



Eseye's 2023 State of IoT Adoption Report.

What's next for IoT?

Go beyond.

Table of Contents.

•	Foreword	3
•	Key Market Trends	4
•	- IoT Market grows from strength to strength	4
•	- Inflation squeezes IoT budgets	4
•	- Shocking state of the connectivity market	4
•	- Buy connectivity cheap, buy twice	5
•	- A device-first approach is essential	5
•	- One IoT platform to rule them all	5
•	- The market is crying out for end-to-end IoT expertise	5
•	Key Challenges and Benefits	6
•	- Challenges relating to the IoT device	6
•	Vertical Market Analysis	7
•	- EV charging and smart grid	8
•	- Healthcare and medical devices	9
•	- Manufacturing	10
•	- Supply chain and logistics	11
•	- Smart vending	12
•	UK and US Comparisons	13
•	- US IoT adoption is full steam ahead	13
•	- Top benefits	13
•	- Top challenges	14
•	- US keen to measure success with industry peers	14
•	IoT Research: Recommendations	15
•	- 1. Don't settle for unreliable connectivity	15
•	- 2. Take a device-first approach	16
•	- 3. Don't get caught out by permanent roaming	16
•	- 4. Look for a partner with end-to-end IoT expertise	16
•	About Eseye	17
•	Research Methodology	17



Foreword.

Written by Nick Earle, CEO, Eseye.

Connectivity buyer beware.

In our third annual State of IoT Adoption survey, we decided to double the survey size to better understand the extensive impact of IoT on the business world. This year we surveyed 1,009 senior decision-makers across the UK and US who had IoT projects in the following vertical segments: EV charging and smart grid, healthcare and medical devices, manufacturing, supply chain and logistics and smart vending.

The study examines the challenges and opportunities that are hindering and helping IoT adoption, compares IoT growth by market and vertical, and reveals budget forecasts for the next two years.

The main finding is the shocking state of IoT connectivity performance in the market, with only 1% of businesses achieving greater than 98% average connectivity levels across their device estates. Furthermore, only 16% of respondents were achieving more than 95% connectivity. This isn't good enough. Every 1% reduction in connectivity levels has a massive impact on the business case, customer dissatisfaction with the IoT product and prevents businesses from harnessing the true potential of IoT.

3 Go beyond.

Enterprises should be aiming for as close to 100% as possible, and by following the right process and collaborating with the right partner, this is certainly achievable. We know this because at Eseye our customer's consistently experience connectivity rates of 99% or greater.

The study also reveals an issue with cheap connectivity providers with 71% of respondents stating they don't deliver long term value. This further supports Eseye's long-heralded claim that most IoT issues stem back to the device. This comes as no surprise to us as we have consistently focussed on the need for both device and connectivity expertise to deliver IoT success. The research also explores what businesses are doing to future-proof IoT projects, including the appetite for iSIM adoption, and the growing demand for multi-RAT connectivity.

For the third year running, we've found that IoT momentum is strong with IoT estates going from strength to strength, but further changes in approach are needed to ensure Enterprises derive lasting value from their IoT projects.

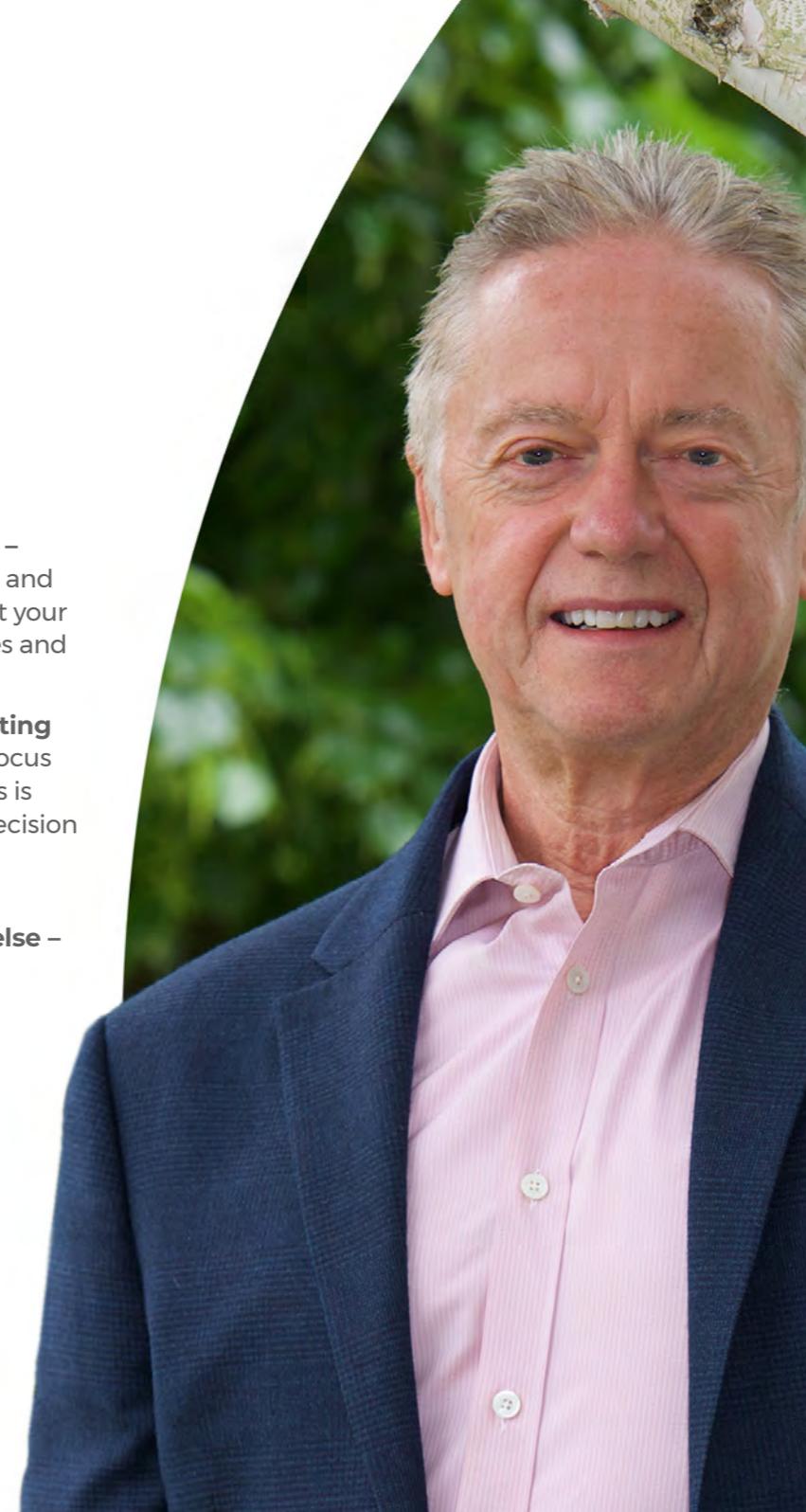
“96% of businesses are settling for mediocre connectivity levels...”

Our top takeaways from the survey?

- 1. Don't settle for mediocre connectivity** – anything less than 100% isn't acceptable and will impact not just the business case but your customer's perception of your capabilities and your reputation.
- 2. Cheap connectivity doesn't deliver lasting value** – beware of vendors whose main focus is to sell cheap SIMs and data. IoT success is about much more than a simple price decision and just sticking SIMs in a device doesn't usually end well.
- 3. Focus on the device design above all else** – getting that right will magnify your future success.
- 4. Understand where you are to get to where you need to be** – measure the state of your IoT project.

We hope this research shines a light on the state of IoT, where we're at and where we need to be, and goes some way in shaping your IoT strategy in 2024 and beyond.

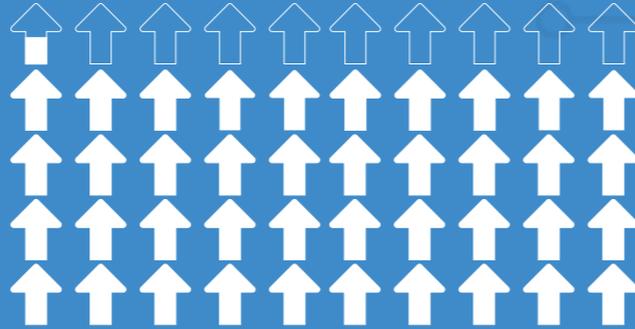
Nick Earle
CEO



Key Market Trends.

1 IoT market grows from strength to strength.

In 2022 over three-quarters of respondents (80%) expected the number of devices in their estate to increase over the next 18 months. In 2023, following the market slow down during COVID, this trend has strengthened with 81% planning IoT estate expansion in the next two years, regardless of how many IoT devices they currently have in the field.



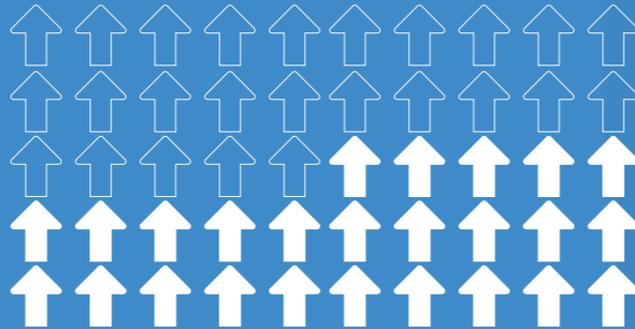
81% expect the number of devices in their estate to increase over the next two years.

3 Inflation squeezes IoT budgets.

Last year 96% of respondents revealed they were planning on increasing their IoT budgets in the next two years. This has somewhat dropped in 2023 with 72% of respondents planning to increase budgets.

Why the change in forecast? Both economies are at risk of recession, and the UK has been particularly hit by inflation hikes. Now more than ever businesses are being challenged to do more with less and this may result in IoT cost reductions or deployment reforecasts. It is worth noting that over half of respondents expect to increase their budgets by 25 to 50% which is a generous injection of cashflow dedicated to IoT.

“...81% planning IoT estate expansion in the next two years...”



It is worth noting that over half of respondents expect to increase their budgets by 25 to 50%.

2 Shocking state of the connectivity market.

78% say that achieving near 100% global connectivity is crucial to their business case. Yet only 1% of businesses are achieving more than 98% connectivity levels across their IoT estates and only 16% are achieving greater than 95%. Therefore businesses are taking unnecessary risks by accepting subpar connectivity levels which may impact the success of their project.



16% are achieving greater than 95% connectivity.



4 Buy connectivity cheap, buy twice.

Despite 95%² saying that the cost of connectivity is an important factor in the decision-making process when choosing a provider, paradoxically 71%³ have found that cheap IoT connectivity providers aren't a good long-term investment. This suggests that businesses have been affected in the past by low cost connectivity providers.

This represents a mismatch of expectations as companies need 100% global connectivity but aren't achieving it because they're opting for cheap connectivity solutions that don't deliver and inevitably present more challenges in the long term.



95% said that the cost of connectivity is an important factor in the decision-making process.

5 A device-first approach is essential.

More than 8/10 respondents agreed that getting the IoT device right is the key to unlocking success (81%). More time needs to be dedicated up-front to ensuring the device is fully tested and ready before it's rolled out into the field. 64% have at least sometimes ran into issues connecting

5 Go beyond.

their IoT devices because of a problem with the underlying hardware. While 67%⁴ of IoT project failures can be traced back to an issue at the device-level. Both UK and US similarly agreed that developing and debugging connected products is also holding them back from getting to market⁵ (UK 67% and US 70%).



More than 8/10 respondents agreed that getting the IoT device right is the key to unlocking success.

Unfortunately fixing these issues can be extremely complex and a drain on time and resource. 72% agree⁶ that embedded firmware developers are hard to find and in short demand.

A device-first approach could prevent these problems before they materialise. Rigorously testing the device in various scenarios and environments ensures it's robust enough to be successfully deployed and meet the individual device's use case.

6 One IoT platform to rule them all.

Managing global IoT deployments can be tricky especially when it comes to connectivity management platforms. It soon gets complicated

managing multiple operator relationships and their proprietary platforms, multiple contracts and multiple bills. Plus juggling different portals and logins to achieve the best coverage and rates. It's therefore unsurprising that 80% of respondents agreed that managing global IoT estates with a single IoT connectivity management platform would save them vital time and resources.

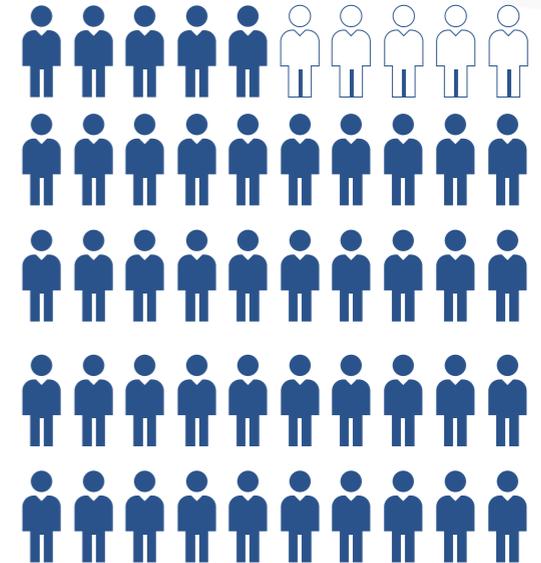
"It soon gets complicated managing multiple operator relationships and their proprietary platforms..."

7 The market is crying out for end-to-end IoT expertise.

9/10 senior decision-makers and IoT strategy implementors said that it would be beneficial for their business⁷ if they could assess their IoT project's level of maturity and compare where their project is at with industry peers.

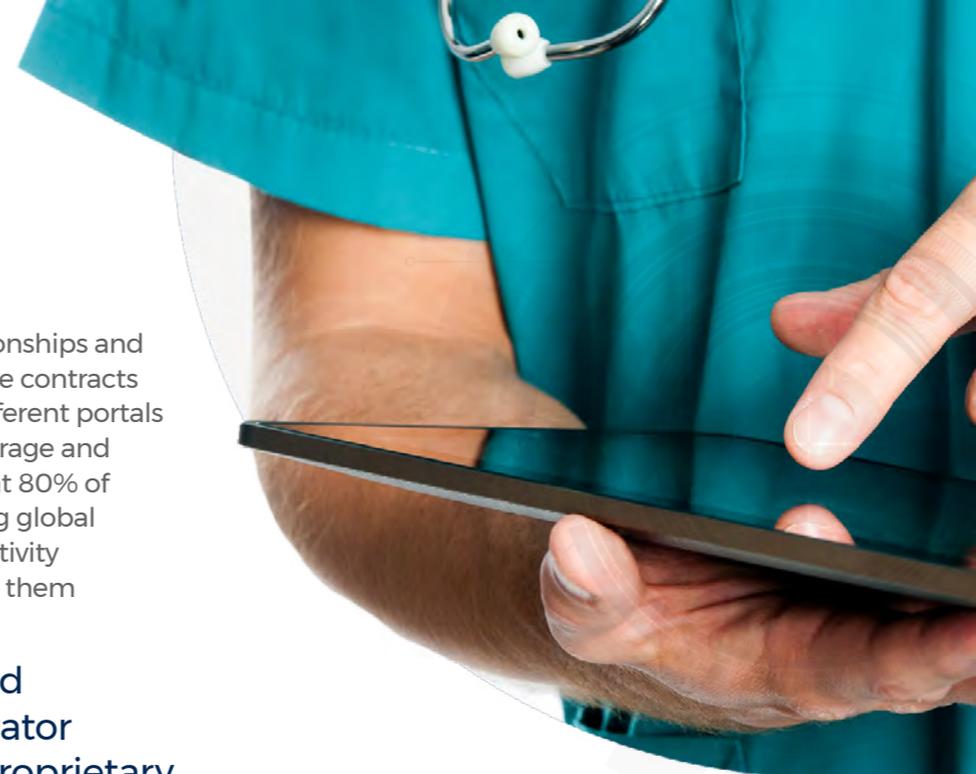
Almost 90% of respondents said a monthly subscription with end-to-end IoT services under one roof, much like **Eseye's IoT LaunchPad™** service, would be beneficial.⁸

72% of respondents from across the board find it challenging⁹ to find a partner with end-to-end IoT expertise which indicates there is a distinct lack of suitable providers, despite the market needing it.



Almost 90% of respondents said a monthly subscription with end-to-end IoT services would be beneficial.

²Combines "Very important" and "Somewhat important" ³Combines "Strongly agree" and "Somewhat agree" ⁴Combines "Always", "Regularly" and "Sometimes" ⁵Combines "Strongly agree" and "Somewhat agree" ⁶Combines "Strongly agree" and "Somewhat agree" ⁷Combines "Extremely beneficial" and "Very beneficial" ⁸Combines "Extremely beneficial" and "Very beneficial" ⁹Combines "Extremely challenging" and "Very challenging"



Key Challenges and Benefits.

Challenges relating to the IoT device.

The number one device challenge is **achieving reliable device connectivity across multiple countries/regions/locations** with 18% reported by respondents. With many countries banning and effectively prohibiting permanent roaming, achieving global connectivity can be tricky. That and some connectivity providers simply cannot offer it as they do not have widespread geographic coverage agreements in multiple regions.



The second biggest challenge was **security of devices** at 17%. This is followed by **ongoing management of the device estate and professional services support** at 15%. Only 4% said they have not had to deal with any device challenges with for their IoT initiative.

“The second biggest challenge was security of devices at 17%.”

Security has remained a consistent challenge for businesses over the past three years although in 2023 it is no longer the number one challenge but still in the top three. In 2021 and 2022 security emerged as the number one challenge (39% in 2021, 22% in 2022). In 2023 only 17% agreed this was a major hurdle.

Achieving robust end-to-end security from the device to the network is integral but involves a lot of work. There are many layers to IoT security from ensuring the device is physically secure from external threats through to network later security including SIM authentication, and Transport Layer Security. The GSMA IoT SAFE sets common standards for IoT security on how to secure your IoT application and data from ground to cloud.

Benefits of IoT – YoY comparison overall

Top Benefits	2021	2022	2023
1	Enter new markets (35%)	Create operational efficiencies (30%)	Increasing revenue (55%)
2	Increase profits (34%)	Enabling the business to enter new markets, and helping to reduce costs, increase revenue, increase profit, and delivering a new line of business/new product lines (all 28%)	Create operational efficiencies (53%)
3	Deliver new lines of business (32%)	Deliver competitive advantage (24%)	Deliver competitive advantage (51%)

When analysing by vertical, 2023 respondents ranked the following benefits as number one in their respective fields:

EV charging and smart grids: 57% said IoT has enabled the business to enter new markets.

Healthcare and medical devices: 55% said IoT has enabled the business to increase revenue.

Manufacturing: 62% said IoT has enabled the business to increase revenue.

Smart vending: 53% said IoT has enabled the business to increase revenue.

Supply chain and logistics: 58% said IoT has enabled the business to create operational efficiencies.

Vertical Market Analysis.

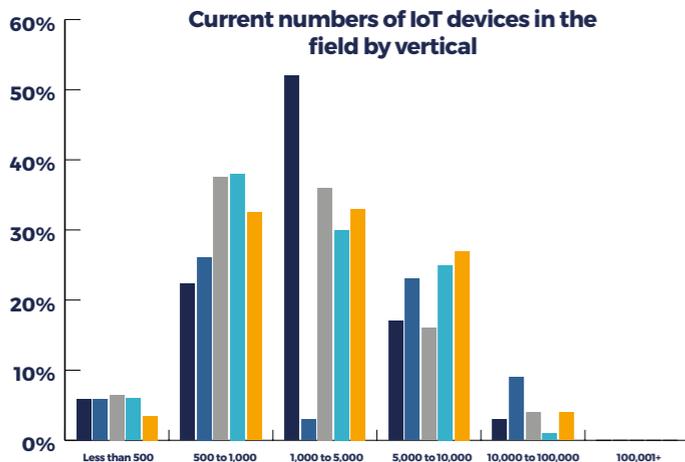
IoT remains a solid investment for industries seeking to enter new markets, increase revenue and create operational efficiencies. IoT estates and budgets are projected to grow steadily in the next two years as organisations double down on their initial investments.

IoT estates will rise across the board.

Every industry surveyed expects the amount of IoT devices they currently have in the field to increase over the course of the next 18 months. The supply chain and logistics, and healthcare and medical device verticals are projecting similar growth (85% and 84%

respectively), followed by EV charging and smart grids and manufacturing (80%) and lastly smart vending (76%). EV charging and smart grid respondents plan the biggest jump in estate size with 14% expecting their estates to increase by more than treble and up to quadruple, and 6% expecting more than quadruple!

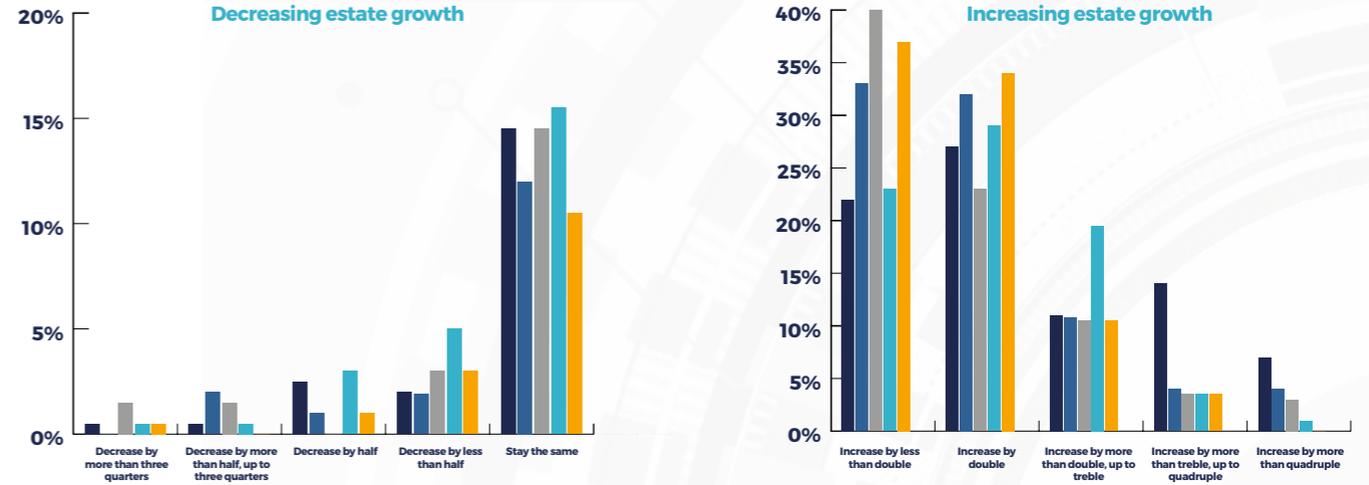
“IoT estates and budgets are projected to grow steadily in the next two years...”



Key

- EV Charging / smart grid
- Healthcare / medical (telehealth)
- Manufacturing
- Supply chain / logistics
- Smart vending

Projected IoT estate growth by vertical in the next 18 months

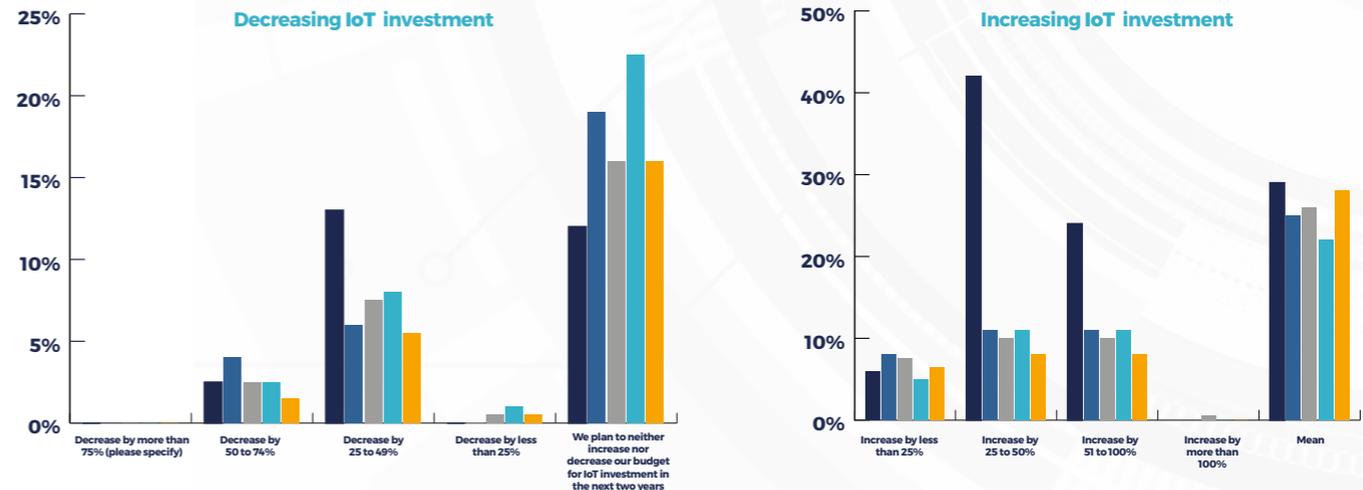


IoT remains a top priority

Appetite for IoT investment remains healthy year on year. The supply chain and logistics industry lead the way with 77% planning to increase budgets in the next two years. 62% of this sector plans an increase between 25 and 50%.

Last year smart vending held the top spot for the biggest planned percentage increase with 58% planning an increase of between 51 and 100%. 2023 tells a different story though with only 11% of smart vending respondents planning increases of the same magnitude now.

IoT investment projections for the next 2 years by vertical



EV charging and smart grid.

The EV charging and smart grid market is growing at speed, driven by the demand for clean energy and ambitious 2030 Sustainable Development Goals (SDGs) agreed by all 193 U.N. Member States.¹⁰ Over half of respondents (52%) said their estates consisted of 1,001 to 5,000 devices indicating this market is really beginning to take off and become established. Some early adopters have more established estates with 17% reporting to have 5,001 to 10,000 devices while 2% have deployed between 10,001 and 100,000 devices to the field.



Top IoT benefit:

Ability to enter to new markets

57%

This industry has the most amount of IoT devices in the field compared to other verticals with 72% of devices in the range of 1,000 to 100,000.

When it comes to budgets, IoT remains important. 72% plan to increase their IoT



82%

 of respondents have found that getting the IoT device right is the key to unlocking success.

budgets in the next two years and those respondents in the EV charging and smart grid industry are planning to increase their IoT estates 10% more than any other industry. In 14% of cases by more than treble and up to quadruple

82%¹¹ of respondents have found that getting the IoT device right is the key to unlocking success. Out of the five industries surveyed, EV charging and smart grid are running into trouble more than most with 71% admitting their IoT devices are failing to connect due to an issue with the hardware.¹²

Connectivity downtime poses a real threat to an EV charging provider's business model – every minute the charger fails to connect could result in a lost revenue and customer churn. To minimise this risk, charge points need to be connected-by-design and resilient to technical failure.



Top IoT challenge:

Ongoing management of the device estate and professional services support.

“EV charging and smart grid industry are planning to increase their IoT estates 10% more than any other industry.”

Healthcare and medical devices.

This industry is dominating the IoT adoption race with massive deployments compared to other industries. 9% of respondents have deployed between 10,001 and 100,000 devices. Since the COVID-19 pandemic, using IoT in telecare and telehealth has been extremely beneficial to reduce the need for face-to-face appointments, and empowering patients to remotely manage their conditions from the comfort of their homes.

Respondents expect IoT device estates to continue on this trajectory with 84% revealing they have plans to increase their estate, and 31% divulged they plan to double the number of devices they currently have deployed – this was the highest out of the five industries for this range. Given this, it’s unsurprising to see that 72% expect IoT budgets to increase in the next two years to help fuel this estate growth.

Healthcare is one of the most highly regulated industries and respondents have come up against more hurdles than most as a result.



Top IoT benefit:

Enabled business to increase revenue

55%

74% agreed¹³ that building IoT stack and providers is fragmented whereas just over half of manufacturing respondents (57%) found this an issue. IoT initiatives have been further exacerbated by developing and debugging connected products which three-quarters of respondents (75%) said¹⁴ has held them back from getting to market.

Healthcare respondents ranked this statement higher than any other industry which indicates this is a persistent challenge that plagues this sector.

“9% of respondents have deployed between 10,001 and 100,000 devices.”

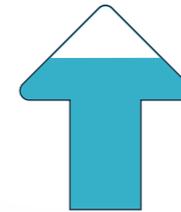
Connectivity issues that can be traced back to the IoT hardware have also caused headaches for 72%¹⁵ in this sector. Given connected products in this space are usually monitoring critical elements, either human biomarkers to help patients manage their chronic conditions or for example fall sensors around the home, any connectivity downtime can have devastating effects.

Unsurprisingly, 77% agree that cheap IoT connectivity providers aren’t a good long-term investment especially when achieving near 100% global connectivity is critical to their business case (79%).¹⁶



Top IoT challenge:

Reliable device connectivity across countries/regions/locations.



72% expect IoT budgets to increase in the next two years to help fuel estate growth.



Manufacturing.

The large majority of respondents working in the manufacturing industry typically have small to mid-size IoT estates ranging from 500 to 5,000 devices (74%). The level of IoT adoption is similar to EV charging and smart grid projects in this respect which have a near identical number of devices deployed too (74%).

The future looks promising with 73% revealing they expect their IoT budget to increase in the next two years. Over half of respondents (55%) predict their IoT investment will increase by 25 to 50 percent. This is higher than in 2022 where 43% forecast an increase in this bracket. Consecutive growth year on year shows this industry is committed to its IoT initiatives and prepared to double down on investment.

“The future looks promising with 73% revealing they expect their IoT budget to increase in the next two years”

Achieving near 100% global connectivity is crucial in the manufacturing industry, 81% agreed¹⁷. Based on these findings, the manufacturing industry values connectivity performance and uptime above the other industries surveyed. The same number also felt that a single IoT connectivity management platform would save vital time and resources, thus improving global IoT estate management at large (81%).



Top IoT benefit:

Enabled business to increase revenue

62%

Given manufacturing is very competitive, it comes as no surprise that 91% said it would be beneficial¹⁸ to be able to assess the maturity level of their IoT project and compare it with their peers.

While 8/10 respondents agreed¹⁹ that interoperability between public and private networks should be a priority, on par with those surveyed in the healthcare and supply chain industries. Manufacturing plants and warehouses stand to benefit most from private networks which unlock new Industry 4.0 applications like autonomous guided vehicles, robotics and advanced predictive maintenance.



Top IoT challenge:

Reliable device connectivity across countries/regions locations.





Supply chain and logistics.

The supply chain and logistics industry are at varying stages of adoption with some companies further ahead than others. 55% have deployed between 1,000 and 10,000 devices while almost 4/10 respondents (38%) have small-scale IoT deployments with 500 to 1,000 devices currently deployed in the field.

Out of the five industries surveyed, supply chain and logistics and healthcare and medical devices similarly plan on increasing the size of their estates with 85% and 84% agreeing respectively. Supply chain and logistics are planning to increase budgets the most out of the five industries surveyed with 77% expecting an increase. IoT budgets will increase by 25 to 50% over the next two years, according to 62% of respondents.

IoT devices in this industry are rarely static and often in transit. Given that devices are moving more than not, maintaining near 100% global connectivity is very important to 77% of respondents. However, half of this sector (50%) are only achieving between 71-90% connectivity levels. For some use cases this disparity is rather concerning, especially those applications that demand real-time tracking and telematics data such as security tracking or video streaming.

“Given that devices are moving more than not, maintaining near 100% global connectivity is very important to 77% of respondents.”



50% from this sector are only achieving between 71-90% connectivity levels

“The results suggest that respondents are settling for second-best connectivity despite their use case demanding more resilience.”

The results suggest that respondents are settling for second-best connectivity despite their use case demanding more resilience. This result may correlate with the use of low-cost connectivity providers, with 78% of respondents concluded²⁰ this is not a wise investment over the long term.



Top IoT benefit:

Enabled business to create operational efficiencies **58%**



Top IoT challenge:

Security of the devices.

Smart vending.

The smart vending industry shows evidence of being the most well-established and strongest adopters of IoT. They report the highest number of IoT devices in the 5,001 to 10,000 range with 27% stating this, and the lowest number in the less than 500 range (3.50%). Vending machines date back to the early 1880s and the industry has always embraced technology in order to evolve and grow.



Top IoT benefit:

Enabled business to increase revenue

53%

In the future, 20% of respondents plan to double or up to triple their IoT estates, which is the highest compared to other industries. However, only 65% of smart vending respondents expect their budgets to increase, which is the lowest compared to other industries. This is a significant change from 2022, where smart vending had the highest planned budget increases. In 2023, smart vending is only planning an 8% budget increase, which is a 50% decrease compared to the previous year.

“This is a significant change from 2022, where smart vending had the highest planned budget increases.”

When it comes to challenges, this sector reported concerns with the security of their vending machines (23%) and connectivity issues that are caused by the IoT hardware (71%). Vending machines are typically stationed in places where connectivity can be hard to achieve like an underground car park or petrol station that’s off the beaten track. These locations also can put the security of the machines at risk as they’re managed by a third party so it’s understandable this emerged as smart vending’s number one IoT challenge.



Top IoT challenge:

Security of the devices.

“...smart vending is only planning an 8% budget increase, which is a 50% decrease compared to 2022.”



UK and US Comparisons.

This year's survey was our biggest yet with 1,009 responses, evenly split between the UK and US. Here's how the two markets measure up against each other, where they cross and where they diverge.

US IoT adoption is full steam ahead.

Overall, the US has more IoT devices in the field than companies in the UK. 67% of US respondents said they had between 1,001 to 100,000 devices deployed versus 60% in the UK. This said the UK have a higher proportion of large-scale IoT estates with 6% in the region of 10,001 to 100,000 compared to the US which have 3%. The US however has a considerably larger percentage of mid-size IoT estates in the region of 5,001 to 10,000 (26%) compared to the UK with 17%.

“The US however has a considerably larger percentage of mid-size IoT estates...”

The US is looking to expand their IoT estates more than their UK counterparts with 83% versus 79% of respondents looking to increase.

The US is also less likely to decrease their estate (5%) compared to the UK where 7% of respondents expect estates to get smaller.

This IoT estate growth noted in the US may account for why budgets are rising quicker than in the UK by 12%. 78% of US respondents plan to increase IoT investments compared to only 66% in the UK.



“67% of US respondents said they had between 1,001 to 100,000 devices deployed...”

This investment pattern can be spotted year after year, as in 2022 US budgets were slightly higher with 98% planning increases versus 95% in the UK. It's evident that the divide is widening with time as the US noses ahead with IoT plans in 2023.

2023 top benefits comparison	UK	US
Increased revenue	54%	57%
Create operational efficiencies	49%	57%
Deliver competitive advantage	48%	55%
Enable the business to enter new markets	46%	54%

Top benefits.

Increased operational efficiency (57%) and increased revenue (57%), respectively, were reported as the top two benefits of IoT initiatives in the US. The US is also using IoT to deliver new lines of business and products more when compared to their UK counterparts (US 55% and UK 41%).

In the UK the top two benefits were reducing costs (UK 50%) and increasing revenue (UK 54%)

In 2022 the top benefit cited for IoT projects in the US was creating operational efficiencies (31%) whereas the UK said increasing profit (30%).



Top challenges.

Connectivity issues are holding UK respondents back with 68% disclosing that their IoT devices fail to connect due to an issue with the hardware versus 59% in the US²¹. When comparing countries, respondents in the US are achieving higher connectivity levels than their counterparts in the UK. 47% in the US said they're achieving between 91-98% versus 40% in the UK. UK respondents were more dissatisfied with their connectivity supplier than the US (6% vs. 2%).



“68% reveal that their IoT devices fail to connect due to an issue with the hardware...”

What unites the two countries is a common view that getting the IoT device right is the key to unlocking success²² with 84% agreeing²² in the US and 78% in the UK. Getting the device design and connectivity right often involves seeking expert advice from embedded firmware engineers and developers but both countries said these types of professionals are hard to find. The scarcity problem appears to be worse in the States where 75% agreed²³ they are in short demand versus 70% in the UK.

14 Go beyond.

²¹ Combines "Always", "Regularly" and "Sometimes" ²² Combines "Strongly agree" and "Somewhat agree" ²³ Combines "Strongly agree" and "Somewhat agree"

²⁴ Combines "Extremely beneficial" and "Very beneficial" ²⁵ Combines "Extremely beneficial" and "Very beneficial"



“94% in the US want to be able to compare where their IoT project is at with industry peers...”

US keen to measure success with industry peers.

95% of US respondents said it would be beneficial to assess IoT project maturity compared to 86% in the UK. When it comes to benchmarking the US is hungry to see how they perform. 94% in the US want to be able to compare where their IoT project is at with industry peers, compared with 87% of their peers in the UK²⁴.

“When it comes to benchmarking the US is hungry to see how they perform...”

Additionally, 94% of US respondents said a monthly subscription service programme with all end-to-end IoT services under one roof would be beneficial versus 84% in the UK²⁵.



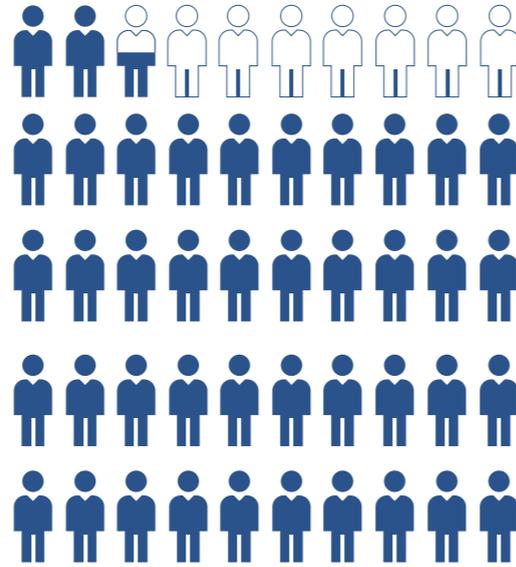
IoT Research: Recommendations.

1 Don't settle for unreliable connectivity.

You've invested considerable time, effort and resources into building your smart connected product. Why go and throw it all away by settling for inferior connectivity? Our research found that only 1.5% of respondents are achieving more than 98% connectivity levels. Achieving above 98% should be the standard in today's high tech environment. Imagine IoT health devices losing their connection and the impact that might have on life, or an EV charger failing because of defective connectivity and the millions of pounds in revenue lost as a result, not to mention stranded drivers or the impact on brand reputation.

Even more alarmingly, despite not achieving particularly high connectivity levels, 96%²⁶ of companies said they were satisfied with the service delivered by their connectivity provider. Businesses are compromising their chances of success by settling for second-rate connectivity. Cost is certainly a factor impacting decisions.

Nearly every respondent (95%) said that cost was an important aspect of their decision-making when choosing their connectivity provider²⁷. Although 72% admitted that cheap



95% said that cost was an important aspect of their decision-making when choosing their connectivity provider.

IoT connectivity providers aren't a good long-term investment²⁸ which suggests they may have been impacted in the past.

Bottom line: Think twice before settling for low cost connectivity rates that could kill your IoT business case. Don't compromise for substandard connectivity. Go for gold – that's as close to 100% connectivity coverage and therefore uptime for your device.

15 Go beyond.

²⁶Extremely satisfied' and 'Somewhat satisfied' answer options combined ²⁷'Very important' and 'Somewhat important' answer options combined

²⁸'Strongly agree' and 'Somewhat agree' answer options combined



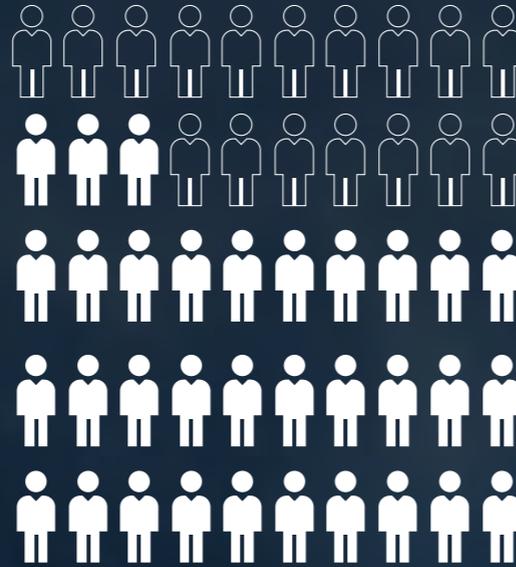
2 Take a device-first approach.

There was consensus (81%)²⁹ that getting the IoT device design right is key to unlocking success. Our State of IoT adoption survey has been tracking this growing trend for three years now.

However, when devices don't work, more often than not, this is down to the device, with over two-thirds (69%)³⁰ of respondents claiming that their IoT devices experience problems connecting due to an issue with the hardware and 67% say that most of their IoT project failures are down to an issue at the device level.³¹

“Our State of IoT adoption survey has been tracking this growing trend for three years now.”

Bottom line: Put the device first and success will follow. The analysts at Transforma Insights strongly advocate that IoT needs to be Connected-by-Design. No two IoT devices are the same, each IoT use case is unique and should be treated so. For example different sensors, components, power needs, requirements for bandwidth and latency and so on.



66% say that most of their IoT project failures are down to an issue at the device level.

3 Don't get caught out by permanent roaming.

78% said that achieving near 100% global connectivity is crucial to their business case. But let's face it, sometimes hurdles that are out of your control get in the way of achieving that. Said hurdle? Permanent roaming. If you've not been stung by high roaming charges or – worst case scenario – your devices being disconnected from the network, then you'll likely have read about these real life horror stories.

Operators are clamping down on roaming IoT devices and effectively prohibiting it in the following countries: China, Egypt, India, Saudi Arabia, Singapore and the UAE, while Brazil, Turkey and Nigeria have banned it altogether.

Bottom line: Permanent roaming can be avoided. But only if you know how. Say hello to your new favourite word: localisation. Futureproof your IoT project by localising connectivity to home markets and avoid permanent roaming headaches. Work with a cellular network localisation partner to unlock truly global geographic cover through multi-regional connectivity.

4 Look for a partner with end-to-end IoT expertise.

Businesses need the confidence to demand more from IoT service providers, they should be seeking end-to-end expertise incorporating device design, connectivity, and simpler commercial models. At this crucial point in the sector's development, second-best services – in any aspect – is not good enough. A change of mindset is needed, where compromise is not an option.



72% said that embedded firmware developers were particularly hard to find and in short demand.

There's a real difficulty in finding partners who can offer end-to-end IoT expertise, 72% revealed.³² A further 72% said³³ that embedded firmware developers were particularly hard to find and in short demand. Almost 90%³⁴ of respondents said a monthly subscription with all end-to-end IoT services under one roof, much like Eseye's IoT LaunchPad™ service would be beneficial.

Eseye's end-to-end IoT services span from initial idea through to device design and development, connectivity integrations, testing and validating, certification support, deployment planning, operation and optimisation, and ongoing support plans.

Bottom line: IoT is complex, and you don't have to go at it alone or be an expert in every layer of the IoT stack. That's what specialists are for. Look for partners who can step in and guide your IoT product development wherever you're at from IoT device design to deployment and beyond. Leaving you to focus on your business, not the technology. Furthermore, you should consider working with external partners to fill skill-gaps rather than attempting to hire in-house given the skill shortage in the market.

About Eseye.

As a world leader in IoT connectivity solutions, Eseye applies deep IoT device expertise to help businesses realise lasting value from global projects. We work closely with customers from idea to implementation and beyond, to deliver near-100% connectivity to millions of devices across the world.

We see IoT differently. We always start with the device. Taking this approach, we have delivered successful projects across all industries for global brands such as Shell, Costa, BT, and Amazon.



Our IoT connectivity solutions include our multi-award-winning [AnyNet+ IoT eSIM and iSIM](#), [specialist Hera IoT hardware](#), [AnyNet SMARTconnect™](#) intelligent connectivity software, and cloud-native [Infinity IoT Connectivity Management Platform™](#) to design and deploy global IoT projects at any scale or complexity with a high degree of success.

Research Methodology.

1,009 senior decision-makers and implementors of IoT strategy who have undertaken at least 1 IoT project in the last 12 months and have IoT devices deployed across at least three countries and connect through cellular networks were surveyed.

17 Go beyond.

We are supported by a powerful partner ecosystem, seamlessly connecting devices across 190 countries, and remaining network-agnostic by tapping into over 700 available global networks. We are known for our pioneering market firsts including ZigBee, multi-IMSI SIM and now the industry's [first IoT Readiness Level \(IRL\) Framework™](#) which accelerates IoT project deployment with our flexible [IoT LaunchPad™](#) service programme.

“...from idea to implementation and beyond, to deliver near-100% connectivity.”

Our advanced range of IoT connectivity solutions and [end-to-end IoT services](#) has been further strengthened by our acknowledgement as a Visionary in the Gartner® 2023 Magic Quadrant™ for Managed IoT Connectivity Services market, Worldwide. Nobody does end-to-end IoT better. [Learn more.](#)

Respondents work at companies that employ 500+ people and 505 are headquartered in the UK and 504 in the US. 100 respondents were surveyed per country per sector from: supply chain and logistics, healthcare and medical devices, manufacturing, EV charging and smart grid, and smart vending. Opinion Matters abides by and employs members of the Market Research Society which is based on the ESOMAR principles.



The Eseye logo is located in the top left corner. It consists of a stylized icon of three vertical bars of varying heights followed by the word "Eseye" in a white, sans-serif font.The main headline "Go beyond" is centered in the upper half of the image. The text is in a large, bold, white sans-serif font. A small orange circle is positioned at the end of the word "beyond". The background is a vibrant, low-angle photograph of modern glass skyscrapers at night, illuminated with blue and purple lights.

Talk to Eseye about
your **IoT journey** today.

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