to production, partners can help you prepare for additional needs, including data governance and operationalization.

How can you extend the value of IoT beyond your initial project?

The customers we see getting the most from their investments don't treat their IoT project as a one-off effort. Visibility and insights can—and should—extend to other aspects of your business. Our customers typically take two routes: extending to new business processes and extending to new scenarios. By extending to new processes, you can capitalize on the success and experience you've gained. Start small by adding one or two new capabilities to the existing system. Refine your data,

adjust processes, scale the solution, and repeat. For example, if you've implemented IoT in production equipment for one factory successfully, you can begin to extend the solution to other locations and continue improving efficiencies. And we don't just mean the physical hardware—you can scale the data-driven insights and efficiencies you've learned, or train employees and the sales team. If you've started by monitoring machines for maintenance purposes, look at how the information collected by sensors can be used in other ways. Perhaps they can monitor power consumption or peak usage times. Beyond efficiencies in maintenance cycles, you might be able to optimize inventory and supply chain processes.

Another way to extend value is to build the technology you've already implemented into new scenarios. With connected devices installed, it becomes easier to experiment with innovation and new strategies. You can start to think about broader digital transformation initiatives, including new business models and services. For instance, an oil and gas company⁶ outfitted their rod pumps with sensors to monitor and configure pump settings and operations remotely, enabling them to send technicians onsite for repair or maintenance only when necessary. Once their devices were connected, they realized they could apply artificial intelligence (AI) and machine learning to add capabilities that would help predict problems before they occurred and avert faults or shutdowns. The result was a safer, more efficient workplace. This is one example, but there are many opportunities to extend the value of IoT. By working with an experienced partner, you can anticipate and plan for your next steps. And as IoT use cases continue to evolve, your opportunities to build on and extend value will only continue to grow.



Conclusion

There's a reason everyone is turning to IoT: the benefits are undeniable and the future is bright. In fact, 94% of executives surveyed by Forbes anticipate a profit boost of at least 5% to 15% as a result of IoT.⁷ And while we know IoT solutions come with their fair share of challenges, we've seen our customers overcome them to achieve a tremendous amount of value. Many of the lessons they've shared aren't rocket science, but you likely noticed common themes. By approaching each step thoughtfully and consistently reinforcing the strategic goals driving

the project, you stand a much better chance of keeping everyone connected to the bigger picture and realizing success. And this isn't a journey you have to take alone—there are many experienced partners who can share their knowledge and help you every step of the way.

Take your next step today

Need help getting started with IoT or getting more momentum? Check out the Microsoft partner list [here](#) and schedule a business value workshop.



© 2019 Microsoft. All rights reserved. This white paper is for informational purposes only. MICROSOFT MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.

This document is provided "as is." Information and views expressed in this document, including URL and other Internet website references, may change without notice. You bear the risk of using it. This document does not provide you with any legal rights to any intellectual property in any Microsoft product. You may copy and use this document for your internal, reference purposes.

¹ [10 things about IoT that business needs to know](#), PWC, 2018

² [Chevron's connected machines are telling a story about saving time and money](#), Microsoft Customer Stories, 2018

³ [How Microsoft Technology is Enabling an Autonomous Grid](#), Microsoft Customer Stories, 2017

⁴ [5 Ways IoT Is Reinventing Business Today](#), Forbes, 2018

⁵ [5 Ways IoT Is Reinventing Business Today](#), Forbes, 2018

⁶ [Oil and gas experts use machine learning to deploy predictive analytics at the edge](#), Schneider Electric Customer Story

⁷ [5 Ways IoT Is Reinventing Business Today](#), Forbes, 2018