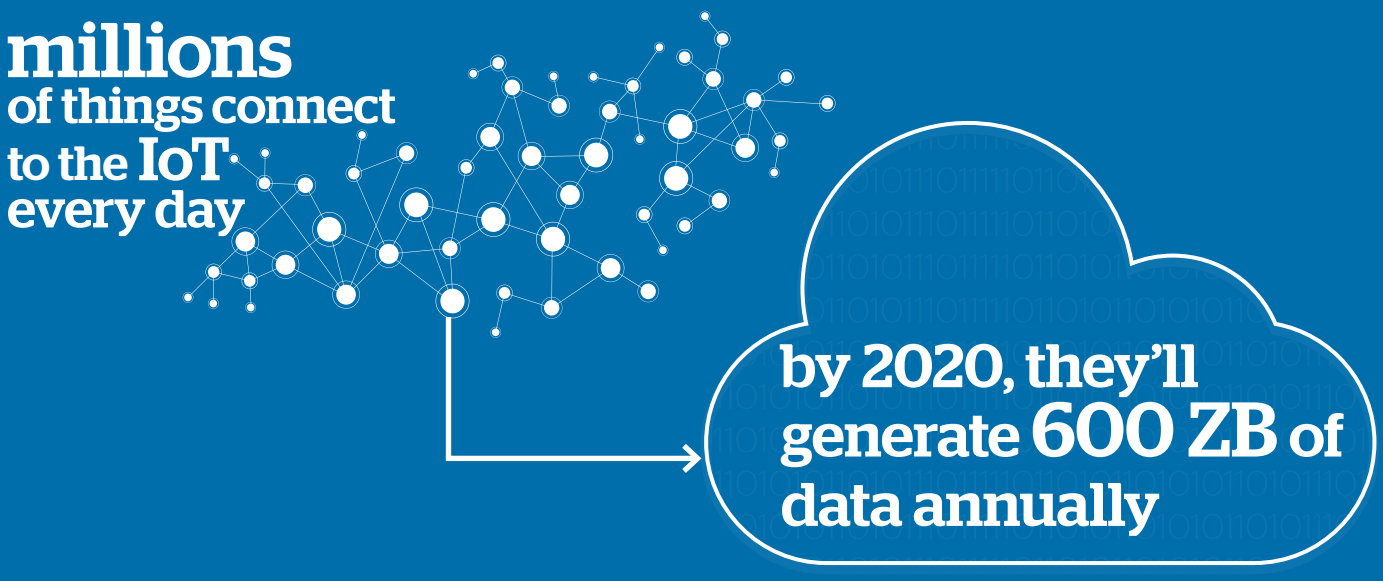
Guide

Managing the enterprise IoT landscape: 5 common challenges

Trusted partner for your **Digital Journey**

Atos

Real-life IoT projects are subject to innumerable variables. Industrialized IoT services require managing multiple complex components in large deployments outside the data center, addressing very specific security and data privacy concerns.



Are you comfortable?

All of these things and all of this data need to be managed. It's unfamiliar territory for much of the business world, with nonstandard landscapes and environments that aren't understood. Some find such an unfamiliar environment unsettling. Others are comforted by its logic and order.

In the enterprise managed IoT services sector, we approach it by not focusing on the technology or the platform. We look at our customers' data and their journeys. We see that their focus on products and services is shifting to business outcomes and dividends of digital investments. They're asking different questions such as, How can I ...

- Optimize my yields from a crop?
- Proactively look at failures on pumps and motors?
- Monetize my data and create a new revenue stream?

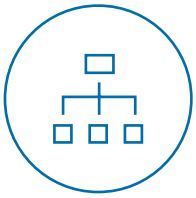
In this place, we use data to remove roadblocks and carry you through challenges that feel foreign but are becoming common in our experience.

Solutions to 5 common challenges in new IoT landscapes

While every business has a unique combination of people, processes and technologies, they all take a similar journey to the Internet of Things (IoT). This guide looks at five areas that require additional precautions and attention, how to avoid common pitfalls, and what technologies can help.

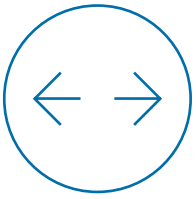
Upfront costs and ROI:

Build scalability into your use case to improve ROI accuracy.



Fragmented data and platforms:

Map the connections between multiple data sources and destinations to ensure completeness.

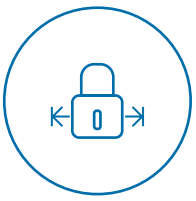


Manage complexity at scale:

Prepare for device complexity to grow as your edge expands.

Contract considerations:

Get involved in the contract to include critical new roles and responsibilities.



Security and privacy of data:

Be acutely aware of local laws and regulations as you define your security strategy.

1. Upfront costs and ROI

Be real

An IoT engagement in a nutshell:

Define a use case. Select a device. Connect it. It generates data. With that data, you'll do something.

Successful enterprises generate and need to acquire data with great speed and at great scale – not tens or hundreds of devices but thousands and thousands. Any use case you create in the beginning of your transformation must be able to scale to very large environments. As you choose technologies and define services for each specific use case, make sure they're reflected realistically in the upfront costs.

To help with the difficulty of predicting the upfront cost for your use case, we provide IoT platforms in partnership with leading brands like SAP Leonardo and Siemens MindSphere, as well as Atos platforms such as Worldline. If you implement a platform like one of these, you can quickly build your use cases on top of it (often based on several pre-defined use cases), ensuring all of the new capabilities will also scale very well in your environment at predictable cost.

2. Fragmented data and platforms

Keep it together

It's very likely that your IoT environment will consist of multiple data streams. You may get data from your own devices as well as partner feeds and environmental sensors.

The connectivity between various sources of data will involve several platforms. Plan your connectivity thoroughly. Include destinations as well as sources because once you have this data, you need to actually do something with it. The data may go into your SAP system or any other back-end environment where it can be processed.

At Atos, we use Intel-based systems with our Bull technologies and those of Dell Technologies. These systems ensure our ability to capture your data, bring it into a data lake and connect it to your back office where it's ready for analytics. And this is where the value of IoT begins. By integrating data management and analytics, as we do with Atos Codex Advanced Analytics and AI, you can get huge advances in productivity, efficiency and cost savings.

3. Managing complexity at scale

Think about your edge

IoT becomes very complex very quickly. Here is an example. One recent project involved deploying close to a million devices with sensors to a retailer's locations around the world. These sensors are battery-powered, which means that at a certain point in time, we as the supplier need to visit all those places and replace the batteries. If the contract is for 5 years and batteries last 2 years, how much labor will it take to keep the devices powered for the length of the contract? It can't be skimped on. This is the edge, in edge computing, where data is being generated.

So, when you think about your IoT landscape, think about your edge: What kind of sensors? How do I collect the data at the edge? How do I deploy the devices to the edge? How do I manage the connectivity sustainably over time? And how do I control security?

In this type of project, we work closely with Dell Technologies and VMware on two goals. First, to have systems in place that assure connectivity over time. And second, to know exactly what is happening with the devices wherever they are, even if there are a million of them. We use ServiceNow in our service management environment to power dashboards that monitor connectivity and activate reestablishment actions if connectivity is ever lost.

4. Security and privacy of data

Adapt to changing rules

If your data is moving around, different rules apply. You may think that IoT transactions are nothing more than the transmission of sensor data from devices. But if you're doing it right, you're also sending commands back to the devices. In other words, you've got data flowing back and forth, often across geographical boundaries. It's your responsibility to ensure proper execution according to local laws and regulations (including GDPR), without interference from bad actors.

We use hardware such as our Bull Horus IoT security server, and Evidian, our identity and access management platform, to assure confidentiality and security in large IoT environments. Our partner NetFoundry allows us to create a secure channel for any number of devices to distribute the data and execute transactions.

5. Contract considerations

Dig into the details

Normally, the legal aspect of how the relationship is formulated will be managed by a legal team. They need to be aware of new details and participants coming into IoT contracts. You've got many partners, vendors and stakeholders. Hardware, software and services. They all need to be part of your contract.

Account for low-value hardware. There will be a large amount of it representing a large amount of value on your balance sheet or in your contract.

Don't overlook the details of device maintenance. In the contract of the earlier global retail project example, there was a question of waste management. Who's going to maintain, replace and retire the devices in every country? What service levels are expected from the field service contractors?

Who's responsible for data quality? For example, if one sensor is reporting a higher temperature than the others, is this one sensor at fault and does it need replacement, or is there a fire near that sensor? As a service provider, we can see the anomaly on a dashboard and we must decide what to do. This isn't normally part of the services levels that you would discuss with your IT partner and supplier, but in IoT, it's now part of the discussion.

Relax

With just a basic understanding of how to work through these common challenges, you'll be better prepared in planning your enterprise environment of things and data.

Why Atos

There's so much happening with technology today. Atos is one of the few companies in the world that understands how IT service management, which is in our heart, in our DNA, now extends into the IoT landscape. Our managed IoT services address this new set of challenges, bringing the benefit of our customers' experiences to you.

Drop us a note: info.na@atos.net

Learn more about solving the challenges of IoT at:
https://pages.atos.net/mrt-codex

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https://atos.net/en/solutions/industry-4-0-the-industrial-internet-of-things

Blog articles on IoT:
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Paul is globally responsible for the development and delivery of Atos IoT services and solutions. A founding member of the Atos Scientific Community, business innovation ranks highly among the passions he's developed over his 30-year career in information and communications technology. Throughout that time, he's led teams of specialists in a variety of disciplines and market sectors. His experience ranges the entire business development lifecycle of ideas, design, build, sell and operate. Paul is based near Amsterdam, The Netherlands.

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