

INDUSTRIAL IOT

IN THE TIME OF COVID-19:
ELECTRICAL UTILITIES





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HOW MATURE IS IOT AT YOUR ORGANISATION?

Inmarsat's free IoT maturity tool helps you compare your organisation's IoT maturity with our respondents and your competitors. Your personalised report also explains what you need to do to improve your score.

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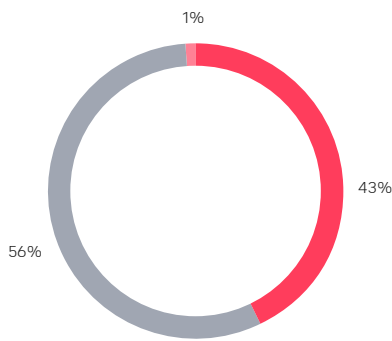
METHODOLOGY

The Inmarsat Research Programme is now in its fifth year, with this 2021 report providing an update on how the industrial Internet of Things (IoT) is being adopted by organisations across the agriculture, electrical utilities, mining, oil and gas and transport and logistics sectors.

Specifically, this report looks at the impact of Covid-19 on IoT adoption, as well as challenges related to connectivity, skills, security, data and investment.

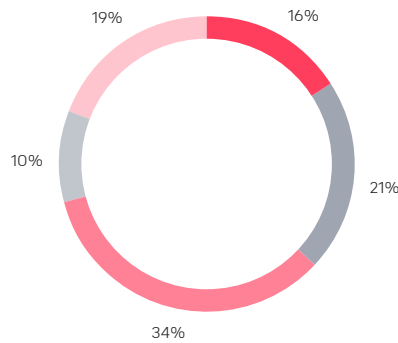
To understand this Inmarsat commissioned Vanson Bourne, a specialist technology market research company, to interview 450 respondents in early 2021, a year after the start of the pandemic.

Respondents work for organisations with at least 250 employees and are drawn from various global regions including the Americas, EMEA and Asia-Pacific. All of those surveyed are responsible for delivering IoT initiatives at their respective organisations.



Respondents by sub-sector (%)

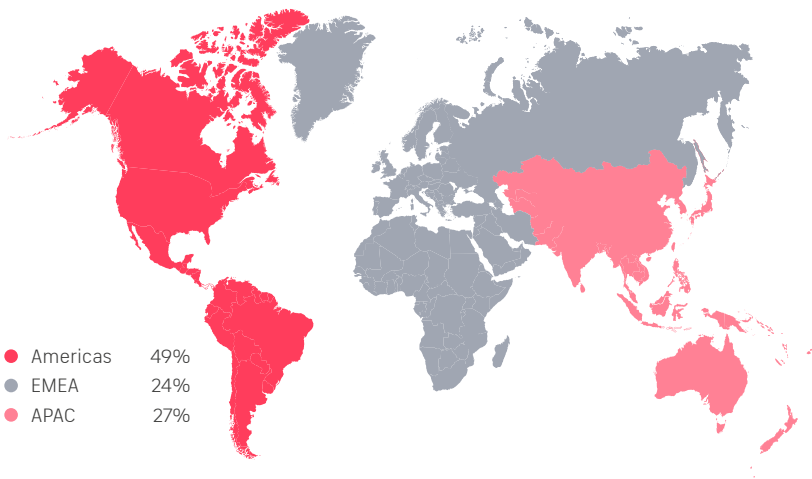
- Energy suppliers
- Energy distribution network operators
- Other



Respondents by size of organisation (%)

- 251-500 employees
- 501-1,000 employees
- 1,001-3,000 employees
- 3,001-5,000 employees
- More than 5,000 employees

Respondents by region (%)



- Americas 49%
- EMEA 24%
- APAC 27%

EXECUTIVE SUMMARY

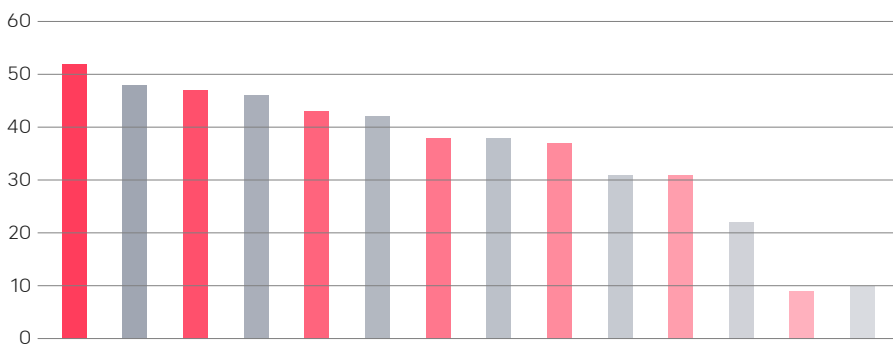
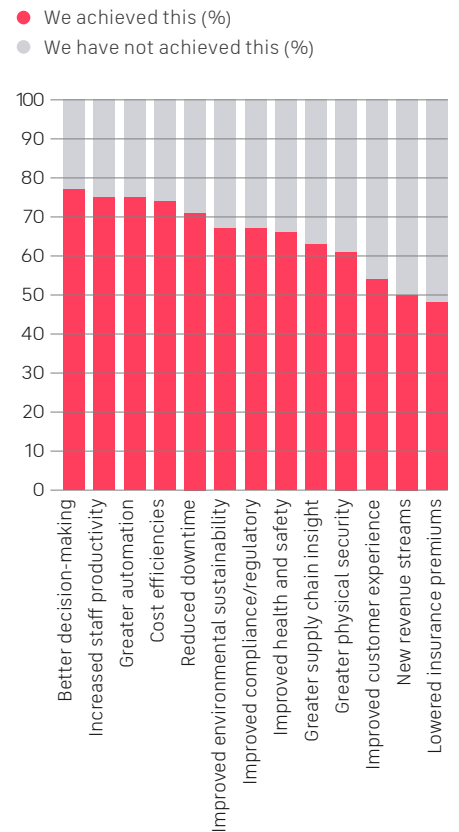
Humans have been consuming more energy year on year. Electric vehicles, growth in industry and an emergent global middle-class are some of the key factors behind this phenomena. By 2040 the International Energy Agency expects global energy to increase by 37 per cent.¹ In response, energy producers and distributors have been implementing digital technologies to boost their efficiencies and meet this demand.

Lockdowns caused by the Covid-19 pandemic in 2020 caused electrical consumption in many parts of the world to drop 20 per cent from 2019 levels, before they came back to pre-Covid levels as societies opened up again.² While residential energy demand increased, it did not counterbalance the drop in use amongst commercial operations. While this period was unexpected and somewhat unprecedented, it has only underlined the importance of energy producers and distributors being able to effectively monitor and control their operations.

The ability to cope with these massive changes in demand was mitigated by work the industry has been undertaking over the last two decades. Many utilities companies have adopted digitalisation to develop new ways to monitor, manage, automate and improve the cost of production, their environmental footprint and the reliability of energy being supplied to businesses and consumers. The industry's approach has been to invest heavily in automation, command and control and communications technologies - the Internet of Things (IoT) - accelerating the evolution of ever 'smarter' electricity generation and distribution networks.

Unlike the traditional electrical grid, which was a 'one-way' system with power going from the grid operator to the customer, without any feedback and data going back to the provider, the modern 'smart' grid is a 'two-way' system. This is helping to overcome the financial costs of locating and fixing points of failure, outages and inefficient loadbalancing. The end result is more efficient operations, leading to better customer experience and compliance

How would you score your organisation's achievement of expected benefits of IoT projects?



What are the most important drivers for the deployment of IoT projects for your organisation?

● Cost efficiencies	52%	● Improve customer experience	38%
● Better decision-making	48%	● Reduced downtime	37%
● Increase staff productivity	47%	● Greater physical security	31%
● Improve environmental sustainability	46%	● Greater supply chain insight	31%
● Improve health and safety	43%	● New revenue streams	22%
● Improve compliance/regulatory	42%	● Lower insurance premiums	9%
● Greater automation	38%	● Other	10%

with government stipulated regulations around uptime and outages. Increasingly common IoT use cases such as distribution automation, using remote control reclosers, or advanced metering infrastructure (AMI) via smart meters provide utilities companies more opportunity to offer value back to consumers, through accurately tracking, forecasting and planning their energy consumption. Utility companies are expected to save \$157 billion in costs from smart meters alone by 2035, according to recent forecasts.³

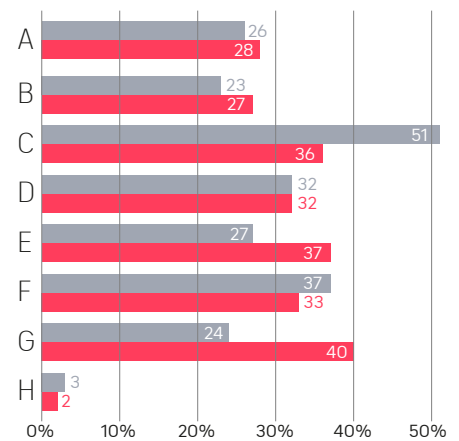
Reliable and secure connectivity is a vital enabler for supporting these technologies and organisations are using a blend of connectivity types to provide the ability to receive this data, often in real-time. While satellite was ranked as an important enabler its adoption remains lower than some terrestrial types, although this may be set to change given the dissatisfaction expressed by respondents for cellular and fibre to connect IoT projects. 58 per cent of businesses are still struggling to deploy IoT because of unreliable or inconsistent connectivity in the areas they wish to introduce it, and satellite could play a key role in supporting this process.

As with all industries, Covid-19 has also served to accelerate digital transformation and IoT adoption across the electrical utilities sector. Nearly half of respondents (48 per cent) claim that challenges related to the pandemic have

underlined the importance of IoT and automation to business success. The same proportion (48 per cent) have accelerated IoT deployment in direct response to challenges associated with the pandemic, with an additional 36 per cent intending to start to accelerate their IoT projects over the next two years for the same reason. Overall, our research finds that the sector is reaching relative maturity in terms of IoT adoption levels, with 80 per cent of all organisations having fully deployed at least one IoT project. Larger organisations, as well as those in North America, Europe and APAC are the most advanced in terms of IoT adoption levels and planned IoT investments. However, despite the high level of maturity there are still a number of challenges ahead for the sector to ensure businesses get the optimal benefit from their IoT investments.

The sector is incredibly cyber-security conscious due to its position in a nation's critical infrastructure backbone and this theme factors into respondents' thinking at almost every stage of our survey. Security implications are cited more highly as a barrier to IoT deployment than in any other sector. Security is also the biggest concern prohibiting data sharing. Additionally the most desired skills are in cyber-security. The positive side of this cyber-security conscious outlook will see the sector respond in-step with emerging threats - the challenge may be to share data to drive value chain efficiencies.

"The International Energy Agency expects global energy demand to increase by 37 per cent by 2040."



What barriers, if any, does your organisation face in the deployment of IoT projects?

- A Lack of consistent and reliable connectivity
 - B Lack of available capital to invest in IoT projects
 - C A lack of in-house skills
 - D Lack of turnkey/off-the-shelf solutions
 - E IoT not being prioritised by the board
 - F Security implications
 - G Integrating IoT technology with existing platforms
 - H Not encountered any barriers at this stage
- Encountered in the deployment phase
● Encountered/expect to encounter this once deployed

¹ <https://www.iea.org/reports/world-energy-outlook-2020>

² <https://www.iea.org/reports/covid-19-impact-on-electricity>

³ https://www.smart-energy.com/industry-sectors/data_analytics/iot-for-utilities-harnessing-big-data-from-grids-edge

ADOPTION

The electrical utilities sector is reaching maturity in IoT adoption, with 80 per cent of organisations having fully deployed at least one IoT project to date. The last year has seen a notable acceleration in adoption, with 42 per cent of respondents having fully deployed over the last 12 months. The remaining 19 per cent of respondents are either currently trialling IoT projects, or plan to deploy them within the next two years.

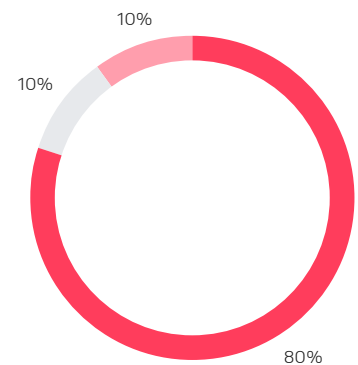
There are a number of key drivers motivating the sector to deploy IoT projects. Improving cost efficiencies is the most frequently stated reason, cited by 52 per cent of respondents. Not far behind is better decision making (48 per cent) and increased staff productivity (47 per cent), followed by improvements in environmental sustainability (46 per cent), health and safety (43 per cent) and compliance (42 per cent). There is some regional variation in these areas, with 71 per cent of respondents in North America citing improvements in environmental sustainability as a key driver for the deployment of IoT projects, compared to only 23 per cent in Europe. Plus, there are also differences between sub-sectors, with 54 per cent of energy generators citing greater automation as an important IoT driver, compared with only 26 per cent of network operators.

Greater automation, as well as achieving improvements in environmental sustainability and health and safety, are also higher priority IoT drivers for larger organisations. 78 per cent of respondents from organisations with 3,001 to 5,000 employees cite greater automation as a key IoT driver, while 71 per cent of businesses with over 5,000 employees cite improved health and safety.

In terms of use cases, the high level of maturity in the sector is reflected in the adoption rates of specific IoT projects. 56 per cent of energy network operators have either deployed or are currently trialling IoT in recloser monitoring and control, 40 per cent in substation monitoring and energy generation, and 38 per cent in vehicle tracking and people tracking to enhance health and safety. For energy suppliers substation monitoring (54 per cent), energy generation (51 per cent) and metering backhaul (46 per cent) were the most common IoT projects adopted.

Despite high levels of adoption, there are still a number of key barriers to IoT deployment, largely related to issues with skills, security and a perceived lack of suitable IoT solutions. During the deployment phase of an IoT project, 51 per cent of respondents said that a lack of in-house skills was a problem, 37 per cent cited security implications and 32 per cent said a lack of turnkey or off-the-shelf IoT solutions was an issue. The number of respondents indicating that both skills and security were barriers to optimally deploying IoT are higher than any other sector we interviewed. Once projects were deployed, the two main barriers utilities companies encountered were integrating IoT technology with existing platforms (40 per cent) and IoT not being prioritised by the board (37 per cent).

Overall, the majority of respondents have either already achieved, or expect to soon achieve the benefits of IoT in terms of increased staff productivity, better decision-making, greater automation, improved environmental sustainability and greater supply chain insight. However, while these findings are encouraging, there is still plenty of work to be done by utilities businesses in the coming years to maximise IoT's potential. For example, 37 per cent say their IoT projects have not yet led to an improved customer experience, while 36 per cent say they have not yet attained enhanced physical security.

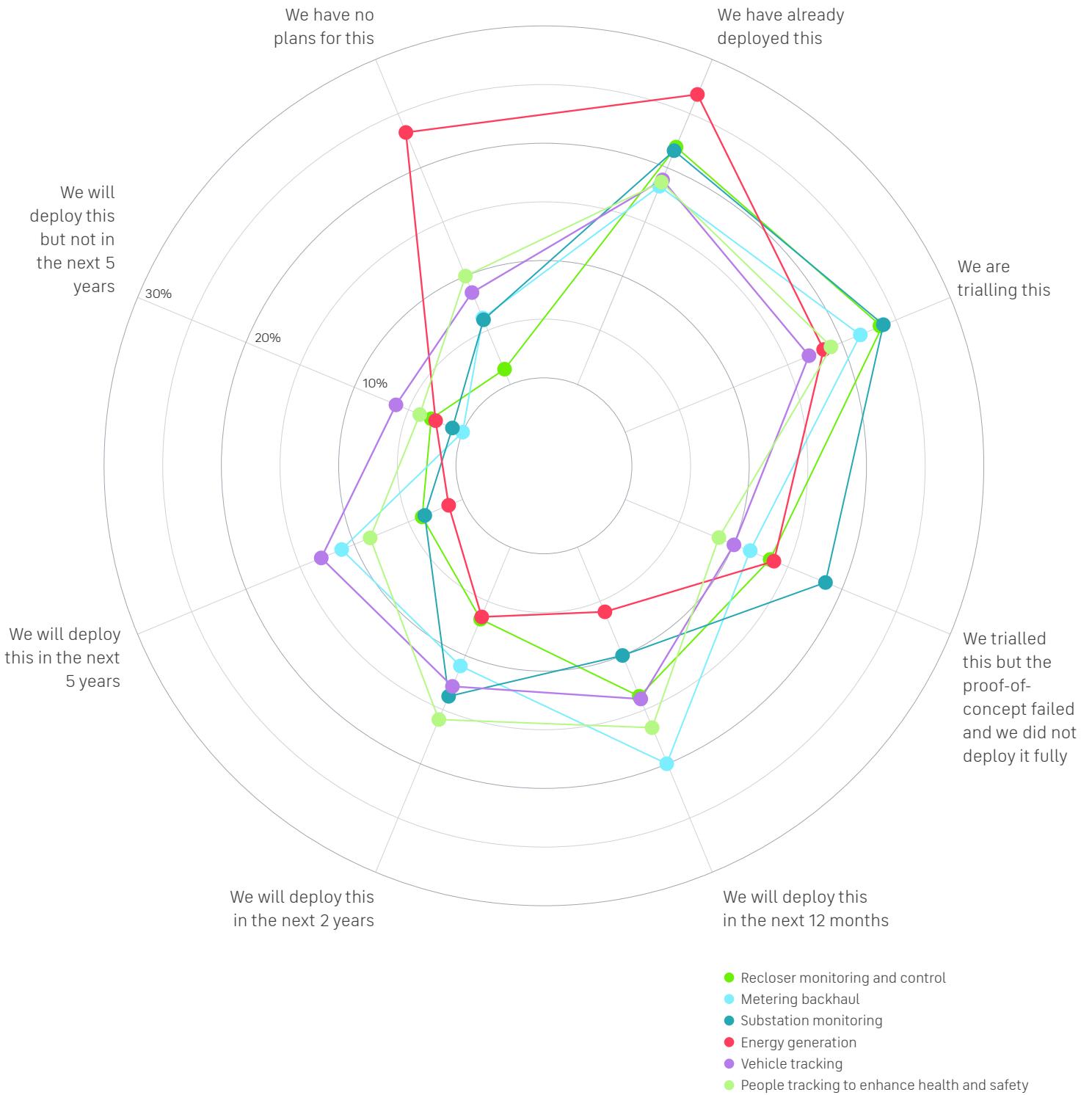


What is your current status in terms of deploying IoT projects?

- Fully deployed
- Currently trialling
- Planning to trial within 12 months

"48% of electrical utilities organisations have a formal IoT strategy."

What IoT projects has your organisation already deployed and what will your organisation deploy in the future?







CONNECTIVITY

Our results reveal that connectivity continues to be a key barrier to IoT adoption in the sector, as the industry continues to shift from the traditional unidirectional grid towards a smarter grid. The majority (59 per cent) of electricity suppliers and 36 per cent of energy network operators say that public terrestrial networks such as cellular or fibre are either not really or not at all suitable for their needs in order to deploy IoT projects. This figure increases to 85 per cent in Latin America, highlighting the particular need for reliable, non-terrestrial connectivity for businesses servicing highly remote and rural areas where terrestrial connectivity is either unreliable or non-existent.

While this view on terrestrial connectivity may be held by many respondents, the connectivity types being used in IoT projects do not necessarily follow this thinking. From a long range connectivity perspective, public cellular networks are the most popular choice (38 per cent), followed by radio (36 per cent), and fibre (34 per cent). These responses likely reflect a focus on static assets in relatively populous areas, as with a distribution grid for a city; however, it is evident that for IoT projects in remote areas, where these connectivity types may not be suitable, another approach is needed.

Our respondents stated that satellite is only in use in 32 per cent of organisations across the sector as a whole (rising to 38 per cent amongst electricity suppliers). The use of satellite in IoT projects is notably lower in the electrical utilities sector in comparison with all the other industry sectors we interviewed, where it averages 47 per cent across the board. This was an interesting finding and suggests satellite suppliers need to do more to work with electrical utilities companies to educate and build the right solutions. Regionally satellite usage was greater in APAC and Latin America than in North America where public cellular usage was proportionately higher.

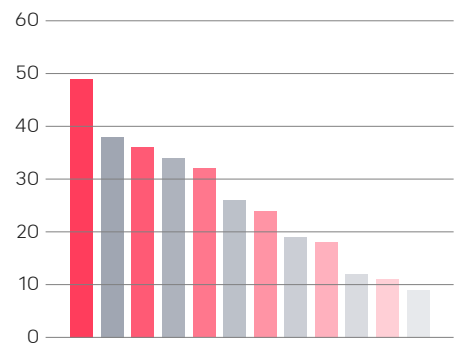
In terms of shorter range connectivity types, both energy suppliers and energy distributors remain heavily dependent on Wi-Fi (44 per cent and 52 per cent, respectively), which is still by far the most popular short-range connectivity type. Following this Long Range Wide Area Networks (LoRaWAN) and Bluetooth Low Energy (BLE) are being used by 19 per cent and 18 per cent of respondents respectively.

Connectivity issues continue to obstruct the successful roll-out of IoT projects by electrical utilities organisations, with 58 per cent of businesses still struggling to deploy IoT because of unreliable or inconsistent connectivity in the areas they wish to introduce it. 75 per cent of organisations encountered connectivity problems in the trial or proof of concept phase of IoT, while 62 per cent continued to discover connectivity challenges causing disruption after full deployment. However, once connectivity challenges are solved, 80 per cent of organisations in the sector have enjoyed more success with IoT.

Respondents displayed a range of preferences in what qualities they wanted from their IoT connectivity. Security (56 per cent) and reliability (48 per cent) are the most commonly cited, followed by network coverage (36 per cent), bandwidth/speed (32 per cent) and cost (30 per cent). With the sector prioritising secure connectivity over any other attribute, and more so than any other sector, it is surprising that the use of public cellular networks and Wi-Fi is so high. Other connectivity forms, such as L-band satellite, could provide more reliable, more secure and less contended options.

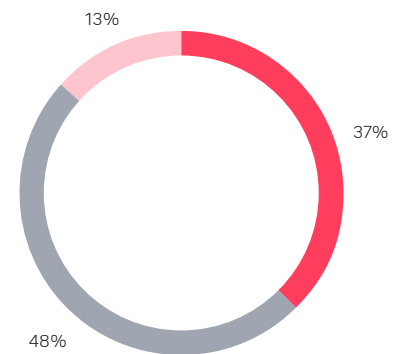
Reliable connectivity is a priority for IoT, but organisations should ensure they have a backup plan in place to so that data can still be transferred in the event of a connectivity outage. In the event our respondents are not able to access their primary connectivity type, 37 per cent will switch to a backup connectivity type to continue the transfer of data - a figure significantly above other sectors. A

further 61 per cent stated their operations would go offline, with 48 per cent continuing to collect data locally and 13 per cent pausing all data collection until the connection is restored. Pausing data collection was far less likely amongst North American, APAC and European respondents compared with their Latin American counterparts.



What connectivity types does your organisation use in its IoT projects?

● Wi-Fi	49%
● Cellular (public)	38%
● Radio	36%
● Fibre	34%
● Satellite	32%
● Cellular (private)	26%
● NB IoT	24%
● LoraWAN	19%
● Bluetooth Low Energy (BLE)	18%
● Zigbee	12%
● Other	11%
● Sigfox	9%



In remote areas away from terrestrial communication, what do you do if unable to connect to your chosen connectivity type?

- Use a backup connection type to continue
- Continue collecting data offline until the connection is restored
- Pause all data collection until connection is restored

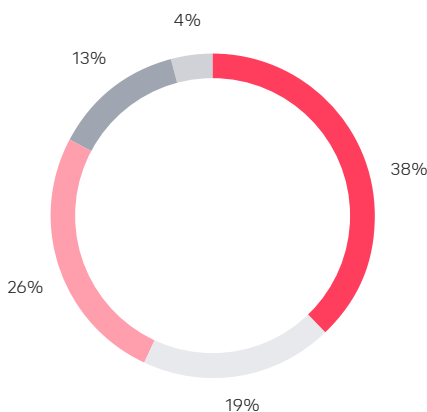
DATA

Electrical utilities organisations are leveraging the IoT to generate valuable data from all the points across the lifecycle between energy suppliers, distribution network operators and consumers. Our study reveals a number of reasons why utilities organisations are not able to use data from their IoT projects as effectively as possible. Chief amongst these are security and privacy concerns at 53 per cent and a lag between data collection and availability at 44 per cent, which reflects some of the connectivity challenges mentioned earlier. Following these fundamental data security and privacy issues, data being stored in an unusable format was problematic for 38 per cent of respondents and 33 per cent of organisations still lack a coherent IoT data strategy. Without a coherent IoT data strategy in place, utilities businesses will struggle to extract actionable business insights from the data they create.

Sharing data in a timely way to all parts of the electrical utilities value chain is key for improving efficiencies and ultimately building customer satisfaction. Both within and between organisations in the sector, this is still an area that needs considerable improvement. With 42 per cent of respondents currently only making IoT data available to those departments directly involved in IoT projects and only 21 per cent making this data available to anyone in the organisation, or its partners, to make use of. The sector's innate conservatism is evident in how it plans to adapt its approach to data sharing in the future. Though there is an awareness of the need to share through the value chain, as well as a shift in approach, it is still lagging behind every other industry sector we questioned, with 28 per cent of businesses still planning to ringfence their IoT data access to a select few departments in the future.

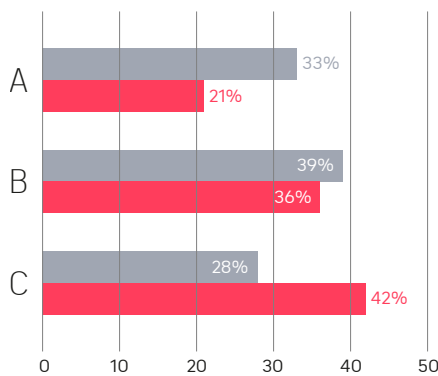
the curve when compared to the others we investigated, with 38 per cent of respondents most likely to collect data in real-time. North American organisations are notably further ahead in this area, with 63 per cent likely to collect real-time data in a typical IoT project, while Latin American businesses are lagging, with only 11 per cent committed to real-time data collection. The largest companies also demonstrate a similar commitment to real-time data collection, with 53 per cent of those with over 5,000 employees doing so. It's important for those regions and organisations that are lagging to catch up, as more frequent data collection makes it easier to respond quickly to rapid changes in demand for electricity. Leveraging real-time data from Advanced Metering Infrastructure (AMI), for example, has helped both electricity suppliers and network operators anticipate and respond to the unprecedented fluctuations in demand throughout the Covid-19 pandemic.

In terms of the frequency that data is collected in electrical utilities IoT projects, the sector is slightly ahead of



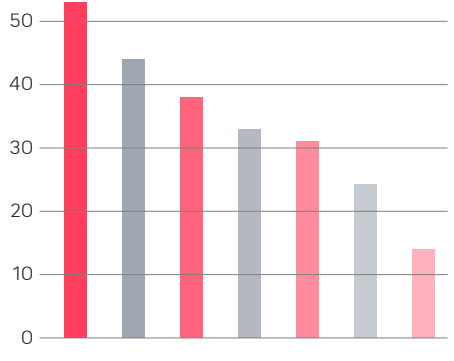
At what intervals do you typically gather IoT data points?

- In real-time
- Within half an hour
- Hourly
- Every two hours
- Every four hours (0%)
- Daily



To what extent does/will your organisation share non-sensitive IoT data?

- A It is available to anyone in the organisation, or our partners, to access and use
 - B It is available to anyone in our organisation to access and use
 - C It is only available to certain departments involved in the IoT project
- Currently ● In the future



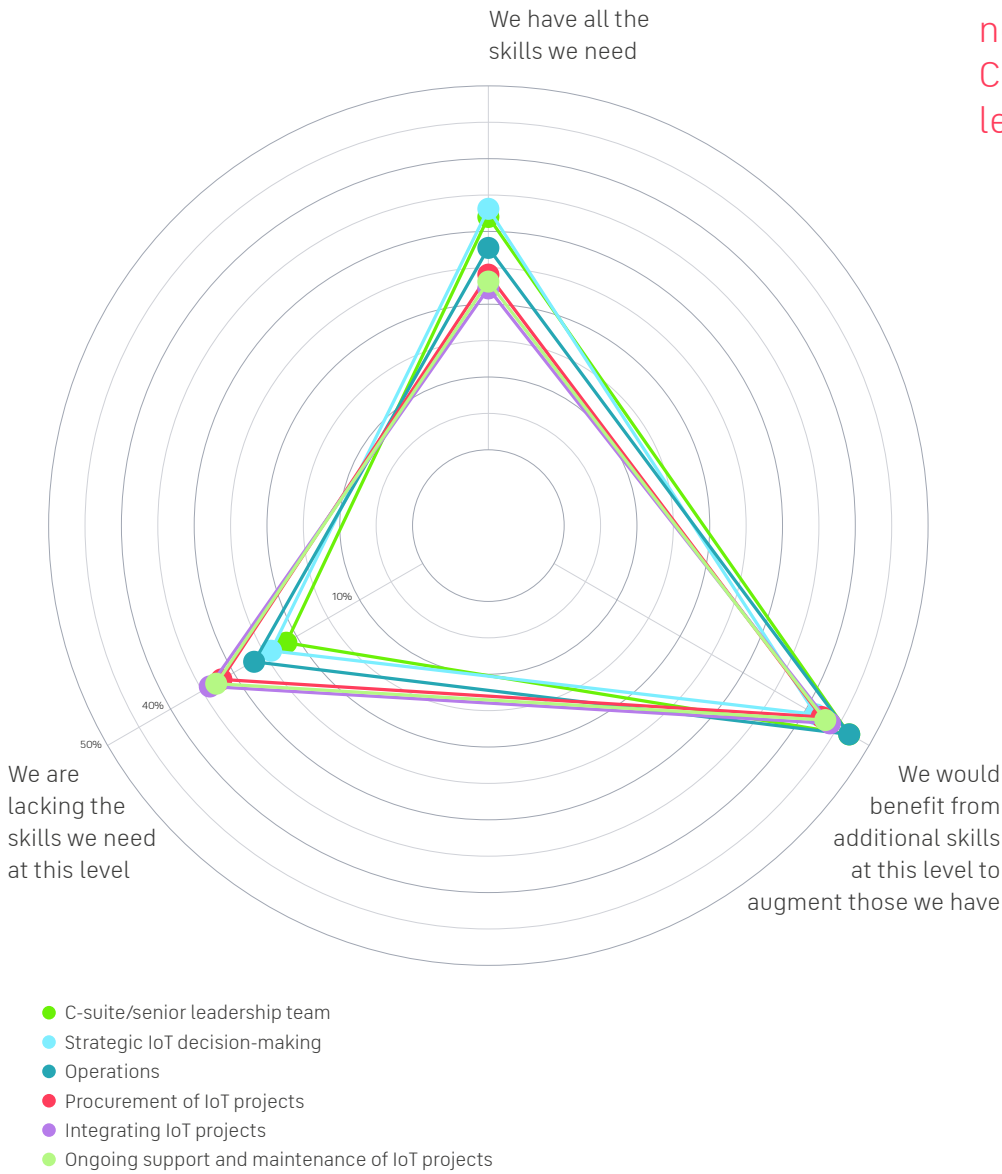
What barriers prevent your organisation from using data optimally?

- Security/privacy concerns 53%
- Lag between data collection and data being available 44%
- Data is stored in an unusable format 38%
- Lack of IoT data strategy 33%
- We don't have the skills to extract/use data 31%
- There is such a large volume of data we struggle to utilise it 29%
- We are able to use data as effectively as possible 14%

SKILLS

Does your organisation have the skills needed to fulfil IoT projects at different levels?

"Only a third of all respondents have the necessary IoT skills at the C-suite/ senior leadership level (31 per cent)."



Few electrical utilities organisations have all of the essential skills they need to successfully fulfil their IoT projects at different levels. Only a third (33 per cent) of all respondents have the necessary IoT skills at the strategic IoT decision-making level and only 31 per cent have all the skills they need at the C-suite/ senior leadership level, with the least number of sufficiently skilled workers at the integration level (22 per cent).

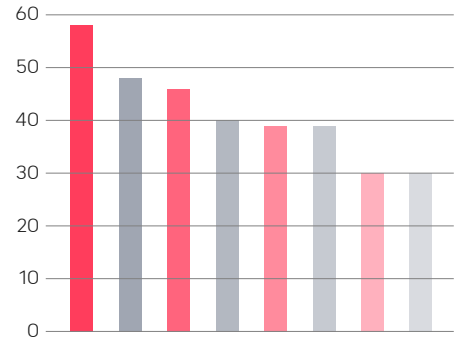
While electrical utilities is broadly in line with the sample set in respect to respondents having all the skills they need in each area of the business, it is notable that, amongst larger organisations of over 5,000 employees, 35 per cent are still lacking the skills needed at the senior leadership level and over half (47 per cent) are lacking the skills they need at the strategic IoT decision-making level. Additionally, while both suppliers and network operators are also generally matched when it comes to IoT related skills at most levels, Latin American businesses are severely lagging when it comes to C-suite IoT skills (only 5 per cent) and strategic level skills (0 per cent).

In terms of specific skills that are needed to deliver IoT projects, unsurprisingly for a security conscious sector, security skills are most sought after (cited by 58 per cent). This is followed by analytical/data science skills (48 per cent) and technical support skills (46 per cent). Organisations of over 5,000 employees are also much more likely to seek connectivity technology skills (47 per cent) than the sample (39 per cent). In order to make up for these skills

shortages electrical utilities organisations need to work to recruit, upskill or collaborate with trusted service providers or their IoT projects will be hampered.

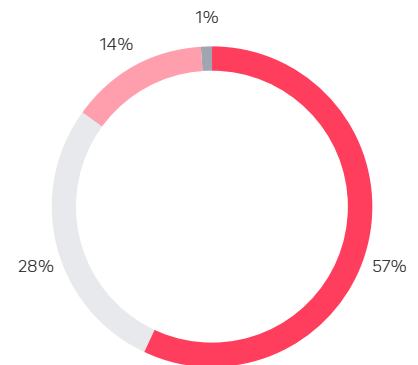
Purchasing decisions around IoT projects in electrical utilities are most likely to come from senior management for network operators (40 per cent) and from the senior leadership team (28 per cent) for energy suppliers. And while there is a reasonably even split between organisations of all sizes when it comes to the levels at which IoT buying decisions are made, there are more senior managers or heads of departments (50 per cent) making these decisions for smaller businesses of 251 to 500 employees.

Well over half of those polled (57 per cent) are aware of off-the-shelf IoT solutions in the marketplace that meet their organisation's needs. A level of awareness that is notably higher is found with larger organisations of 3,001 to 5,000 employees (89 per cent) and for organisations in North America (75 per cent), APAC (71 per cent) and Europe (68 per cent). However, awareness of such solutions amongst respondents in Latin America is extremely low (5 per cent) with 45 per cent noting that providers don't meet their needs at all. Overall, a total of 42 per cent of all respondents in the sector claimed that off-the-shelf utilities IoT solutions only meet some of their needs, which highlights the need for service providers to work harder at creating clearer and more cost-effective value propositions.



What additional skills do you need to deliver IoT projects?

● Security skills	58%
● Analytical/ data science skills	48%
● Technical support skills	46%
● Project management skills	40%
● Strategic skills	39%
● Connectivity technology skills	39%
● Procurement skills	30%
● Database management skills	30%



Are you aware of off-the-shelf IoT solutions that meet your needs?

● Yes, we are aware	57%
● No, providers only meet some of our needs	28%
● No, providers don't meet our needs at all	14%
● Don't know	1%

SECURITY

Cyber-security is a key concern for electrical utilities companies because of their place in a nation's critical infrastructure. As electrical organisations leverage IoT to connect power generation, transmission and distribution assets to IT systems, there is an increased risk from cyber-attacks, whether this is from bad actors looking to shut down electricity distribution, or from cyber-criminals looking to extort companies financially.

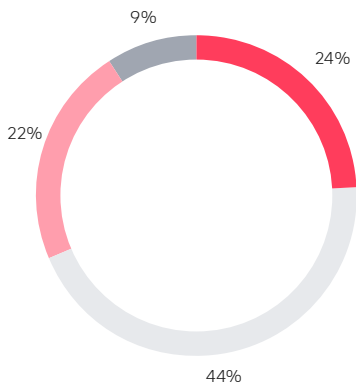
As such, there are a wide range of security challenges relating to IoT projects that continue to concern electrical utilities organisations, more so in fact than any other sector. The risk of external cyber-attacks is the clear leader in terms of security challenges, with 59 per cent of those surveyed mentioning it as an issue. Additionally,

over half of respondents (51 per cent) also list poor network security as a key security challenge associated with the use of IoT projects within their organisation. Insecure storage of data collected is also front of mind (49 per cent), as are internal data regulation and compliance requirements (43 per cent), the misuse of data by employees (42 per cent) and insecure/unencrypted edge networks (41 per cent).

Under a quarter (24 per cent) of all respondents claim that their organisation's IoT solutions have robust cyber-security defences from end-to-end in compliance with the relevant ISO standard. Accordingly, a total of 75 per cent of utilities organisations believe that IoT security needs to be strengthened in some way, with 31 per cent wanting to see major

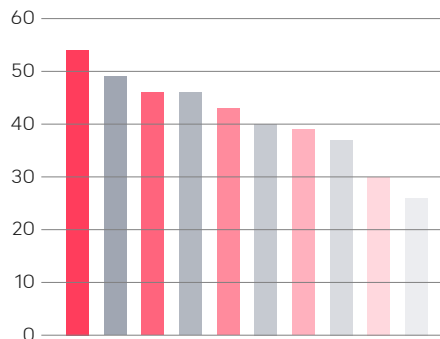
improvements made to their cyber-security defences. The need to see much improved defences increases considerably for those organisations in Russia (90 per cent) and Latin America (89 per cent).

The positive news is that the sector is largely taking a proactive approach to tackle these various security concerns, with 54 per cent of respondents having already created an internal IoT security policy, 49 per cent hiring skilled staff and 46 per cent training employees on IoT and upgrading existing security technologies. North American utilities organisations are ahead of the curve on IoT security, with 71 per cent training employees on IoT and 67 per cent upgrading existing security technology and having created an internal IoT security policy.



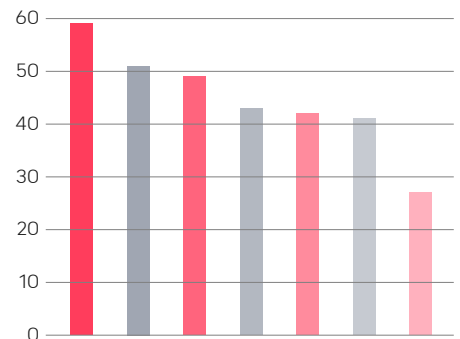
Which of the following statements are accurate regarding the security of your IoT projects?

- We have robust cyber-defences
- Our defences are good but could be stronger
- We need much better cyber-defences
- Our cyber-defences need to be vastly improved



What changes have you made to address IoT security concerns?

- Creation of an internal IoT security policy 54%
- Hiring skilled staff 49%
- Upgrading existing security technologies 46%
- Training employees on IoT 46%
- Investing in new security technologies 43%
- Communicating to customers on the use of IoT 40%
- Partnering with a third party 39%
- Creation of an external IoT security policy for suppliers and partners 37%
- Securing physical assets such as sensor nodes 30%
- Implementing a backup connectivity network 26%



What are your biggest IoT security challenges?

- Risk of external cyber-attack 59%
- Poor network security 51%
- Insecure storage of data collected 49%
- Internal data regulation and compliance requirements 43%
- Potential mishandling/misuse of data by employees 42%
- Insecure/unencrypted edge networks 41%
- Supplier/partner data regulation compliance requirements 27%

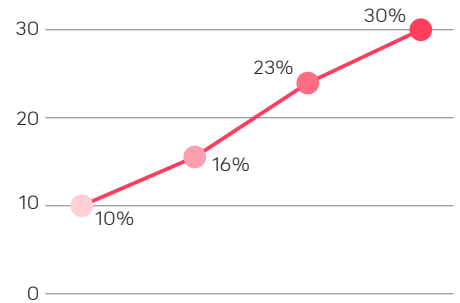
INVESTMENT

IoT budgets for the electrical utilities sector are higher than most of the other sectors we surveyed (other than oil and gas), with an average planned spend on IoT projects in the next three years of \$3,101,705, which represents 10 per cent of the annual IT budget. This is slightly higher than the sample average of \$2,804,899. As you would expect, IoT budgets also tend to be higher in larger organisations, rising to \$3,789,167 for companies with between 1,000 and 3,000 employees, and to \$3,703,125 for those with more than 5,000.

The sector's level of IoT maturity is reflected in the fact that the proportion of their IT budget allocated for IoT projects over the next three years (9.9 per cent) is equal to that for cloud computing (9.9 per cent) and higher than that for all other digital transformation technologies, including next generation security (8 per cent), big data analytics (8 per cent), augmented/virtual reality (5 per cent), machine learning (5 per cent) and robotics (5 per cent).

Despite the maturity of IoT adoption and the clear business benefits that IoT projects are already having on energy generators and network operators, this commitment to continuing high levels of investment throughout the sector suggests a clear IoT roadmap is in place in the majority of respondent organisations.

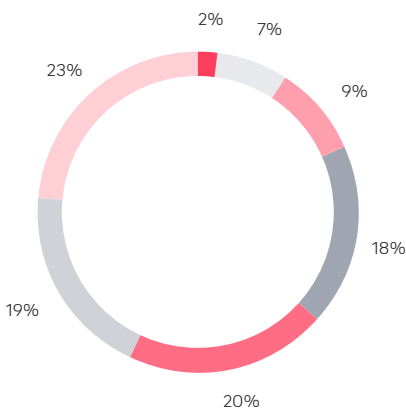
Finally, the most positive sign of all that IoT is impacting the bottom line is reflected in the high levels of awareness of how IoT engagement can save the business money in both the short and long term. Currently, the average estimated costs saved for businesses from IoT projects across the sector is 10 per cent, with this expected to rise to 16 per cent in 12 months, before eventually reaching 30 per cent in five years. These projected cost savings are at their highest for organisations in Europe (36 per cent), North America and APAC countries (both 33 per cent).



What proportion of your organisation's costs are saved/going to be saved from IoT projects?

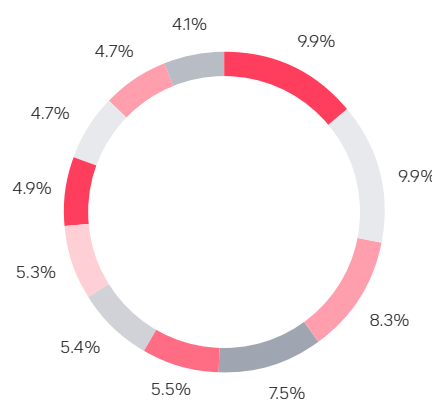
Currently	10%
In 12 months	16%
In 3 years	23%
In 5 years	30%

"The proportion of electrical utilities organisations' IT budget allocated for IoT projects over the next three years (9.9 per cent) is equal to that for cloud computing (9.9 per cent)."



What is your planned investment in IoT projects in the next three years?

- \$0 to £100,000
- \$100,000 to \$500,000
- \$500,000 to \$1,000,000
- \$1,000,000 to \$2,000,000
- \$2,000,000 to \$3,000,000
- \$3,000,000 to \$4,000,000
- \$4,000,000 and above



What proportion of your IT budget will you spend on IoT projects in the next three years?

- IoT projects
- Cloud computing
- Next generation security
- Big data analytics
- Machine Learning
- Robotics
- Augmented Reality
- Virtual Reality
- Cognitive AI
- Blockchain
- 3D Printing

HOW MATURE IS IOT AT YOUR ORGANISATION?

Inmarsat's free IoT maturity tool helps you compare your organisation's IoT maturity with our respondents and your competitors. Your personalised report also explains what you need to do to improve your score.

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