HOW LEADERS ARE EFFECTIVELY BUILDING APPLICATIONS AND SERVICES TO SUCCEED WITH THE INTERNET OF THINGS

Report Highlights

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42% of organizations say that development and integration costs are the top challenges when implementing IoT.

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Organizations developing for IoT are 35% more likely to have the ability to integrate IoT data with their business-critical systems.

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By developing applications and integrations for IoT systems, businesses are 40% more likely to see improved customer retention and customer satisfaction.

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Organizations developing for the IoT are 28% more likely to see increased revenue.

In this report, we'll look at how organizations today are challenged in deploying the IoT and getting the most out of their investment. And we'll look at how businesses that focus on developing the right tools, services, applications, and integrations with the IoT are reaping important benefits, setting themselves up to succeed with IoT both today and tomorrow as the technology continues to evolve.

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There are solutions available on the market today specifically designed to ease development and integration of the Internet of Things.

Throughout the history of computing, whenever a new technology comes out, a lot of the initial focus is on the hardware.

And time and again, the true importance and point of innovation lies in how applications and services are developed for these technologies. An excellent example of this is the recent rise of mobility.

As smartphones became increasingly ubiquitous and vital for both business and personal use, people initially paid most of their attention to the hardware; which phone makers would dominate the market, and on which devices should businesses standardize? Even the first real enterprise mobile management attempt was called Mobile Device Management, as the device seemed the logical place to put the focus.

But as we all know, the true innovation and importance of mobility lies in the applications that people use, the integrations that businesses build with these devices, and the intelligence they are able to gain from how mobile applications and services are used.

Now we are seeing much of the same dynamic play out with the Internet of Things (IoT). It's easy to understand how people can focus on the hardware in IoT. After all, "things" is right there in the name.

However, when businesses talk about the Internet of Things, they often focus too much on the "things" aspect.

This leads to thinking of IoT devices as off-the-shelf "things" that can't be changed or customized. But leading organizations are finding that getting the most out of the IoT means effectively utilizing APIs and other integration capabilities to develop IoT

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50% of organizations are currently using or exploring the use of IoT.

Top Pressures Driving Business to Adopt IoT:

- ➢ 44% - Improve Customer Experience
- ➢ 43% - Cost Reductions
- ➢ 31% - Drive revenue growth
- ➢ 24% - Faster time to market

applications, services, and analytics that help businesses customize their IoT investment.

In this report, we'll look at how organizations today are challenged in deploying the IoT and getting the most out of their investment. And we'll look at how businesses that focus on developing the right tools, services, applications, and integrations with the IoT are reaping important benefits, setting themselves up to succeed with IoT both today and tomorrow as the technology continues to evolve.

Overcoming the Challenges of the Internet of Things

According to the Aberdeen Group's recent survey into the Internet of Things, 50% of organizations are currently using or exploring the use of IoT to improve customer experience and revenue and reduce costs (see sidebar). And many of these businesses are finding that they are challenged to get the most out of this investment.

Part of the problem is in figuring out how to best utilize IoT devices. Unlike smartphones or laptops, IoT devices don't tend to come fully loaded with lots of capabilities and integrations.

Businesses need to work to develop capabilities and build integrations so that they can use IoT devices efficiently. This means developing the ability to control, manage, and understand the IoT devices within the organization. It means having real-time analytics into how these devices are operating. And it means building application integrations so that the IoT is tied into key business processes and systems.

Not surprisingly, effective development and integration of IoT has turned out to be the main challenge for businesses today. In

Figure 1 below, we see that 42% of organizations say that development and integration costs are the top challenges when implementing IoT.

Figure 1: Challenges to IoT Deployment
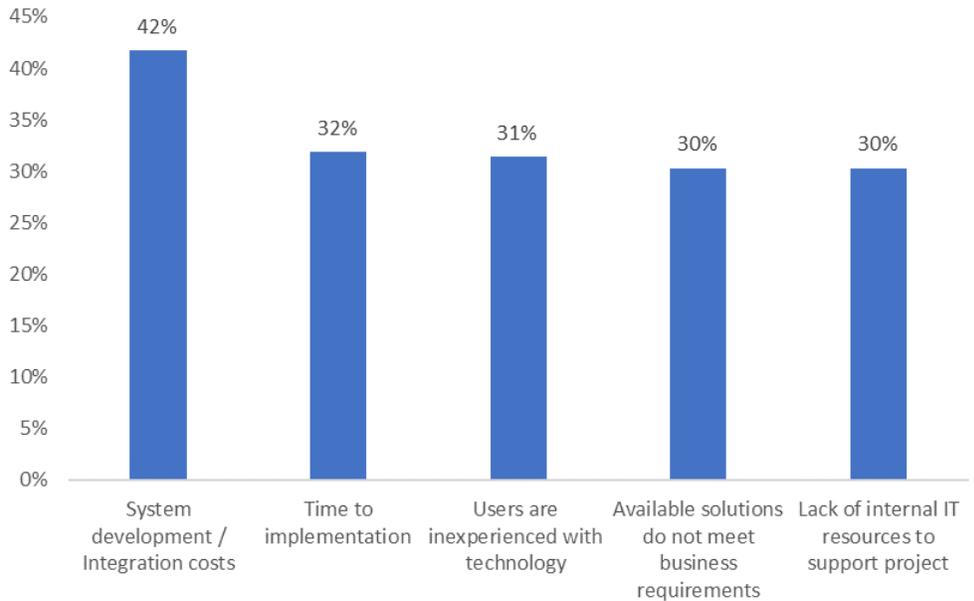
Source: Aberdeen Group, March 2017   Percentage of respondents, n=436

And when we look at the other top challenges, we see this same issue threaded through all of them. Businesses are challenged by the time to implement IoT, which is tied to their difficulty in development. They also have inexperienced uses and lack of IT resources, both of which make effectively integrating the IoT a tougher task. And they find that the traditional solutions available to them aren't meeting their needs.

However, if these organizations investigate further, they will find that there are solutions available on the market today specifically designed to ease development and integration of the Internet of Things. Solutions such as cloud-based systems with pre-built configurations that can greatly ease the complexity of IoT

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Aberdeen research has shown that businesses actively developing for the IoT and utilizing effective integrations have the most capabilities and see the greatest benefits with their IoT deployments.

development and speed the time to implementation. And with these solutions, businesses find that their traditional application integration skillsets can be effectively leveraged to build IoT systems. Systems such as these are often also tied into intelligent and automated systems that provide cutting edge capabilities, making it possible for businesses to easily grow their offerings as the IoT continues to evolve.

And by leveraging these solutions, organizations are not only overcoming the top challenges listed, they are also setting themselves up for the greatest success with the Internet of Things. This is because Aberdeen research has shown that businesses actively developing for the IoT and utilizing effective integrations have the most capabilities and see the greatest benefits with their IoT deployments.
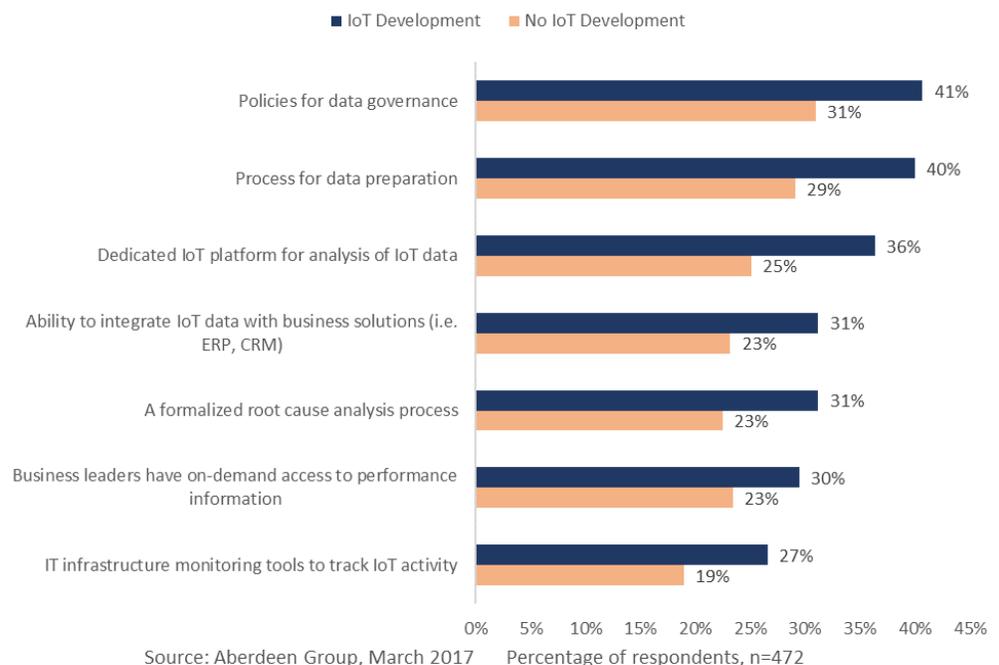
Making the IoT Your Very Own Thing

It makes a lot of sense when you stop to think about it. Sure, many IoT devices and platforms come with some built-in capabilities. Sensors can send status information to some basic dashboard, a simple control capability is provided, there might even be some simple reporting feature provided.

But really, these types of off-the-shelf capabilities, if they even exist for some IoT devices, are typically just providing the bare minimum of what an organization needs to really succeed with the IoT. And if a business tries to get by with these capabilities, without working to develop their own integrations and capabilities, then they are likely to find that their IoT investment isn't delivering on its full potential.

To understand this dynamic, we used our data to compare organizations that were actively working to develop services and integrations with their IoT systems to those that weren't. And it's no surprise that we found that these IoT developers were much more likely to be taking advantage of many of the key capabilities of IoT, as shown in Figure 2.

Figure 2: How a Development Focus Improves IoT Strategies

■ IoT Development ■ No IoT Development

Capability	IoT Development	No IoT Development
Policies for data governance	41%	31%
Process for data preparation	40%	29%
Dedicated IoT platform for analysis of IoT data	36%	25%
Ability to integrate IoT data with business solutions (i.e. ERP, CRM)	31%	23%
A formalized root cause analysis process	31%	23%
Business leaders have on-demand access to performance information	30%	23%
IT infrastructure monitoring tools to track IoT activity	27%	19%

0% 5% 10% 15% 20% 25% 30% 35% 40% 45%

Source: Aberdeen Group, March 2017   Percentage of respondents, n=472

Looking at this data, we see that organizations developing for IoT are 45% more likely to have a dedicated platform for analysis of IoT data, and to have IT infrastructure tools for tracking IoT activity. This means that they aren't relying on canned IoT device data, and are instead working to have a real-time, end-to-end view into IoT performance and effectiveness.

With this wealth of information, they are getting it into the right hands, as they are 30% more likely to give business leaders on-

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demand access to IoT performance information. And they ensure that the analytics coming from these platforms is of the highest quality, as they are 30% more likely to have policies for data governance and data preparation in place.

Most importantly, along with the integrations into control and management systems, these IoT development organizations are also tying the IoT into their critical enterprise systems such as ERP, as they are 35% more likely to have the ability to integrate IoT data with their business-critical systems.

Ensuring that the IoT Delivers on the Things You Need to Succeed

We've seen that overcoming the challenges of deploying the Internet of Things need not be a complex and time consuming task. Through powerful cloud-based integration systems, organizations greatly ease their ability to build strong applications and develop needed services for their IoT platforms.

Along with this, we've found that businesses that use application and integration development tools with the IoT are much more likely to leverage processes and capabilities to help them better understand and manage their IoT investment.

That's all excellent, but what about the real payoff? Are businesses developing applications and integrations for the Internet of Things seeing benefits in reliability, revenue and customer satisfaction?

Well, when we broke down our data to see what benefits businesses developing for the IoT gained over those not doing so, we saw these exact advantages. In the data below, we found a number of benefits that developing for the IoT can bring.

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Figure 3: Businesses Developing for the IoT Gain Real Benefits

65%	More likely to see an improvement in SLA compliance
40%	More likely to see improved customer retention
40%	More likely to see higher customer satisfaction
28%	More likely to see improved revenue

By developing custom services and integrations for the Internet of Things, organizations are 65% more likely to see improved SLA compliance, meaning that the key services provided to end-users and customers are reliable and delivering their promised capabilities. And with this reliability, it's no surprise that these businesses have happy and dedicated customers, as they are 40% more likely to see improved customer retention and high customer satisfaction.

And most importantly, these organizations developing for the IoT are seeing a return on their investment. When compared to other businesses, these IoT developers are 28% more likely to see increased revenue.

Key Takeway

The choices seem to be pretty clear-cut. As a business implementing Internet of Things devices, you can try to get by with what the device providers give you, or work completely on your own to build new services and integrate the IoT with your own systems.

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If you take these approaches, you will have to deal with increased costs, complexities and delays, or your business will have to get by on the bare minimum capabilities that the IoT can bring.

The other choice is to use powerful cloud-based tools to quickly start developing IoT applications and integrating them with your systems. This leads to faster development times, increased revenues, and happy and loyal customers.

This sounds like one of those things that's really an easy choice. To be a leading Internet of Things developer, prepare your infrastructure to get the most out of the IoT, use powerful integrated tools to build an IoT that meets your specific needs, implement real-time analytics to understand how you are using IoT and where it needs to be improved, and build a strong base that can grow as the IoT continues to evolve.

With these steps in mind, leading businesses can develop an integrated IoT platform that provides benefits today and tomorrow. And that kind of benefit is one of those things that we can all agree on.

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