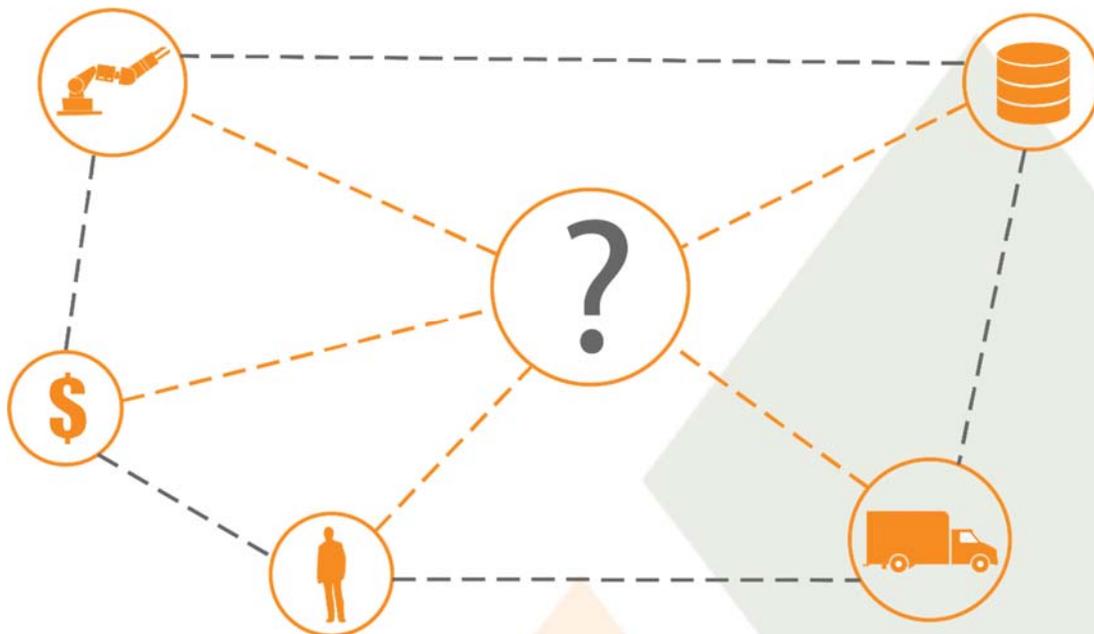


# Choosing the Right IoT Software Platform

*How Your Choice of Software Platform Can Make or Break Your IoT Implementation*



This document outlines some of the considerations that should be taken into account when comparing IoT Software Platforms.

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## Preparing for the Internet of Things (IoT)

It's already happening. It has been for a while now, but something has changed. The IoT is no longer a nebulous, somewhat remote and intangible concept. It is a living and evolving organism that is forcing us to change the way we do nearly everything.

This is especially true for those in the industrial and commercial worlds, where ever-shrinking profit margins are forcing us to find ways to do more with less – to produce faster and more efficiently, and to do so with less waste and resource consumption. These are the conditions in which the IoT began to take root, and the conditions that will drive its early evolution.

It should come as no surprise that a majority of companies today have some sort of IoT initiative being discussed, planned, or developed – if not already implemented. And this phenomenon is global and completely horizontal.

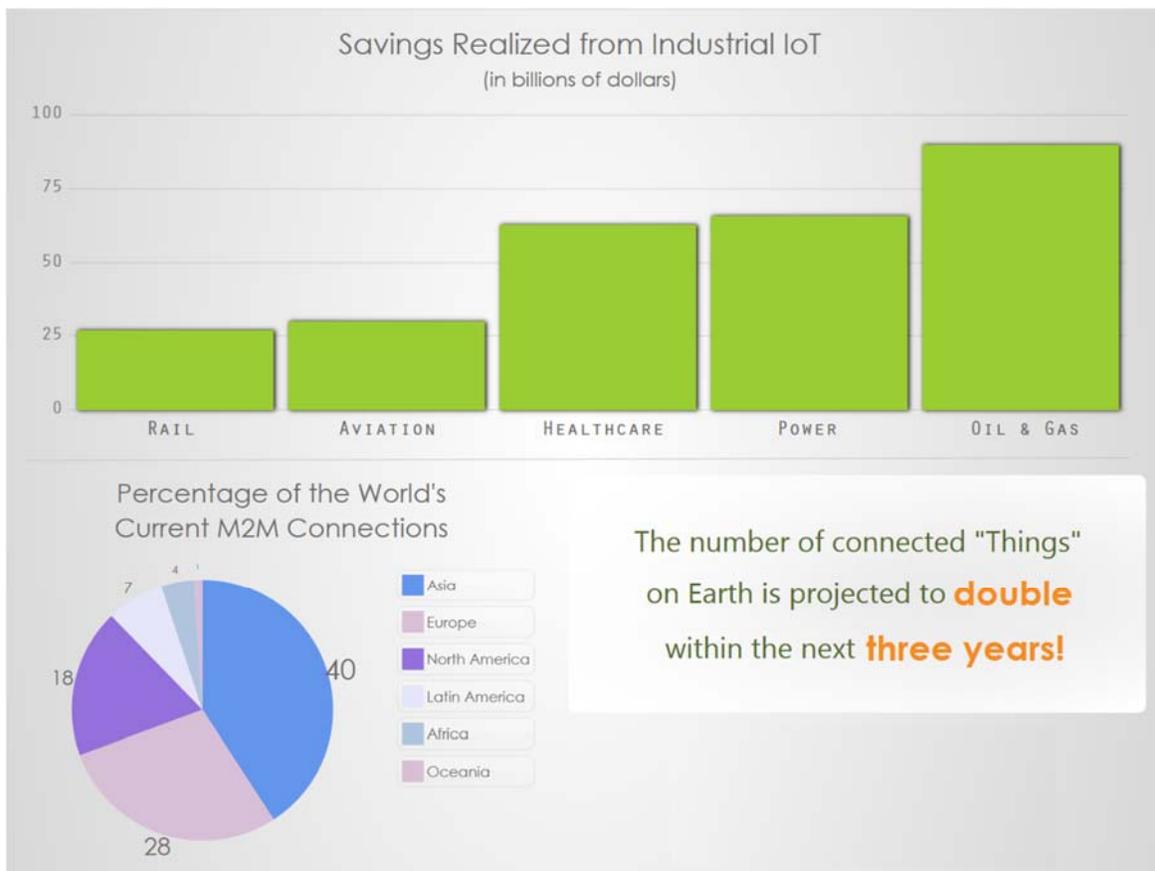


Figure 1 - Industrial IoT projects are saving money in numerous industries around the world

## Why Aren't We All There Yet?

For those still planning their IoT initiatives and smoothing out the details, there are a number of barriers that can get in the way. A recent survey of 200 IT and business leaders conducted by TEKSystems © and released in January 2016 (<http://www.teksystems.com/resources/pressroom/2016/state-of-the-internet-of-things?&year=2016>) cited the key areas in which companies are encountering resistance to their IoT plans.

As could be expected, security is the biggest concern, cited by approximately half of respondents.

### Increased exposure of data/information security – 50%

With the World Wide Web as an example, people today are well aware of the dangers inherent in transmitting data between nodes on a network. With many of these organizations working with key proprietary operational data that could prove advantageous to a competitor if exposed, the concern is very understandable.

### ROI/making the business case – 43%

This is a classic example of not knowing what you don't know. Without an established example of how similar initiatives have impacted your organization in the past – or even how similarly sized and structured organizations have been impacted – it can be very difficult to demonstrate in a tangible way exactly how these efforts will impact the bottom line. Without being able to make the business case, it will be difficult for executives to sign off any new initiatives. This is likely why larger organizations (\$5+ billion in annual revenue) are much more likely to have already implemented IoT initiatives, while smaller organizations are still in the planning phase.

### Interoperability with current infrastructure/systems – 37%

Nobody likes to start over, and many of the executives surveyed are dealing with organizations who have made enormous investments in the technology they are currently using. The notion of a “rip and replace” type of implementation is not very appealing. The cost is not only related to the downtime incurred in these cases, but the wasted cost associated with the expensive equipment and software systems that are being cast aside. In most cases, to gain any traction at all a proposed IoT initiative will have to work with the systems that are already in place – not replace them.

### Finding the right staff/skill sets for IoT strategy and implementation – 33%

With the IoT still being a fairly young concept, many organizations are concerned that they lack the technical expertise needed to properly plan and implement an IoT initiative. There are many discussions taking place about how much can be handled by internal staff and how much may need to be out-sourced. Without confidence in their internal capabilities, it is also difficult to know whether or not they

even have a valid strategy or understanding of the possibilities. Again, this is a case where larger organizations with larger pools of talent have an advantage.

The full results break down like this:

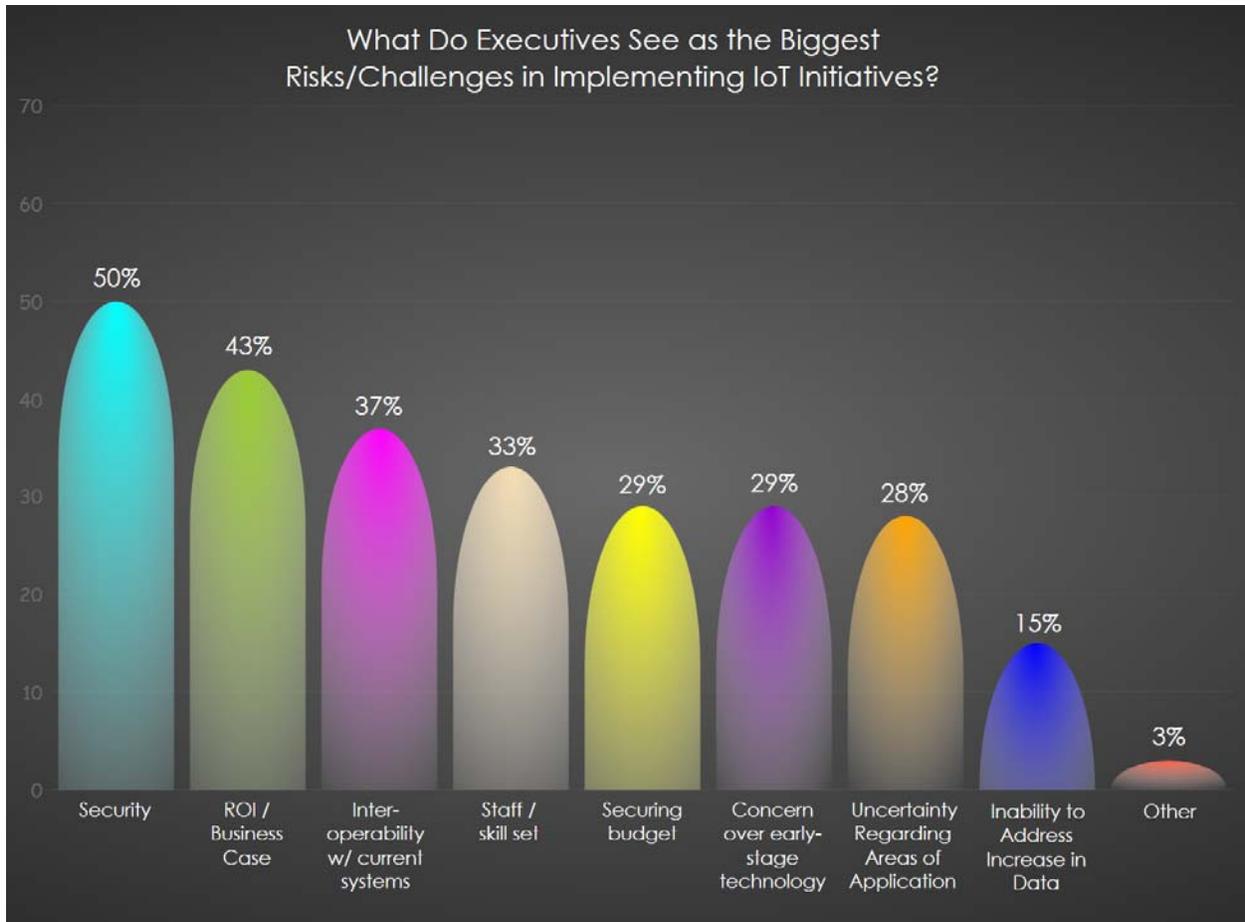


Figure 2 - Many Organizations are Hesitant to Invest Much in IoT Initiatives at this Stage

There are some valid concerns, and not all of them lend themselves to simple solutions. In truth, many of the solutions will vary from one organization to the next. However, in many cases the solutions could be as simple as just choosing the right software platform. Finding a platform that eases your concerns about interoperability can also help ease your concerns about whether or not your staff can handle the change, as there will be no need to replace equipment. Likewise, a platform that can be integrated seamlessly into your current operations to help improve efficiency and implement optimization strategies will also make it much easier to demonstrate ROI.

## How Can a Software Platform Alleviate These Concerns?

While implementing an IoT initiative is likely to require some new hardware – new sensors, servers, routers, and other devices – success hinges largely on the quality and capability of the software platform that drives it. Your software is what will transform your operational data into meaningful information, and your software will provide the interfaces your staff will use to interact with the information provided. Ideally, your software platform will provide a number of other benefits as well, including an ability to archive data, a way to automate certain tasks and enforce particular rules, and an ability to be customized and/or scaled to meet the needs of your growing business.

### How to Start Your Search

Before selecting a software platform, it's good to start with a clear idea of your needs, expectations, and goals. Then, when evaluating different platforms, see how they measure up against your checklist. This won't necessarily help you choose the right platform, but it can certainly help you identify the *wrong* ones.

NEED	Platform #1	Platform #2	Platform #3
Must connect all network devices, databases and users in a unified visual environment	✗	✓	✓
Must update in real-time as work procedures/maintenance records, etc. update	✓	✓	✓
Must make real-time data visible on mobile devices	✗	✓	✓
Must provide system for alarms and email/SMS notifications	✓	✓	✓
Must be extendable and scale to any size.	✗	✗	✓

Figure 3 - A simple checklist like this can help you eliminate some platforms early in the evaluation process

## Think About Security

Every organization has a particular structure that must be maintained. Staff members need to have access to certain information to do their jobs and nothing more. This is not just a matter of security, but simple efficacy. There is no reason to burden someone's mind with information that has no impact on their personal responsibilities within the organization.

It's important that your software platform provides a means of managing user access. A maintenance technician logging in should not see the same information as a C-level executive. The technician does not need to see a graph depicting recent trends in discretionary spending any more than the executive needs to see a list of open work orders.

Of course, this should not be a matter of simply directing a certain user to a certain dashboard. The system should include the ability to completely lock down certain sets of information so that they cannot under any circumstances be accessed by another user.

## Think About Your Existing Systems

Is this new system going to completely replace all of your existing management systems? Or is it being installed as a supplement to what's already in place? It may be possible to enhance and add value to your existing systems if done correctly. Will the new system communicate with your old systems and devices? Will it be read-only or bi-directional?

Unless you want to do a full replacement of your current systems, there will be many questions to ask about how all of these moving parts will fit together.

## Think About the Future

Implementing your new IoT system will require some significant investment – both in resources and time. It's important that the work done today doesn't need to be undone tomorrow when your work practices or business processes change. Ensure that the system you put in place today has the ability to be extended or modified as needed.

Assuming everything goes the way you have planned, it won't be long before you're thinking about expanding. Make sure your IoT software system doesn't handcuff you.

## Your Software Platform Will Play a Major Role in Determining Your Success

Not to downplay the significance of your hardware, but the software you choose will either be the glue that ties everything together and makes it work or the gum that jams up the gears and brings the whole thing to a stop.

Take the time to evaluate not just the available platforms, but your internal goals and expectations. Once you have a clear understanding of exactly where you are and exactly where you are going, you should have no trouble choosing the absolute best vehicle for the trip.

Happy driving!



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