

Maximize Your Enterprise's Potential Through IoT:

Lessons Learnt From IoT Leaders



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IOT IS REAL, AND IT IS HERE TODAY — DON'T SHY AWAY FROM IT

The Internet of Things (IoT) is not a new phenomenon, but it has grabbed a significant amount of executive attention within the business and technology world over the past three years. Why? Because IoT can transform your business, ensuring your relevance for the long term. It can create greater internal efficiencies through automation, but also lead to faster, more accurate decision making as real-time sensor data is filtered into actionable information. In short, it brings together people, processes, data, and things to make networked connections more relevant by turning information into actions. It is transformative in nature, and no executive can afford to dismiss IoT's impact on his or her business.

IDC defines IoT as the technology ecosystem that uses a vast network of uniquely identifiable things (sensors) that capture, transmit, and analyze data without human interaction. It is complex as it involves sensors, gateways, connectivity, purpose-built platforms, data management, security, and services. This complexity leads to fragmentation, making any initiative around IoT very difficult to get off the ground, with so many moving parts and stakeholders.

Two things need to happen to maximize your chance of a successful IoT implementation:

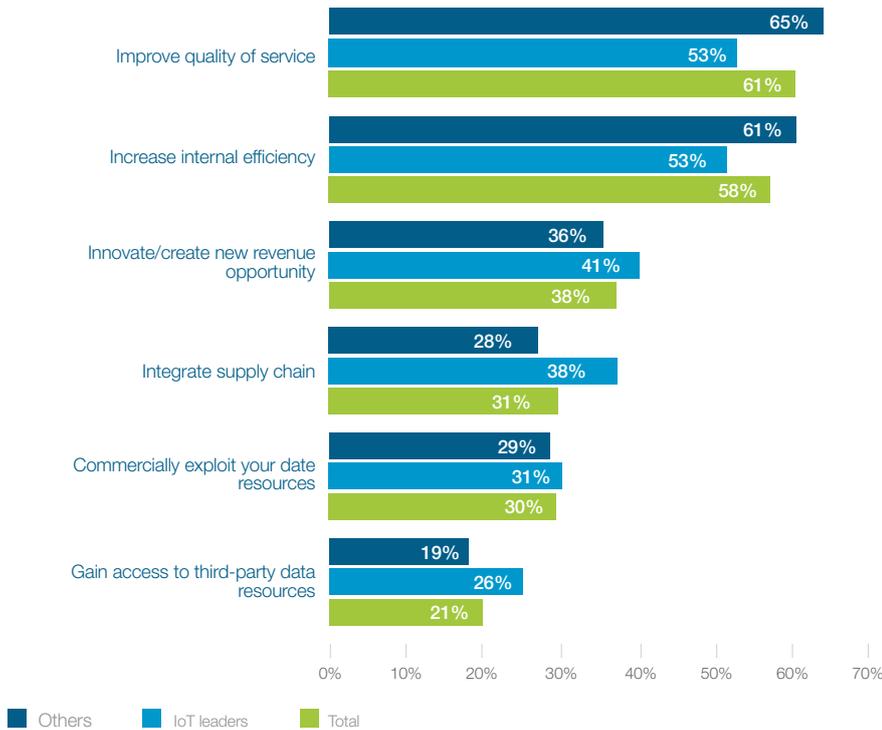
- You must adopt a strategic, companywide approach to IoT.
- You must learn from those who have already implemented an IoT solution — the IoT "leaders."

IDC believes it is crucial to look closely at these IoT leaders — those with actual implementation experience (26% of respondents in our recent survey of decision makers) — not only to avoid costly mistakes but also to avoid false hope when it comes to implementing IoT.

Separating the IoT Leaders and the Rest – the Haves and the Have-Nots

Our survey of 553 decision makers across Europe shows that "improving quality of service" was the main reason to deploy an IoT solution for 61% of respondents, with "increasing internal efficiencies" coming second (58%). Both are extremely important reasons to implement any strategic initiative (see Figure 1).

FIGURE 1
What Are Your Main Reasons for Deploying IoT?

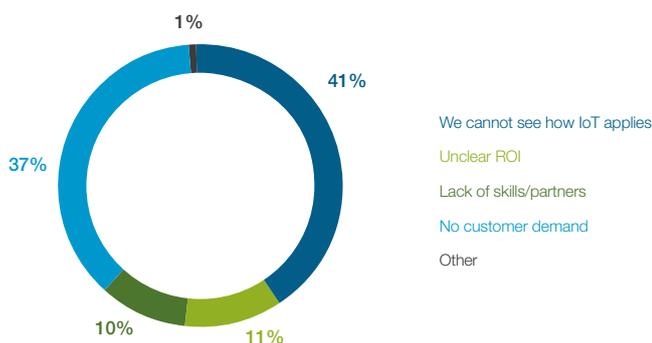


Source: IDC, 2017

More importantly, IoT was also seen as key to innovate to create new revenue opportunities, integrate the supply chain, or exploit a company's data resources. IoT leaders — those with practical experience of implementation — have a much more rounded view of why they deployed IoT: QoS and internal efficiencies are still rated highly (both 58%), but innovation (41%), supply chain integration (38%), and gaining access to third-party resources featured more prominently in their decision to adopt.

Understanding why companies have not yet deployed an IoT solution is equally important and reveals some interesting findings (see Figure 2).

FIGURE 2
What Is the Main Reason Why Your Company Has No IoT Plans?



Source: IDC, 2017





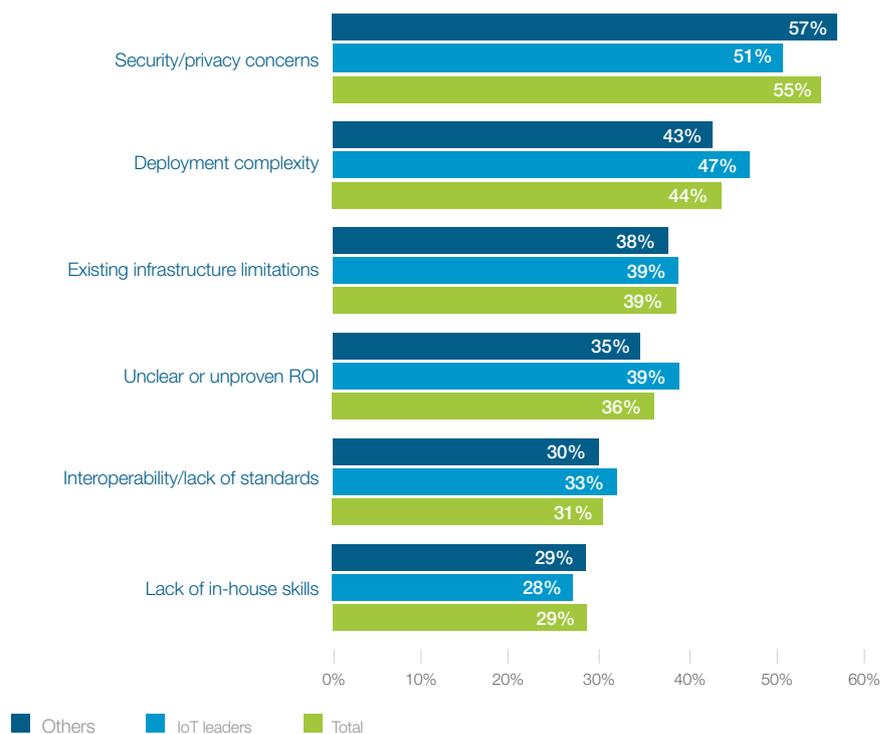
Lack of vision as to how IoT could benefit the organization is the main reason for not implementing it (41%), followed by a perceived lack of demand from customers (37%).

IDC therefore sees a chasm between the haves and the have-nots when it comes to IoT — those who see the importance of IoT and therefore have a solution or strategy in place today and those who do not for various reasons. Part of this dichotomy is due to the fragmentation of the IoT market place, from sensors to security and everything in between. It is difficult to make sense of it, and it is complex, companywide, and transformational. In that context, decision makers either get it or they don't.

Either way, IDC believes both camps need help to make IoT a reality within their organization. Those who have a solution need to ensure it achieves its objectives, those about to embark on an IoT strategy need to minimize potential issues, and those few who do not wish to pursue any IoT initiative must ensure they are not missing out on a significant opportunity.

Whether IoT leaders or not, all organizations perceive (or face) challenges when it comes to IoT implementations. Figure 3 shows the top challenges faced by organizations that have an IoT solution in place and the rest of the market.

FIGURE 3
What Are Your Main Reasons for Deploying IoT?



Source: IDC, 2017

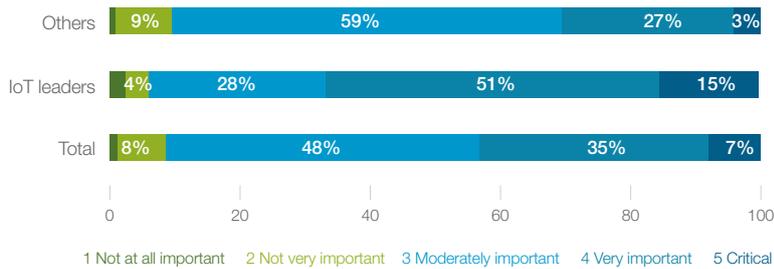
Overall, when it comes to challenges, security and privacy concerns are top of mind (55%), followed by deployment complexity (44%) and the current infrastructure limitations (39%).

It is interesting to note that those organizations with an IoT solution in place are less concerned with security challenges (51%) compared with the rest of the market (57%). They are, however, putting more emphasis on deployment complexity than the rest of the market.

IoT is Transformational ...

When it comes to the perceived importance of IoT, there is a chasm between IoT leaders and the rest of the market. 66% of IoT leaders view IoT as very important (51%) or critical (15%) to their business, compared with 30% for the rest of the market. The fact that those who have a solution in place put more importance on IoT than those who do not is not a surprise. Understanding why certain organizations do not wish to pursue an IoT strategy is therefore crucial (see Figure 4).

FIGURE 4
How Important Is IoT for Your Business?



Source: IDC, 2017

IoT can mean different things to different organizations or decision makers. The strategic drivers are varied, as shown by our survey data. The level of understanding of IoT also shows a market split: some will have the vision and will want to make it happen immediately, while others need more time to realize the importance of IoT and the potential (or threat) for their business.

Regardless of their organization's IoT strategy or current deployment status, all executives should be aware that IoT is the single most important initiative in today's business world. IoT is truly transformational. Here's why:

- IoT is a step change within the technology world as we know it.
- It is bigger and it is deeper rooted into the very fabric of any organization, well beyond the IT department.
- Its potential benefits are far reaching and can be both internal (such as efficiency gains and revenue growth) or external (such as increased QoS, better supply chain integration, or reaching new customers).

Beyond this, through sensor-based data capture and analysis, IoT can allow any organization to gain visibility of buyer behavior, and proactively act on it beyond the point of transaction. In other words, it is a goldmine, a game-changer, and, for the foreseeable future, a differentiator. It is transformational.



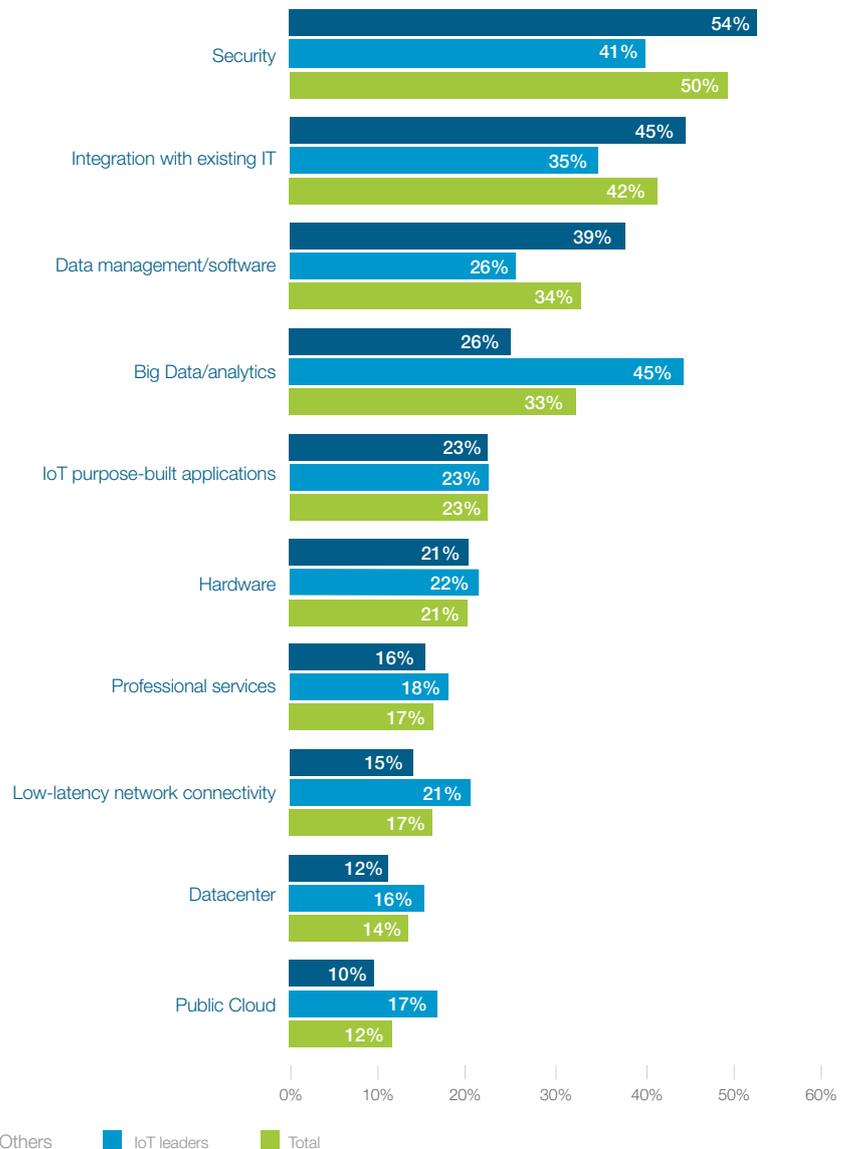
66%
of IoT leaders view IoT
as very important

IoT's Success is Embedded in a Solid Infrastructure Foundation

If you agree with our vision that IoT is transformational, don't think your job is done. Vision is only one thing that you have to have. As mentioned in the introduction to this paper, IoT is complex by nature due to the diversity and length of its value chain — from sensors to security. This complexity means that in order to deliver the anticipated benefits, all parts of the IoT value chain must work seamlessly.

FIGURE 5

What Are/Will be the Most Important IT-Related Elements of Your IoT Initiatives?



Source: IDC, 2017

But which part of an IoT value chain is the most important?

When asked, 50% of all respondents said security is the most important element of their IoT initiative, followed by integration with other IT systems (42%), data management (34%), and data analytics (33%).

The difference between those who are already doing IoT and the rest of the market is striking. IoT leaders are nowhere near as focused on security (41%) compared with the rest of the market (54%). In fact, Big Data/analytics is what they view as the single most important part of their initiative (45%, compared with 26% for the rest of the market), followed by security and integration with the rest of the existing IT infrastructure. Crucially, IoT leaders also rate low latency network connectivity (21%), datacenter infrastructure (16%), and public cloud (17%) much higher. This ought to be highlighted: executives with current and practical IoT experience rate the technology infrastructure as more important than those without practical IoT experience. Although often unseen, the infrastructure combining sensors, connectivity, cloud, and datacenter processing is where projects often fail or lose momentum.

The fact that IoT leaders — who have practical IoT implementation experience — attach more importance to the underlying technology infrastructure ought to make everyone else pay more attention. It is crucial for buyers to make the right decision as to their IoT infrastructure first. It is the bedrock on which the rest is built. Buyers need to know where, how, and how fast they can process the sensor-generated data. This has a real impact on where to host their IoT platform: current data Beyond the proof-of-concept and pilot phase, the sheer volume of IoT data as well as its velocity requires the need for filtering or "triage" near the edge of the network. Transferring all IoT to the (on-premise) datacenter is possible, but not necessarily the most efficient solution. The advantage of triage is twofold — it avoids any potential overloading of the network and it enables the fastest near- or real-time analysis and distribution of the crucial data that requires action.

One potential development would be the emergence and use of network-edge triage areas acting as a staging post between the network edge and the on-premise (or cloud-based) data management and processing platform.

This does not necessarily mean building such staging posts yourself, but hosting the platform in the right place, through a third party with the right infrastructure already in place. This would also bypass potential network latency issues (low latency being highlighted as very important by IoT leaders).

While Big Data engines and IoT platforms are the visible tip of the iceberg or the brain of the operation, the infrastructure made up of network connectivity, cloud, and datacenter processing is the cardiovascular system of your solution. As in the world of sport, all the skills in the world cannot overcome deficiencies in this area, especially when things (data) come at you fast and at scale.

In that sense, the infrastructure foundation is the first of many connecting steps that IoT decision makers must get right to achieve their goals.



IoT is the Killer App That Drives Digital Transformation

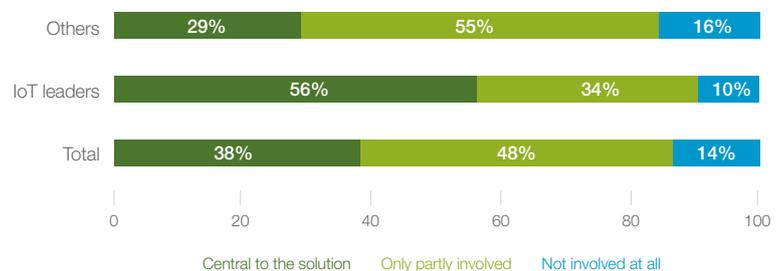
IoT is very important for most decision makers, but it should not become an ivory tower separated from other parts of the business and from other initiatives.

The Internet of Things draws on network connectivity, mobility or mobile access, cloud infrastructure, and Big Data/analytics. In fact, IoT is so dependent on all four of these areas that IDC argues it has become the killer app, and the main reason, to drive all these other initiatives in an integrated fashion. IoT cannot succeed without cloud or Big Data, for instance. The links run too deep. Building an IoT solution as an efficient silo, separate from the rest of the business, defeats the purpose: IoT is the business.

Our global IoT decision maker survey (September 2016, n = 1,160 in Europe) shows that while 28% of decision makers have an IoT initiative, 56% a cloud transformation project, and 26% a Big Data initiative, only 32% considered these to be running "somewhat integrated," with a further 42% saying they run "in parallel" and 14% "in silos." Clearly, there is a lot of work to be done to achieve the integration required with the rest of the infrastructure, which was considered the second most important element of our respondents' IoT solution (see Figure 5).

In addition, only 38% of organizations that deployed an IoT solution or have plans to do so view the cloud as "central to their solution" (48% view it as partially and 14% not at all involved). This figure is much higher for IoT leaders (see Figure 6).

FIGURE 6
What Role Does Cloud Computing Play in Your IoT Activity?



Source: IDC, 2017

This, to our mind, is explained by the relative immaturity of the market, and shows how far mindsets need to change before IoT can be considered mature. IoT can drive digital transformation within your organization by giving cloud and other initiatives a common and very practical purpose. When it comes to what type of cloud deployment is or will be part of the organization's IoT activity, we note the following differences:

- 48% of IoT leaders use a hybrid cloud model compared with 32% for the rest of the market.
- 40% of IoT leaders use a public cloud model compared with only 30% for the rest of the market.

So, Does Your Business Need Help When it Comes to IoT?

We assume that you were interested enough to pick up this document and to read it up to this point, so IoT must mean something to you. And we believe you probably fall into one of two IoT camps — the converted or the doubters.

If it is the latter, ask yourself this:

- Is your business efficient enough to ignore the potential benefits of IoT?
- Are you that confident you do not need to make improvements to your SLAs?
- Is your supply chain fully integrated and ahead of your competition?
- Do you consider yourself to be innovative enough to overlook this opportunity?

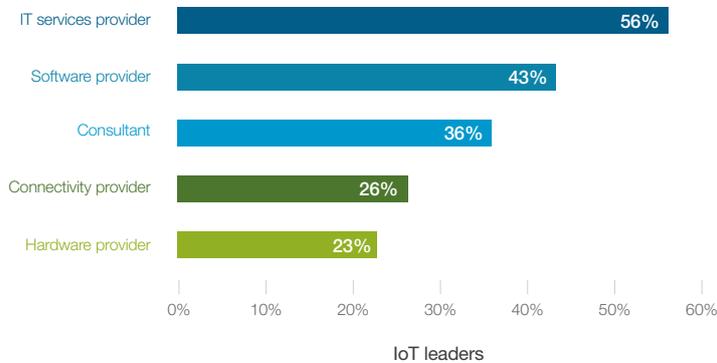
All the above are major reasons for IoT deployment. Can you afford to miss out? There is a lot of (warranted) skepticism when it comes to IoT. This is not surprising given its complexity — and it is often easier (at least for those 26% who reject IoT) to relent and do nothing than to embark on a long and often-protracted IoT-driven business transformation. However, looking back at Figure 2 and at the list of inhibitors mentioned by those who reject IoT, provides an element of hope, if not a call to action.

- We cannot see how IoT applies to our company (41%).
- There is no demand from our customers for this (37%).
- The business model or how we would make money is not clear to us (11%).

We do not have the right skills in-house or partners to enter the market (10%). All of the above inhibitors are easy reasons for opting out. Why? Because IoT does not necessarily mean a massive and costly solution with hundreds of thousands of sensors. IoT for your organization means the solution that is right for YOUR objectives. At the very least you need to explore the possibility of IoT transformation and hear from companies that have implemented IT (the IoT leaders). You do not have to "get the vision" at once, but you owe it to your business to source the right information to make an informed decision. This means engaging with vendors that have the necessary experience in your market, combined with IoT experience. This means starting a conversation — today.



FIGURE 7
Who Are Your Main Partners for Your Current IoT Activity?



Source: IDC, 2017



Why? Because your competition will not wait, your partners will find it easier to work with an "IoT-ready" company, the vendor community will manage to show you the ROI, and because you can source the skills externally (and integrate them within your business). That's why.

Just because you may not know who to approach when it comes to IoT does not mean you can afford to wait and miss out. Engage with whom you have the closest relationship, not as a client but as a technology partner.

Conclusion

IoT is complex and scary but it is also powerful and transformational. Clearly, many moving parts — from connectivity to cloud, to systems integration, to analytics to security (and many more) — need to work in unison and within your current or planned ICT framework.

From a market perspective, IoT divides the haves and the have-nots, but it shouldn't. All board-level executives should at least explore IoT, and those who believe they cannot afford to implement the required infrastructure (cardiovascular system) to sustain an IoT-based transformation should explore working with partners that can help. In this respect, the emergence of centers of excellence — or "API hubs," offering data processing close to the edge — could prove useful to accelerate or ease the adoption of IoT, especially at the mid to upper midmarket level.

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It is true that executives surveyed that have current and practical IoT implementation experience see analytics, security, and integration as the three most important elements of their IoT infrastructure. But they also viewed low-latency network connectivity, datacenter infrastructure, and public cloud as more important than their counterparts who are yet to embark on an IoT initiative. Infrastructure is therefore crucial — and often forgotten. The big decisions that need to be made regarding IoT now will have an impact over a long period.

Given the amount of data generated by the billions of IoT devices coupled with the speed with which it is generated poses problems in terms of connection and processing. Processing data, at least in part, close to the device is an imperative. The effectiveness of an IoT solution will not depend on the number of devices but rather on how they are connected, as well as where, when, and how the data they generate is processed.

Are you sure you have all the elements in-house to provide the right answer? Could you benefit from engaging with an external party? Could you benefit from a specialist vendor to help you find out what it possible? IDC believes you can maximize your company's potential through IoT-based technologies.

Finally, IoT will lead to a different type of economy. Will you embrace it and be part of the future, so you can help shape it? Or will you resist change and suffer the consequences in terms of competitive positioning, revenue growth, or market perception?

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