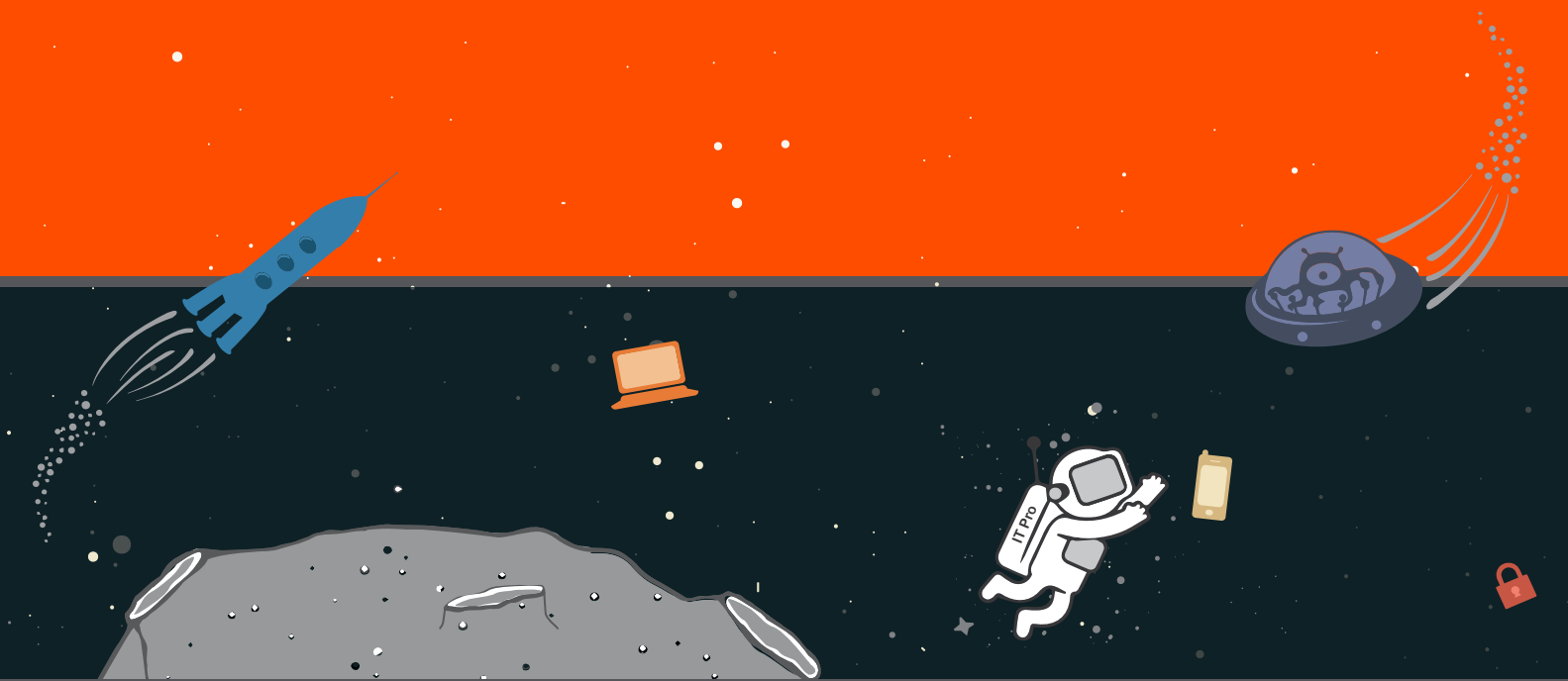


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The Devices are Coming!

How the “Internet of Things” will affect IT...
and why resistance is futile.



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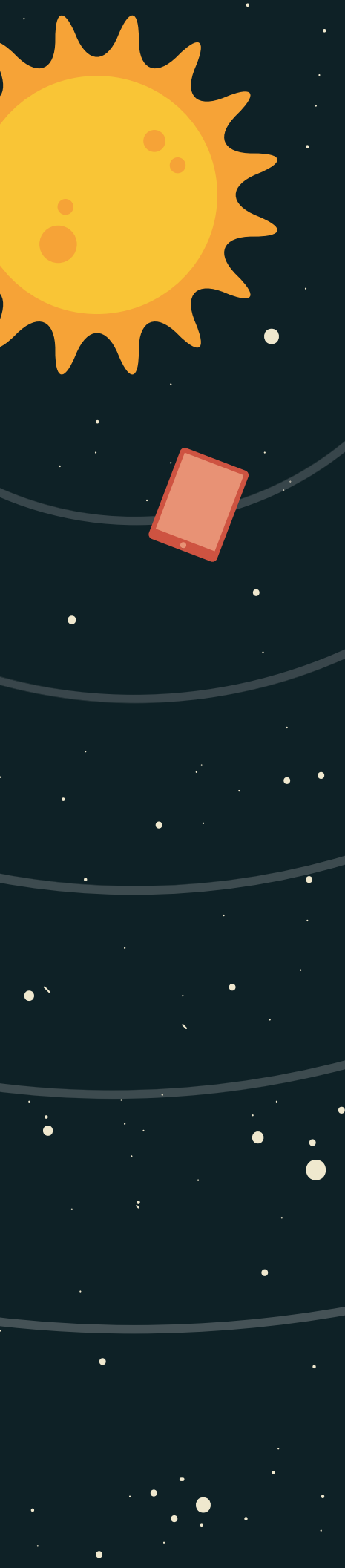


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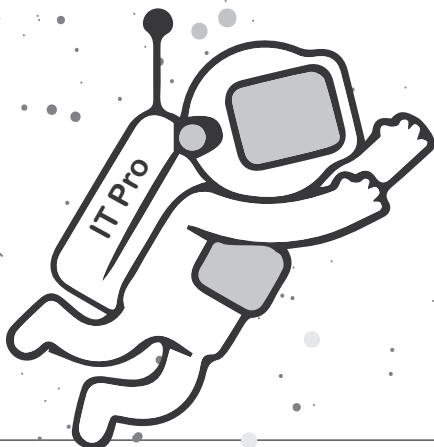
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“The Internet of Things (IoT) refers to a collective of Internet-connected consumer devices, manufacturing systems, business tools, customer service appliances, medical equipment, agricultural sensors and other things.”
– Deepak Kumar¹



THE DEVICE FLEET APPROACHES

▶ In a galaxy not so far away, a swarm of new Internet-connected devices makes its way into the IT atmosphere. The “Internet of Things” (IoT), however buzzword-y, is very real... and before you know it, it will be descending upon your network. We’re talking all types of “things,” from security cameras to projectors to thermostats to headsets... pretty much whatever you can think of that can be equipped with a tiny Internet-connected sensor to busily generate actionable data.

And in a realm already burdened by other trends like BYOD and big data – and their effects on bandwidth, connectivity, security and storage – the added impact of IoT is going to require an IT strategy... fit for the future!

According to the experts, despite the exploding numbers of devices we’re seeing in the workplace now – largely as a result of mobile computing and BYOD – we’re just seeing the opening act:

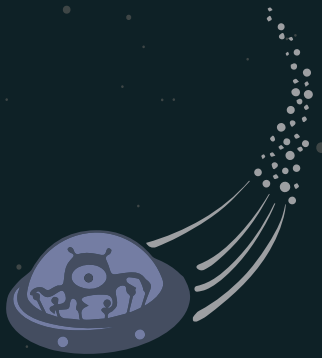
- Gartner forecasts that by 2020 IoT will have grown to over 26 billion devices²
- IDC puts the number closer to 30 billion, with an industry value of around \$8.9 trillion³
- Cisco estimates 50 billion “things” by 2050, with a value of \$14.4 trillion by 2022⁴

What’s it all mean for you, the IT pro? It means that before you know it, IoT will be invading your network and capturing resources that are already overwhelmed by ever-expanding user and data requirements.

To deal with the likes of that RoboCop dude in accounting with his armor of wearable tech, to the reams of data dumping into your lap from every conference room peripheral, you’ll need to bolster your infrastructure... and protect against threats posed by these new inhabitants of your domain. Got a plan?







SURVEY INFO

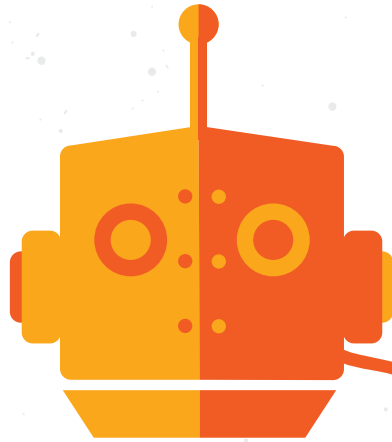
► On a quest to find out how seriously IT pros take the threat of impending IoT, Spiceworks asked 440 IT pros in North America and EMEA to share the current state of their infrastructure as well as their thoughts on IoT, its effects thus far, and how they're prepping for the coming onslaught of miscellaneous devices aimed at their networks.

What we learned... may surprise you.

KEY FINDINGS

- 1** Most IT pros agree that IoT will impact consumers in addition to the workplace. In fact, the vast majority believes the trend will pose significant security and privacy issues.
- 2** Even so, more than half say they aren't doing anything specific to brace their infrastructure for the coming impact of IoT.
- 3** Despite the divide between belief and targeted action, it turns out the future *is* now. Our survey found that many IT pros are already doing things that'll help support IoT – even if they aren't thinking of them in that context. But chances are... they should be doing more.

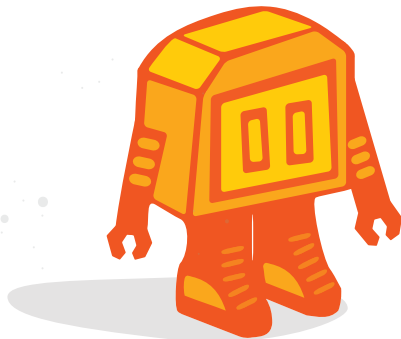
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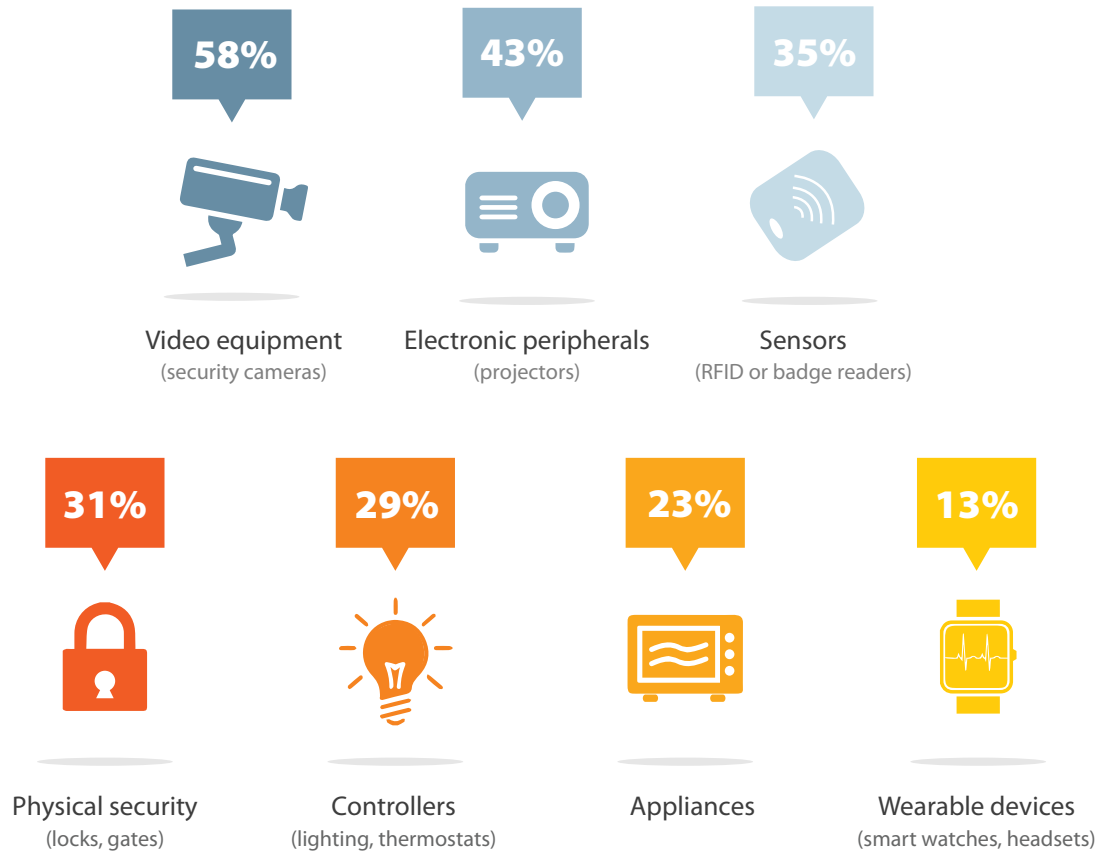
The Invasion of “Things” is Under Way

► As you likely know, alien devices have been permeating your network for a while, starting with BYOD – although laptops and smartphones were just the beginning.

The IT pros we surveyed are already supporting a wider variety of “things” on their networks, with video equipment at the top of the list and wearable devices at the bottom.

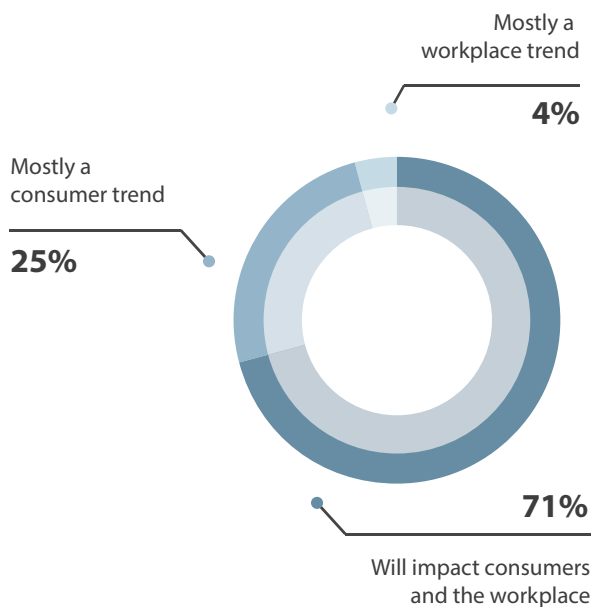


INTERNET-ENABLED “THINGS” CURRENTLY CONNECTED TO NETWORKS



While 71% percent of IT pros acknowledge that IoT will affect both consumers and the workplace, their actions seem to speak louder than their words... more than half state they aren't doing anything to prepare for impact.

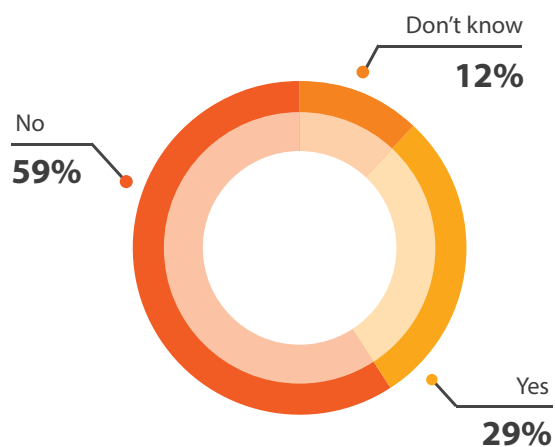
WHAT IT PROS BELIEVE ABOUT THE IMPACT OF IoT



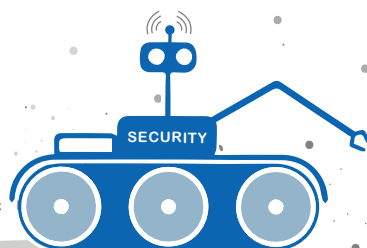
A key finding – and one possible explanation for this gap – is trepidation over IoT security and privacy issues, noted by 86% of IT pros.

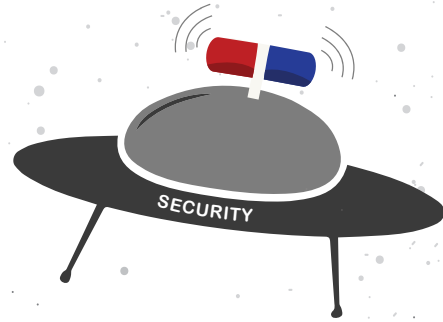
IoT means they'll be supporting more Internet-connected devices that will generate more data, hog more bandwidth, and hold more IP addresses hostage – in addition to putting company data at a higher risk of security attacks.

WHETHER IT PROS ARE PREPARING FOR IoT IN THE WORKPLACE

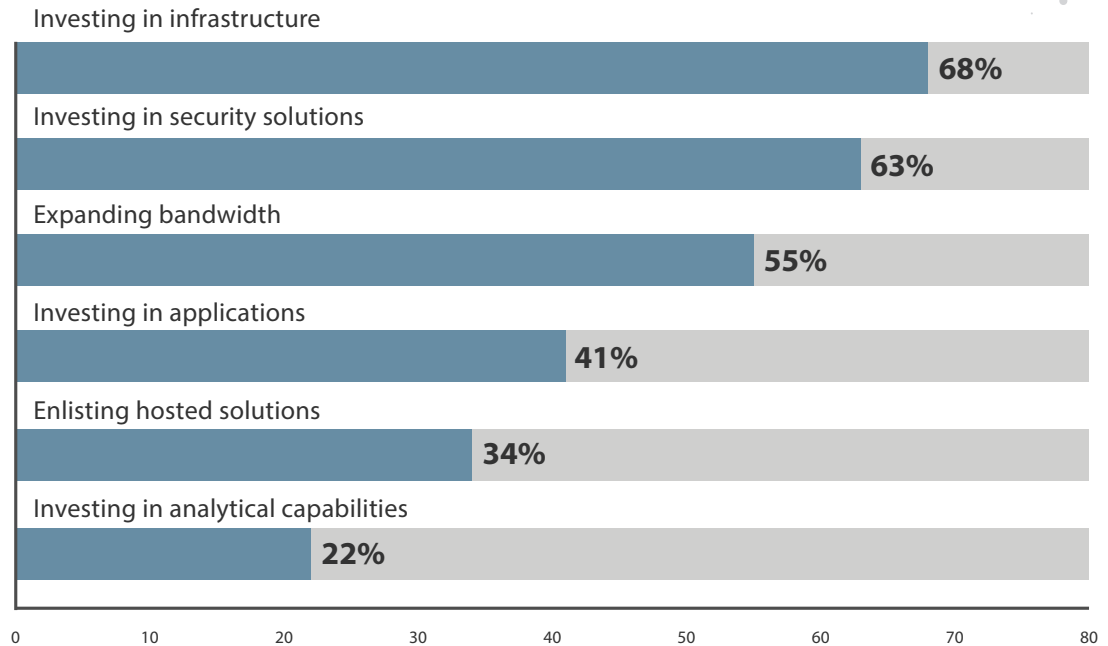


So it's pretty clear why infrastructure and security investments top the list of ways IT pros are preparing for IoT. In fact, security is so concerning that 43% plan to relegate new Internet-enabled "things" to a separate network; only 23% plan to allow them on the corporate network.

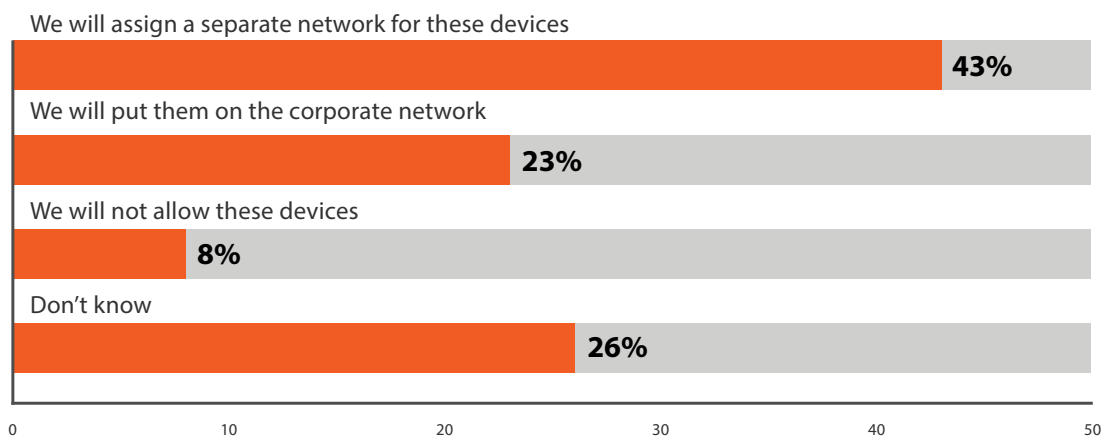




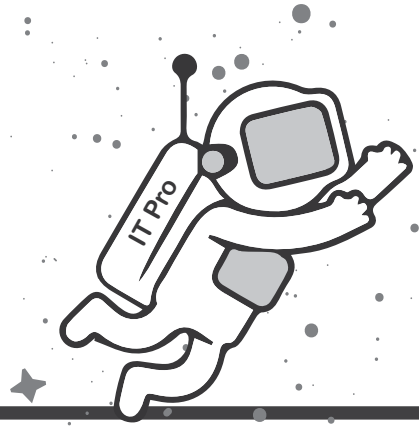
TOP WAYS IT PROS ARE PREPARING FOR IoT



HOW IT PROS PLAN TO HANDLE CONNECTIVITY OF NEW INTERNET-ENABLED "THINGS"



02



You're Better Equipped Than You Think

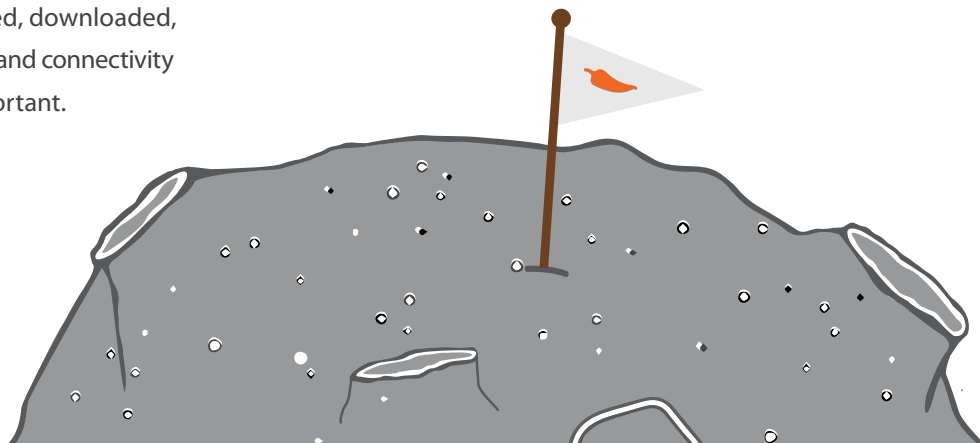
► Even IT pros who fall into the “not actively preparing for IoT” category are more ready than they might realize. Our survey revealed that many IT pros are inadvertently paving the way for IoT in the workplace.

WARP SPEED INTO THE FUTURE

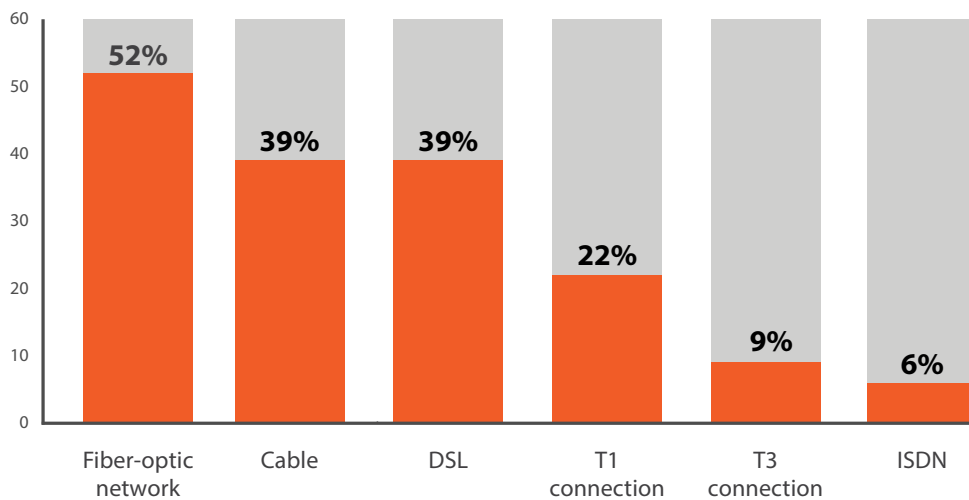
As growing numbers and various types of devices flood the network – generating actionable data to be uploaded, downloaded, analyzed, etc. – Internet speed and connectivity will become increasingly important.

It's a good thing more than half of IT pros are already using fiber-optic networks, the latest and greatest Internet technology.

But many still have a ways to go, with almost 40% still using relatively slower cable or DSL... and others still using (*GASP*) T1 and ISDN connections.



HOW IT PROS KEEP USERS CONNECTED

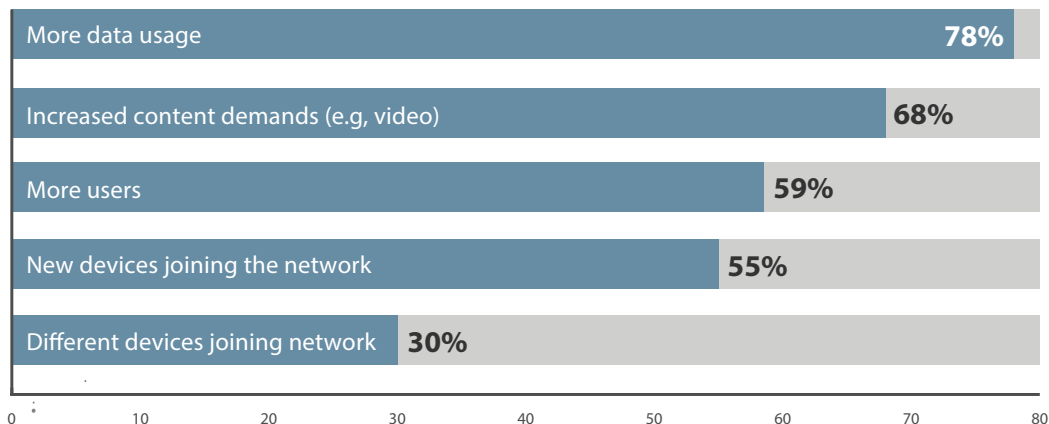


Considering how hungry connected devices are for bandwidth, the need for bigger pipes to push all of those 1s and 0s through the atmosphere will only intensify. A whopping 98% of IT pros agree their company's demand for bandwidth has nowhere to go but up over the next five years. Almost 80% think the top driver will be more data usage, 68% think increased content demands, and 59% say more users – all areas that will no doubt contribute. That's

interesting: Less than a third believe different types of devices connecting to their networks – beyond “anything” we're seeing now – will factor in.

If you're in this camp, you may need to reconsider; if analyst predictions are correct, 30 billion new Borg-like “things” will be joining networks and eating bandwidth... so you're going to need a connection you can trust.

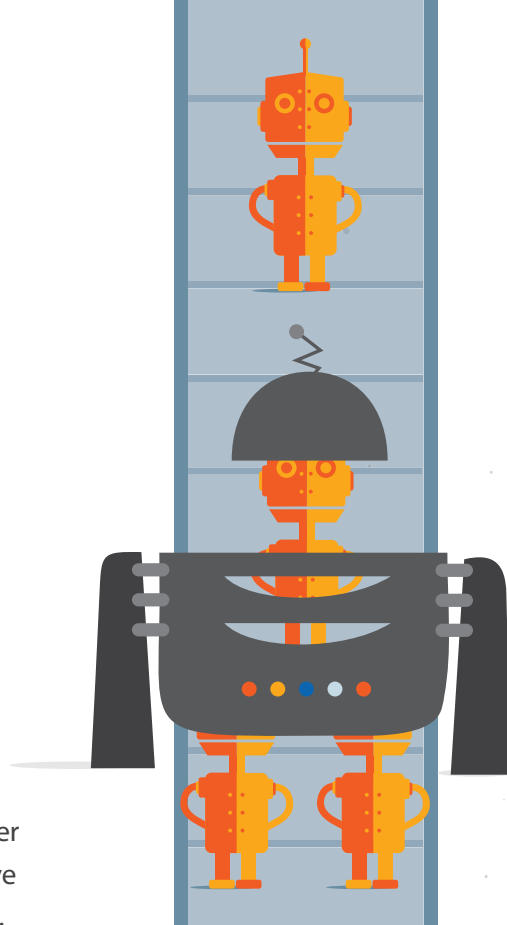
TOP FACTORS IT PROS BELIEVE WILL INCREASE BANDWIDTH REQUIREMENTS



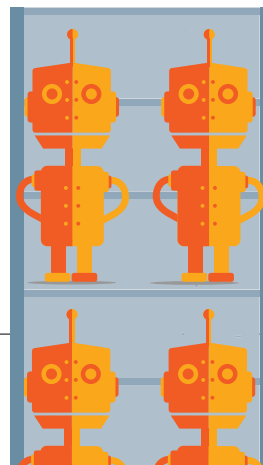
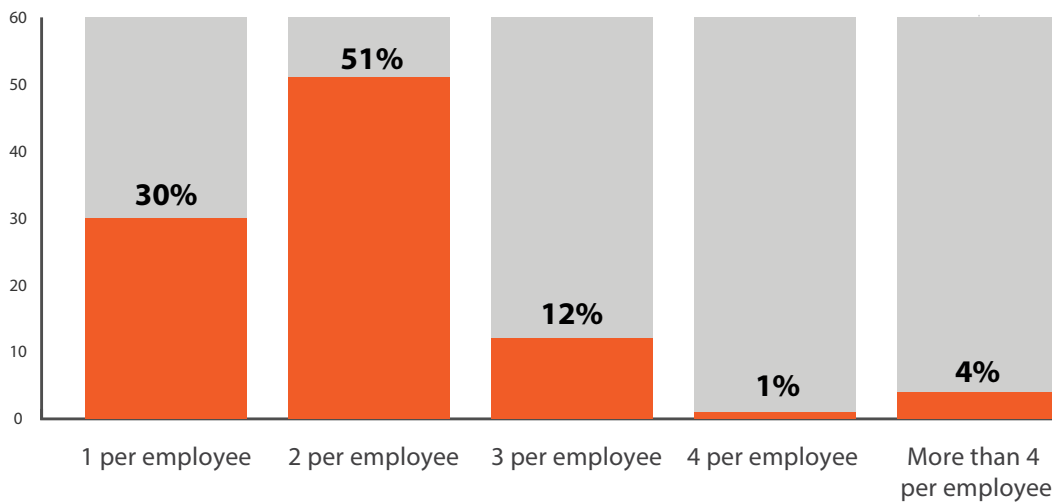
THEY'RE MULTIPLYING!

Remember the good ol' days, when you only had to manage one computer per employee... and it was docked at a desk? A distant memory.

Thanks to a little trend called BYOD, less than a third of IT pros still support just one device per employee, but almost 70% support two or more devices per user. And 61% believe the number per employee will continue to grow over the next five years – yet another indicator of “things” to come.



NUMBER OF DEVICES (PERSONAL OR COMPANY-OWNED) SUPPORTED PER EMPLOYEE

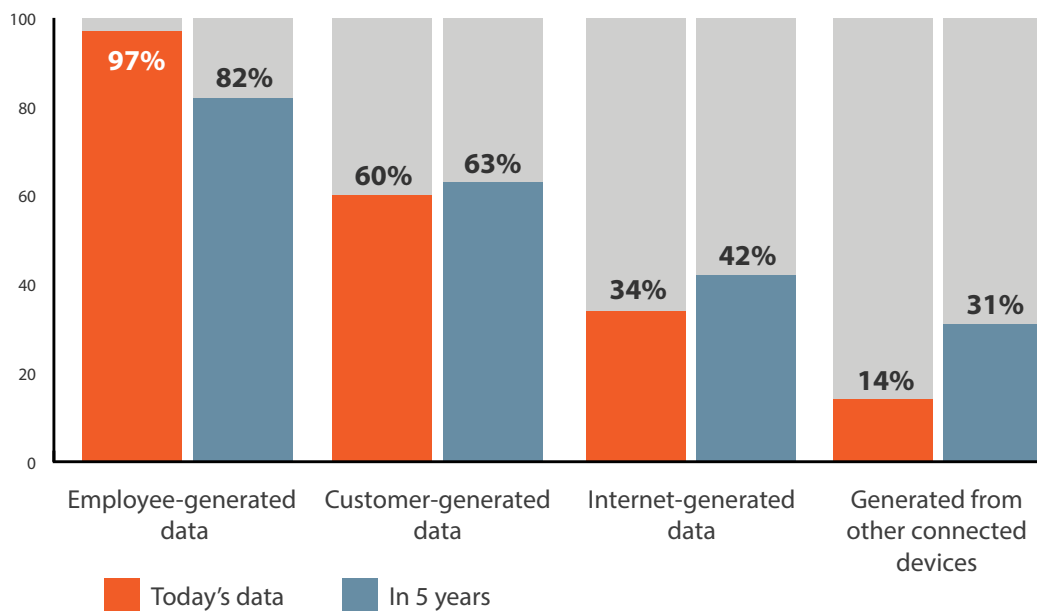


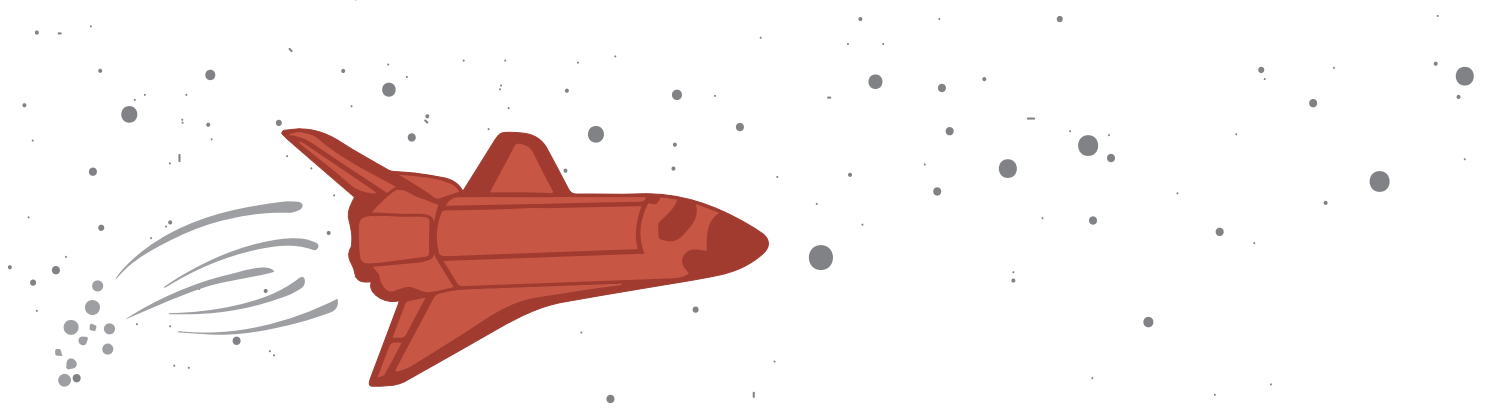
BIG DATA? HOLD ON TIGHT...

With the number of new devices projected to skyrocket, and all of them generating actionable intelligence, *big data* might soon be *holy-moly-that's-a-lot-of-data...* data. Where is today's data coming from, and how will that change? And where in the world are you going to put it all?

According to IT pros, 97% of today's stored company data is generated by employees and 60% is generated by customers. While other "things" connected to their networks currently only account for 14% of stored data, this number is set to blast off.

ORIGINATION OF TODAY'S STORED DATA VS. PREDICTIONS FOR THE FUTURE

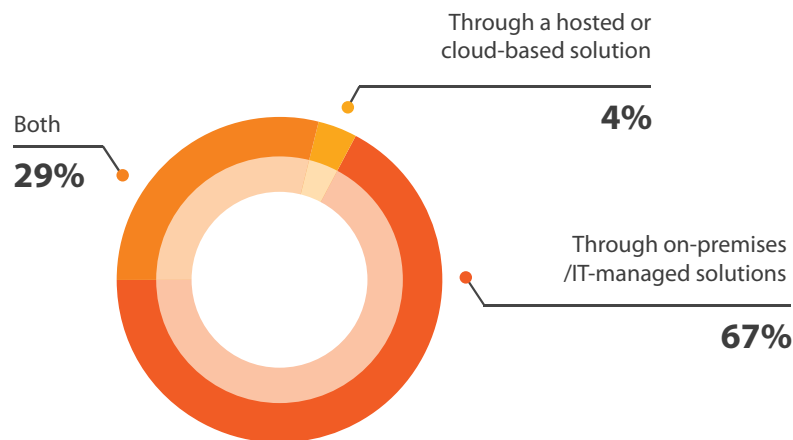




IT pros do expect data from these sources to shift over the next five years and the amount generated from “things” to more than double. However, they seem to be underestimating how much data could be generated from the sheer volume of new devices headed their way. For example, sensors and beacons are increasingly used to gather customer and employee data – data they’re not currently used to storing.

Especially in machine-intensive environments like hospitals, the amount of data flooding in could be epic. This is a red flag, since most IT pros still house company data on-premises – which requires more infrastructure investment to scale than hosted solutions. A third, however, are using hosted solutions for at least some of their data storage.

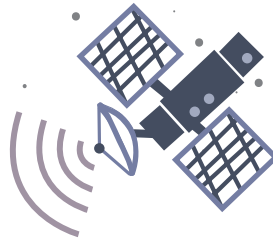
HOW IT PROS CURRENTLY STORE COMPANY DATA



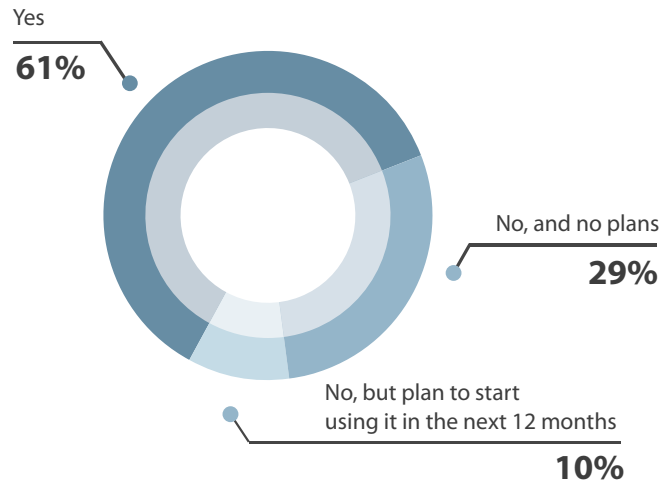
SUMMON REINFORCEMENTS

IT pros are going to need all the help they can get managing and storing the data generated from billions of new Internet-enabled devices... so it's a good sign that nearly three-fourths have already started moving or are planning to move their IT infrastructure to the cloud. But again, not everyone is walkin' the talk.

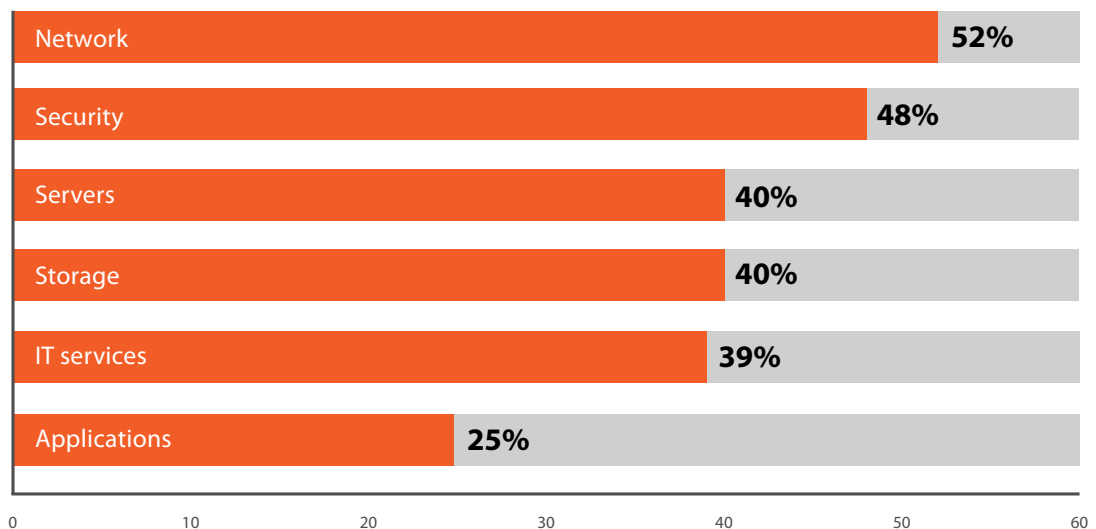
While almost 60% of IT pros predict their use of hosted solutions will grow in the next five years, many don't want to move certain IT functions offsite – ever – including giants like network (52%) and security (48%). If you plan to keep these functions in-house, now would be a great time to start investing in additional infrastructure... before the full impact of IoT descends upon you like an alien zombie horde out for your resource brains.



CURRENT USE OF HOSTED INFRASTRUCTURE OR APPLICATION SOLUTIONS



IT FUNCTIONS THAT IT PROS WON'T CONSIDER MOVING OFFSITE



03



...But Don't Let Your Guard Down

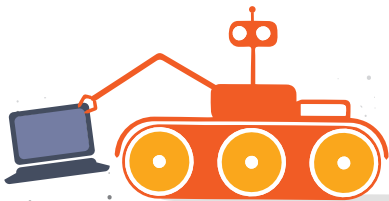
► There's no question that the Internet of Things will present challenges for IT. If you're still resistant to joining the IoT alliance, consider this: When tons of new Internet-connected devices try to access your network simultaneously, what's going to happen?

How much will it slow down employee productivity, and how much harder will it be to protect your network from malware and other security threats? And what about streaming data from security systems or humidity-controlled server rooms... does your current storage strategy account for all this extra data?

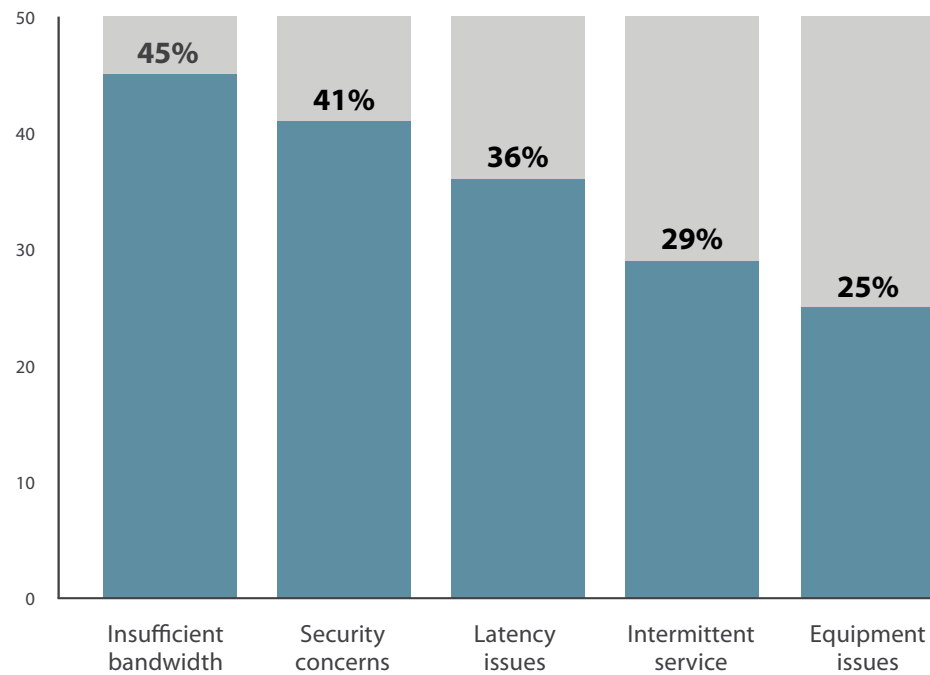
IT pros are already dealing with plenty of connectivity issues today: 45% have challenges with insufficient bandwidth, and 41% have issues with security.

The same goes for storage, with 63% citing budget constraints as their top challenge and limited storage space as the runner up at 54%. And that's *before* more data comes pouring in from the rapidly growing number of connected "things"... including company data that your infrastructure will need to host.

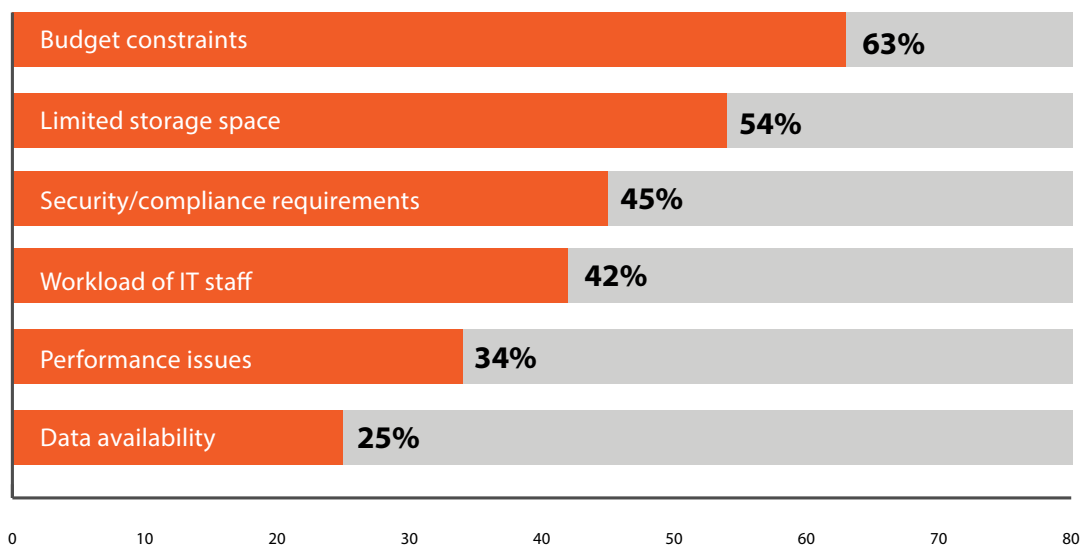
The connectivity and storage challenges IT pros are experiencing today will only compound as IoT gains momentum. In other words: The time is **now** to brace your infrastructure for the coming IoT impact.



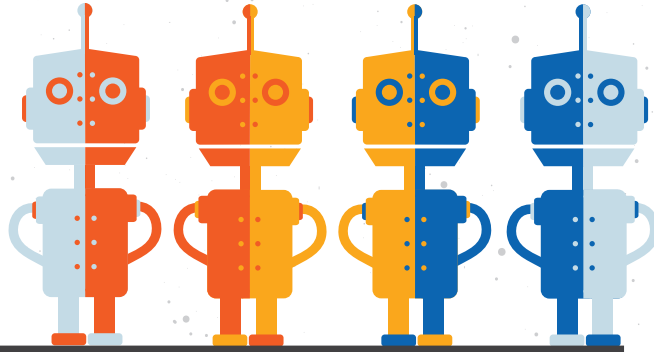
TOP CHALLENGES WITH KEEPING USERS CONNECTED



TOP CHALLENGES WITH STORING COMPANY DATA



04



Face the Future (One IT Decision at a Time)

MAY THE IoT FORCE BE WITH YOU

► There's no Jedi mind trick that'll make the incoming fleet of Internet-connected devices turn around. But the Internet of Things isn't going to take over your network overnight. It's happening gradually, and hopefully – thanks in part to this report – it's now more than just a blip on your radar.

You've already experienced the first wave, as BYOD has introduced growing numbers of employee-owned devices. Up next may be temperature sensors in building thermostats, or a pumped-up HD security system with streaming video and months of stored footage. Smart light sabers, anyone?

Whatever it is, it's clear the IoT trend will have a significant impact on IT. And while the majority of IT pros said they're not taking steps to actively prepare their infrastructure for IoT, our survey indicates this isn't the whole story. Based on our survey results, many of you are heading the right direction through steps you've taken to address other IT issues.

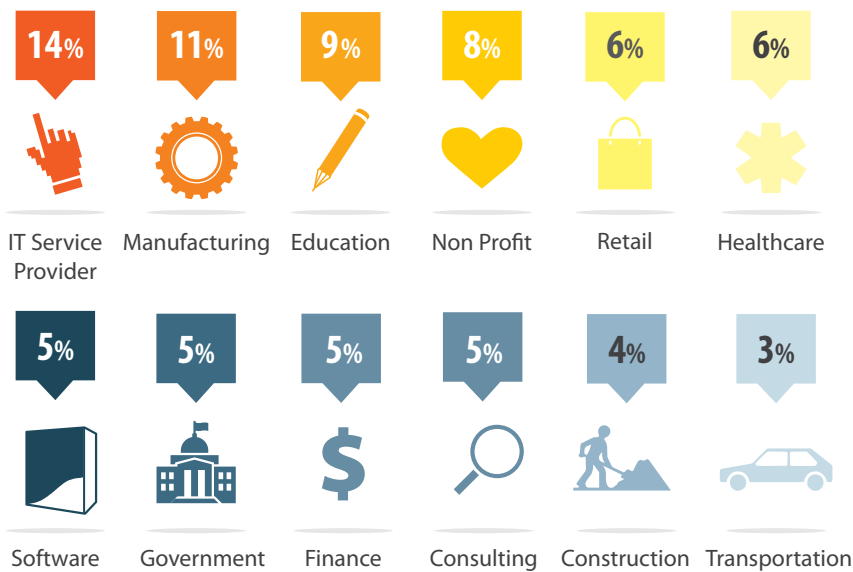
The way to arm your infrastructure for IoT: One IT decision at a time... with your eye on the galaxy beyond. But don't take it too slow; someday soon your boss is going to cruise into your office and ask you to admire – and support – his Google Glass... and it would probably be a good idea to have an action plan.

Details on the Data

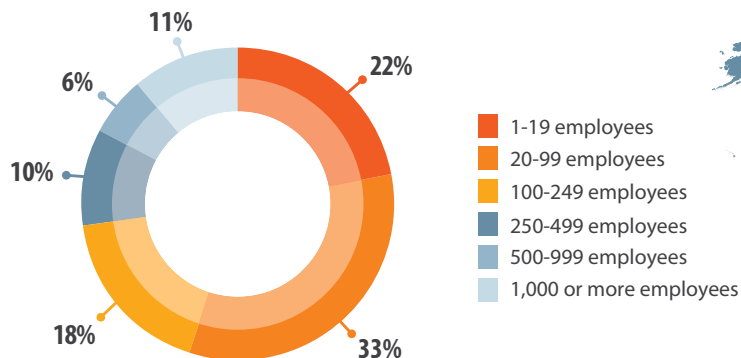
You've just read Spiceworks' version of data gone spicy: Our answer to humdrum data. We tackle the tech issues of today... and what's coming soon to a server room near you.

And we deliver it all with more originality and spice than your typical run-of-the-mill reports. Drawing from a user base of more than 5 million IT pros, it's a glimpse into tech you can't get anywhere else!

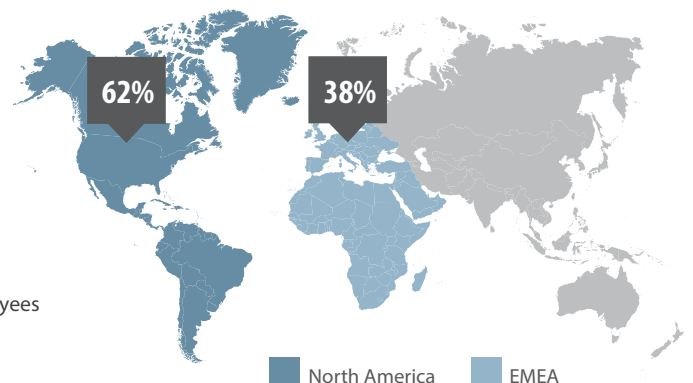
INDUSTRY (Top 12 industries shown)



COMPANY SIZE



REGION



SOURCES

¹ Deepak Kumar, "Internet Of Things May Strangle Enterprise Bandwidth," InformationWeek Network Computing, December 26, 2013. <http://www.networkcomputing.com/networking/internet-of-things-may-strangle-enterprise-bandwidth/a/d-id/1113241>

² Peter Middleton, Peter Kjeldsen and Jim Tully, "Forecast: The Internet of Things, Worldwide, 2013," Gartner, November 18, 2013. <https://www.gartner.com/doc/2625419>

³ "IDC Predicts 2014 Will Be a Year of Escalation, Consolidation, and Innovation as the Transition to IT's '3rd Platform' Accelerates," International Data Corporation (IDC), December 3, 2013. <http://www.idc.com/getdoc.jsp?containerId=prUS24472713>

⁴ Joseph Bradley, Joel Barbier and Doug Handler, "Embracing the Internet of Everything To Capture Your Share of \$14.4 Trillion," Cisco, 2013. http://www.cisco.com/web/about/ac79/docs/innov/loE_Economy.pdf

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