

— IoT trends and predictions from 6 IoT industry leaders

IoT will fundamentally change business and the economy.
Here's how to become one of the disruptors.



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– 1. Welcome to the everything-connected world

In the past decade, digital companies like Amazon and Netflix used data to reinvent products and services in ways no-one imagined at the dawn of the internet. Shopping and films were not new concepts, but these companies and many others built hugely successful businesses by disrupting existing industries through connected, personalised, data-driven services.

We are on the brink of a similarly disruptive revolution, as IoT starts doing the same for 'physical' businesses – from tennis rackets, to coffee machines, to industrial machinery – allowing them to offer connected, data-driven, differentiated experiences. IDC predicts that in total there will be 41.6 billion connected IoT devices or “things” by 2025.

This incredibly detailed data on every aspect of how the world works will create endless disruptive innovations – from both new and existing companies. This presents limitless opportunities, but also grave threats to companies that wait too long.

A decade ago, many predicted this revolution, but it has taken longer than expected. Despite pockets of innovation, many have struggled to deliver successful IoT projects. We have yet to see the IoT equivalent of Netflix.



There are some obvious reasons for this. Many companies with a long heritage in the physical world, find digitisation hard to navigate. Moving from selling units to managing a continuously connected, data driven relationship is a big shift – involving new technologies, business processes, and skills. Concerns about choosing the wrong route can lead to decision paralysis. Too many use cases still fail.

But change is coming. Technological issues around reliable connectivity and operating in the cloud have now been overcome, for those who know where to look. Corporate culture is changing, either due to better understanding of opportunities, or in response to the threat of disruption from IoT startups developing customer centric alternatives to their products. The COVID-19 pandemic has accelerated many digital initiatives as companies adapt to more remote workforces and customers.

Many more industries will be disrupted in the coming years but whether it is by forward thinking existing players, or innovative startups, will depend not just on the biggest thinkers, but who gets IoT decisions right.

Drawing on insight from leading industry thinkers, this report looks first at the opportunities that IoT offers for companies to create disruptive products and services. It then looks at lessons that can be learned from the digital leaders who are already succeeding in delivering disruption through connected devices, and how they trod the path success. It will demystify this new opportunity for connected 'things', and provide a guide which shows how to quickly and effectively unlock gates of disruption.

“ We can only guess at what IoT entrepreneurs will come up with once they have access to data from trillions of devices capturing rich data on every aspect of our lives and businesses. But it’s likely to be an even bigger wave of innovation than the internet unleashed.”

Nick Earle, Chairman & CEO, Eseye

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–2. The Disruptive Potential of IoT

“With more detailed data, they [manufacturers] can sell based on value, which differentiates their offer and allows them to upsell other services based on a data driven understanding of what their customers need.”

Josef Brunner, CEO, Relayr

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Integrating sensors and connectivity into physical objects creates data on how those objects are used. If we consider that detailed data on people's online behaviour unleashed a wave of disruptive digital businesses; imagine what will happen when we have detailed data on every aspect of the physical world.

IoT allows products to collect data from their environment and learn and adapt in real time to deliver complex automated services.

Data on device usage allows its manufacturer – or their partners - to deliver personalised insights or promotions, and improve products to meet customer preferences. It allows predictions of when replacements or upgrades are needed, ensuring the customer is never disappointed, whilst saving fortunes in manufacturing and supply chain management. Products can be upgraded remotely, increasing lifetime value. Connectivity opens the possibility of in-device payments or instant customer support, delivering new and more bespoke customer experiences.

What do we mean by IoT?

Internet of Things means embedding technology in everyday objects, which allows us to capture data on its use. This technology will usually involve sensors, a modem, and a means of connecting to a local or cellular network.

Everyday objects, or 'Things', is a broad term. It can be a consumer product such as a lawnmower or a tennis racket, a vehicle, a piece of industrial machinery, or even a major asset like a building or an oil rig connected via thousands of sensors. Anything previously dumb object can be made smart by data and connectivity.

“Data will increasingly become a form of value, which can entitle users to certain privileges, or being used to incentivise behaviour. We already see data from connected cars affecting car insurance costs.”

Dr. Mirosław Ryba, Global IoT Leader, EY

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This creates huge opportunities for new innovations, but also – as with the internet – to make existing services more personalised, and to turn products into services or experiences. A connected coffee machine can learn the preferences of its users. A connected tennis racket could give advice on how to improve your game. A connected office can optimise energy use to save fortunes on bills.

This is likely to upend business models. We discovered we'd rather pay a monthly fee for films delivered straight to our Smart TV, than rent or buy DVDs. We may one day find that we'd rather pay a connected lawn mower a weekly fee to mow the lawn, rather than purchasing a unit that we own forever, or pay a connected smart meter a fee based on how much it reduces out energy bills. The possibilities for disruptive change are endless.

As data is collected across many products, opportunities arise to combine datasets. Multiple connected devices can optimise building efficiency or whole energy grids. Data from wearables – an exciting subset of IoT – could help the pharma industry develop more personalised treatments. Selling access to data may prove more valuable than the product itself.

All of which presents a huge opportunity for companies which make physical products or manage physical assets, to become hugely disruptive, whether in their own corner of their industry, or on a global stage. But getting IoT right has proven surprisingly challenging.

–3. Change is happening

We are on the cusp of change, and whilst many are still getting to grips with IoT, a number of leading organisations have embraced IoT to create innovative products and redefine ways of doing business.

Connected healthcare

Connected in-home devices, such as **Alcuris' Memo Hub** or **Philips Motiva**, collect data on the wellbeing of vulnerable people.

Some of this is be straightforward, such as alerting a carer to a fall. But as more devices are connected, data can establish complex patterns of behaviour and respond to worrying changes. Over time, it can monitor changes that indicate physical or cognitive decline, helping healthcare systems allocate the right level of care. As data builds up across populations, more sophisticated models can be used to gain insights into ageing and disease progression that could guide drug development, treatment regimes, and social programmes.

Connected tractors

Agricultural machinery company, **John Deere** has embraced IoT in a big way. It has integrated a wide range of IoT sensors into its farm machinery, and built cloud apps that help farmers monitor and optimise planting, feeding, and harvesting with the goal of improving crop yields.

It's even built a steering-wheel replacement that guides farm vehicles to make precision passes across arable land. The system reduces the number of seeds or nutrients spread and improves yield by not double planting rows where the plants would compete against each other.





Connected vending machines

Costa Express's and **Venpay's** connected vending machines have become IoT devices, allowing them to ensure restocking of fresh ingredients, plan maintenance to avoid downtime and deliver personalised offers.

With connectivity in place vending machines could use personal identifiers – via swiping your phone or even facial recognition – to make the services more personal, such as remembering preferences, loyalty schemes or special offers. Venpay has even monetised digital advertising displays which can be remotely and dynamically updated.

Connected tennis racket

Companies such as **Babolat** have deployed sensors inside tennis rackets which measure parameters to determine how the ball was hit. Using the accompanying app, players can analyse their performance, as well as sharing and competing with friends and professional players. In doing so, they created a differentiated experience and built an engaged community.

Connected lawnmowers

Connected lawn mowers, such as the **Positec Worx Landroid** and **Bosch Indego**, can self-guide around gardens, using data to learn about its environment, and remove a long and boring Saturday afternoon job.

– 4. Disruption coming soon: Why now is the time to act

Pockets of disruption have appeared, and there are many great examples of IoT innovation. But we are yet to see the transformational change that the internet disruptors delivered, or a global culture of relentless IoT innovation like we saw from internet companies.

But things are about to change.

“ Right now we are at an inflection point where IoT is gradually crossing from the experimental phase to mass adoption. This is partly thanks to seamless connectivity which has got much better and cheaper, partly due to the growing ease of activating applications in cloud.”

Tony Shakib, IoT Business Acceleration Leader,
Microsoft Azure

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Many companies have made internal changes designed to allow them to embrace IoT, and many startups spy opportunities. Global connectivity solutions, such as Eseye's are enabling easy deployments that work out of the box anywhere in the world.

As pioneers show what is possible, and understanding grows, expect the floodgates to open.

Startups vs incumbents: Disruption from within or without?

It's often said that disruption comes from innovative startups who can move quickly, whilst lumbering old companies are doomed to be out-innovated.

This is certainly sometimes the case – Uber, Netflix and Spotify are amongst many examples.

But it needn't be. Plenty of older companies are thriving having embraced digital innovation. Starbucks and Costa are using technology to create more personalised experiences and brand loyalty. Visa and Mastercard are embracing new payment partnerships instead of locking tech players out. Indeed, Apple and Microsoft were founded in the 70s and have both at one point looked to be on a downward spiral, until they reinvented their businesses, by embracing new technology to meet changing customer needs.

Small companies have the advantage of being able to move fast. But existing players have experience, customer bases, and capital. And many have learned the lessons of the internet revolution – which saw the likes of Blockbuster go to the wall – that companies survive by innovating and putting the customer at the centre. The race to build the first \$100bn IoT business is wide open.



-5. What's holding back IoT disruption?

The experts who contributed to this report identified four barriers to IoT success:



Corporate culture:

Often traditional companies do not have a culture of innovation, which enables them to quickly deploy connectivity into their products, and redesign them to take maximum advantage of this opportunity. As a result, IoT projects languish or progress slowly.



Fragmentation:

Companies built around physical products are often setup in ways not suited to the connected world. IoT brings together R&D, device manufacture, IT, and data teams. It blurs the line between CAPEX and OPEX, and often changes the role of sales to one of ongoing customer support. These boundaries often need to be broken down before true disruption can be realised.



New technologies:

IoT needs new cloud and connectivity technologies which may previously have not been core elements of the offer. There is a need to explore and embrace new technologies and bring a lot of new complexity together.



Connectivity:

Connectivity has proven a challenge for customers who rely on their device transmitting and receiving data anywhere in the world. There are around 800 MNOs globally all with different coverage, roaming arrangements and using different telecoms technologies. Because there is a lack of interoperability between network operators, no network has more than 90% global coverage. Few companies can afford to deploy a product which doesn't work in 10% of situations.

– 6. How to deliver disruptive IoT innovations

To conclude, we present the key recommendations from the six experts who contributed to this report to help companies develop new disruptive IoT innovations, or embrace IoT to disrupt how they manage the physical aspects of their organisation.



Build from an established base

Start with what you already do, make, or sell, then explore how integrating connectivity and utilising data can deliver a better or higher value experience. Consider not just improving your product, but whole new ways it could be used. Start with the user need, not the product, and imagine what you would give them if there were no limits. Only then look at how tech can enable it.

Research by McKinsey supports our experts view, saying: “IoT leaders are three times more likely than laggards to say that their top IoT priority is adding IoT capabilities to existing products”¹.



Build a business case for your IoT project

All IoT projects should start with a business case: What value does it deliver to the user? Does it create something new? Will someone pay for it, and will they pay enough to make it worthwhile? Will this new approach need changes to your business, and how hard will they be to make?

Create room to innovate and explore ideas, but keep the business case in mind, and only take them forward if there is a clear rationale for doing so.

1. <https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/what-separates-leaders-from-laggards-in-the-internet-of-things>



Consider new business models

Don't limit your thinking to sticking connected sensors into existing products – consider whether doing so opens opportunities to do things differently. Does it allow you to sell a subscription rather than a product, or to charge for value? Does it allow you to cut out the middleman and become the supplier of product, refills, and maintenance, all delivered exactly when needed? Does it provide you with data that allows you to develop new services, or make your offer more bespoke? Perhaps the data it creates is so valuable that you start giving your product away.



Divide core vs non-core technology, and build an ecosystem of partners

Identify what is your core proprietary technology that you can develop to create differentiation and value. If your core technology is vending machines, focus on what they would look like as an IoT device, what would that enable from a business perspective and what needs to be done to make it possible. This will happen in house, and that is where you will create new value.

Separate this from enabling technology, such as connectivity and cloud solutions, which are unlikely to be your core expertise, and which can be bought in easily. Clearly delineate what you need to develop and where existing solutions can seed progress.

To support non-core business, look outside your organisation for partners that can take technical challenges outside your core competency off your hands, such as connectivity, data storage and processing. There's huge value in having trusted partners that can remove roadblocks, and allow companies to focus on rapid product innovation.



Design products that scale globally

IoT creates global opportunities. Even if you previously only sold locally, IoT can allow a fleet of global products all managed through a cloud hub. Consider what will happen as you grow – where will your products end up? How will you manage the data?

This means designing in connectivity that works in a convenient way for the user, in any location where your product might be used. Ensure you have the right cloud and analytics support to scale up as data increases and becomes more complex. Make devices secure by design, since security is hard to add in later.



As we connect devices, we expose a surface for hackers and this potential threat undermines user trust, which is a key value to protect... IoT applications need security to be embedded from the start as security is very hard to retrofit."

Andreas Haegele, VP of IoT, Thales  [Skip to the full interview](#)



Create structures that support innovation

Finally, disruptive IoT project is only possible with the right corporate structures and culture. Especially for industries not born in the digital age, there may be a need for a change of mindset.

Companies need to create an 'Incubation Zone' with an innovative culture and room for experimentation. Here teams can try small scale projects, and create quick wins in IoT. These then provide a reference for success which shows it can work, inspiring others. This can then gradually build, creating a rhythm of increasing successes.

Take an agile approach to project delivery, and be ready to stop if there is no clear value. IoT programmes can be killed by endless unsuccessful pilots. Move quickly and try lots of projects. Start with limited deployments to limit risk, and gradually scale with sensible checks on progress.

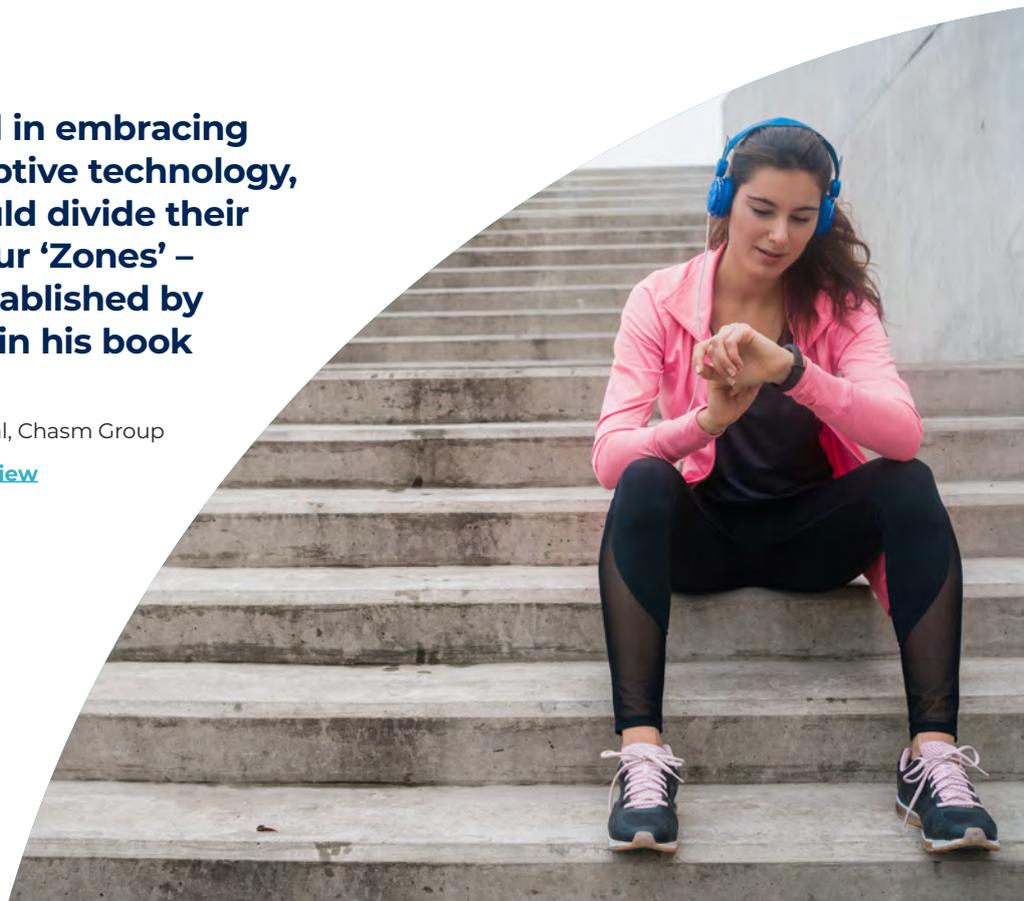
Where an innovation seems has proven itself to have truly disruptive potential, it should be assigned to a 'Transformation Zone', which is singularly focussed on growing it to a point where it is a significant revenue generator. A major reason companies fail on disruptive projects is to neglect this and hand it over to the core business which is focussed on maintaining existing revenue and sees a new disruptive product with low revenue as a distraction.

If you really want to deliver transformative innovations, all of this needs the full support of the C-suite, and active involvement and sponsorship from people with a voice at the top table.

“To be successful in embracing IoT, or any disruptive technology, companies should divide their business into four 'Zones' – an approach established by Geoffrey Moore in his book Zone to Win.”

Peter van der Fluit, Principal, Chasm Group

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–7. Conclusion: Where next?

IoT is still very early in the innovation cycle. There are only a few examples that are mainstream, such as automotive. But as companies solve the challenges outlined above, we will see significant disruption.

It is foolhardy to predict where technology will go – disruption is by its nature unpredictable. But past waves of disruption suggest it will shake up established businesses and economies.

New companies that are just forming will become market leaders in a decade. But there are always incumbents who play a good defensive game and come out on top.

Who the winners will be in the IoT race remains to be seen. We hope that this report provides a valuable guide for those hoping to be among them.



–8. Industry Insights

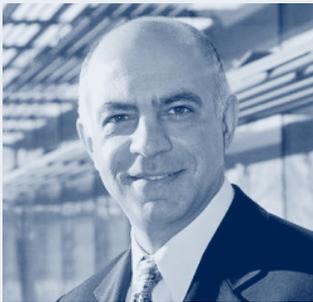
Views from IoT leaders from across industry

- 16. Tony Shakib, IoT Business Acceleration Leader, Microsoft Azure
- 18. Dr. Miroslaw Ryba, Global IoT Leader, EY
- 20. Andreas Haegele, VP of IoT, Thales
- 22. Josef Brunner, CEO, Relayr
- 23. Peter van der Fluit, Principal, Chasm Group
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–Accelerating your enterprise IoT programme

Tony Shakib, IoT Business Acceleration Leader, Microsoft Azure



How well are companies doing at deploying IoT?

There's been a lot of investment in IoT infrastructure and we're starting to see some big returns. This is partly thanks to seamless connectivity, which has gotten better and cheaper, and partly due to the growing ease of activating applications in cloud.

This is allowing companies to capture meaningful data, and integrate it into their workflow management systems, where they can start delivering, and acting on, real time insights.

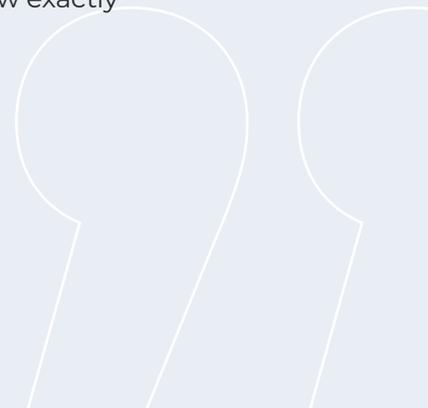
Some industries are quite advanced; in automotive we expect to see a majority of new cars with sophisticated IoT by 2022. To varying degrees other industries will come of age in the next few years: retail will use smart analytics to understand in-store behaviour and manage supply chains, buildings will become smarter to save energy, healthcare will expand remote care, and agriculture will automate laborious processes such as harvesting.

I feel we're at an inflection point where some are starting to be able to do that seriously, gradually crossing from the experimental phase to mass adoption. Once we get there, the we'll see real change.

How are these companies approaching IoT?

Mostly, companies are finding their way by taking small steps to deliver a specific goal, then scaling up as they realise the potential.

Take a simple example of an elevator manufacturer we worked with, which wanted to put in sensors that would alert them if it stopped working. As they started to collect the data, they realised they could use data to understand problems in detail. Now they know exactly



which part is broken, who to send, and have even developed AR repair guides so engineers can fix problems outside their experience. This amounts to a much bigger benefit than originally intended, reducing cost, and improving their customers' experience.

Once you start connecting devices and using data intelligently, the amount of innovation you can do becomes exponential.

How can they accelerate these IoT programmes?

Moving from incremental advances to big disruptive IoT-driven transformation needs cultural change. Tech is not the bottleneck – devices, security, connectivity, and cloud platforms are all there if you know where to look. The problem is people struggling to understand the art of the possible.

Especially for industries not born in the digital age, there is need for a significant change of mindset to allow them to effectively invest in and deploy IoT in a way that works for users, but more importantly, enables the organisation to become driven by the data that IoT produces.

Such change sometimes happens – perhaps for 20% of companies – thanks to a visionary leader who really gets it. More often it comes from a lack of choice – if competitors race ahead or there is a sudden disruptive event – say a global pandemic – that really spurs people into action.

-How is IoT delivering disruption?

Dr Miroslaw Ryba, Global IoT Leader, EY



Where do you see the disruptive potential of IoT right now?

The industry has advanced a lot recently, moving from experimenting with technology to focussing on valuable outcomes. I remember just few years ago talking to endless startups pushing connected egg trays and salt dispensers – stuff that can never justify its cost to a mass market. Fortunately, IoT grew up since then.

Right now the big transformational projects are within big organisations. Firstly using IoT to optimise the organisation's outputs, such as energy production and management, oil refining or manufacturing. Secondly, using data for supply chain management optimization.

Both are about sophisticated approaches to managing complex systems. It's not just about individual applications such as predictive maintenance of a machine. Disruptive IoT is about taking the sum of thousands of IoT sensors – say in a factory - and combining data to deliver transformational insights. For example looking at the interaction between energy use, production cost, schedules, maintenance, etc., then working out the optimal combination for product quality, efficiency, and costs. This is saving fortunes.

And where might IoT go next?

I think the next exciting phase, which we already see elements of, will be a new data economy. The current online economy allows huge personal targeting of services and adverts based on your online habits. There is an agreement that the user gives up their data in return for a service. Imagine what will happen once that data expands to real-world activities.

The obvious consequence is companies selling things in a more targeted way, and delivering adverts and offers in real time. But it's much more than this, it will allow the development of whole new classes of products and services aligned to customer needs. For example,

pharmaceutical companies could use lifestyle data – heart rate from connected watches or t-shirts, oral health from your connected toothbrushes, coffee consumption from connected espresso machines - to develop personalised drugs and health products.

Data will increasingly become a form of value, which can entitle users to certain privileges, or being used to incentivise behaviour. We already see data from connected cars affecting car insurance costs. And COVID-19 has also changed how people view sharing data in return for benefits – for example, people now are open to share their track and trace data to go out or get into a restaurant. It's interesting to consider where this could go.

What's the key to achieving all this?

All successful tech deployments start with a credible business case aligned to real world value that someone will pay for. Unfortunately, today still too many just look at what is technically possible.

Ask what value it delivers to the end-user. Who will pay – the user, service providers, advertisers, or all of these? Can you charge enough to cover the lifetime costs – development, maintenance, power, connectivity, etc? Will people happily give up their data, or do they need more incentive or assurance?

Another challenge is connectivity. If it needs to be developed for every new geography that can kill the business case. Having a global solution remove a major headache. The coverage, bandwidth, latency, and cost of connectivity need to be adjusted to the service needs. And then 5G opens another chapter of possibilities.

If, after all that is added up, you can profit, then you've got a business case.

– Delivering a successful IoT project

Andreas Haegele, VP of IoT at Thales



How is IoT changing business?

IoT, alongside Cloud and AI, is fundamentally changing how companies do business.

Most hardware related business models of the past – and many today – are based on 'sell and forget'. Conversely, IoT connects your products and your offering. It allows you to establish a strong link between you and the customer allowing you to deliver services, and collect data which provides valuable insights to improve your offering.

Take a simple consumer product like a tennis racquet for example. They used to be sold based on attributes such as durability, weight, design, etc. Once you add IoT, cloud and analytics, you are opening possibilities to create community, competitions, and eg tailored coaching via an app. This creates a very strong differentiator as now you are no longer in the traditional area of competition. It blurs the line between products and services and how each should be sold. Thus it is quite a significant change for a maker of sporting goods and a big risk of being disrupted for the incumbent in the market.

How should businesses deliver these IoT projects?

The overall programme needs buy in at the very top or it will stagnate. But change itself happens from the bottom, where small teams have a clear view of the business challenge they are addressing, and can follow agile approaches. My recommendation is to start with small scale projects, create quick wins, show it works, and build a rhythm of increasing successes by repetition.

How can they make this process efficient?

Well, you can certainly try to reinvent the wheel, but this will make the start-up phase long and sometimes painful. We see many projects failing in this stage. There's huge value in leveraging the existing ecosystem of specialist IoT partners. It can remove roadblocks, and allows companies to focus on their core business. Eseye for example offers out-of-the-box connectivity which you can embed in an IoT device and it just works, there is no need for setting up new networks, security protocols, certification with MNO, etc. Other partners can help simplify cloud, analytics, etc. This removes technical frustrations, and allows companies to focus on rapid product innovation in their core markets.

Is security an issue?

Absolutely. As we connect devices, we expose a surface for hackers and this potential threat undermines user trust, which is a key value to protect. And the more devices that are connected together, the more complex this gets, because this business is now more attractive to hackers.

I never tire of repeating that IoT applications need security to be embedded from the start as security is very hard to retrofit. In an ideal IoT world, there would be a unique identity for every device so it can be managed securely during its lifetime, and software updates only accepted from trusted sources.

 **Companies need to create room for experimentation, where teams can try small scale projects, and create quick wins in IoT. These then provide a reference for success which shows it can work, inspiring others. This can then gradually build, creating a rhythm of increasing successes."**

What about connectivity?

Built in connectivity is central to IoT. Each device needs to consider the right type for them, but I expect most will use cellular eventually, since cost is coming down and it removes many shortcomings to uptake found in other connectivity technologies.

For IoT-enabled businesses, cellular allows devices to connect out of the box. There is no need to worry about other existing LAN infrastructure which can involve complex setups. It's more secure and allows third parties – such as data processors and analysts – to jump into the organisation without the need for access to the main network.

On the consumer side, cellular means it just works. If devices over-complicate connectivity, that's a major turn off for customers who expect seamless, convenient experiences. My "connected" toothbrush for example has to tether to a smartphone app to transmit data. But I don't want to open the app every time I brush my teeth, so I don't use it, and the manufacturer loses my toothbrushing data, which they no doubt profit from. Well-designed cellular connectivity transmits data without inconveniencing the user.

And finally, what kind of people do you need to make all this work?

Such projects need people with sector knowledge, technical skills, and innovative mindsets. These people are in high demand and can be hard to attract if you are a stuffy company with rigid structures. But change is self-perpetuating: once companies start supporting free-thinking innovation and experimentation, they start attracting the kind of people who thrive in this environment.

– New business models for the connected world

Josef Brunner, CEO, Relayr



How is IoT disrupting business models?

IoT is creating whole new ways of thinking for those who

manufacture products, enabling them to change how they sell in a way that works better for them and their customers.

This is often talked about as moving from selling products to selling services. We'd go further and say that at its best, IoT is about selling outcomes. Rather than charging an hourly or monthly subscription, the manufacturer can sell the value that is delivered.

Can you give an example of how a company is changing?

Yes. In the old days, a coffee shop might buy an espresso machine and use it until it broke, or a better version came out. A newer service model might see them agreeing to rent a service – including machine, coffee supply, maintenance – for a monthly fee.

An outcome model might see them pay for 'cup as a service'. This simplifies what they are buying and gives them much more certainty. It removes the risk of capital outlay. And because they have eliminated risk, they are actually happy to pay more per cup.

So the IoT espresso machine manufacturer generates more overall revenue as long as they manage demand right – which becomes easier with detailed data on usage.

But it also opens opportunities to build a more direct relationship with the buyer. They can start selling the coffee beans and maintenance services directly, which are perfectly aligned to demand, since these services are now based on data that other sellers don't have. And by adding the convenience of automatic reordering to their service, they save the customer pain and lock them in to bigger contracts where few others can compete on convenience.

They transform how they sell, increase revenue, create new revenue streams, and reduce backend costs, all whilst delivering a more personalised service to their customer.

The same is true for many industries, from printers to automotive assembly machines. With more detailed data, they can sell based on value, which differentiates their offer and allows them to upsell other services based on a data driven understanding of what their customers need.

How can manufacturers start deploying IoT and moving to value-based models?

The main mistake companies make it to think of IoT as a technology project, looking at what tech is available and working out where to deploy it. Instead, they should start with the business problem.

Start by looking at what assets you have, and how they could be used to deliver a better experience for customers. Put the customer need at the centre of that offer. Then look at how tech can enable it.

– Re-organising your company to create disruptive IoT

Peter Van der Fluit, Principal at Chasm Group



Any company that currently makes or operates a physical product needs to be thinking about IoT. There is no reason not to embrace it – IoT creates a more direct relationship to your customer, a better user experience, and hugely valuable data. If you don't connect your product to create a differentiated offer, someone else will.

But recognising the opportunity is the easy bit – embracing it may need significant structural change. How can companies organise themselves to ride this wave of disruption and create differentiated disruptive products?

Zone to Win: Turning innovation into value

To be successful in embracing IoT, or any disruptive technology, companies should divide their business into four 'Zones' – an approach established by Geoffrey Moore in his book [Zone to Win](#). Two of these Zones focus on innovation, and two on the core business. Each need different leadership style, culture, financing and governance.

The **Incubation Zone** is where companies experiment with new technology, check it works, and explore where it can differentiate them. This asks: if we applied this technology, what can we do that we could not do before?

This zone should take a lean startup approach: try lots of small bets, test ideas quickly, develop minimum viable products, fail fast. Take promising products forward to small scale deployments, which explore how it works in the real world, capture user feedback, and iron out remaining wrinkles.

This zone needs a 'Creative and Collaborative Culture', with visionary leaders and agile teams. It should support free thinking, thoughtful experimentation, calculated risks and learning from mistakes. It should combine tech enthusiasts with product managers to balance innovation with keeping a firm eye of eventual business value.

Once the product is shown to work, it should be handed over to the **Transformation Zone**, where it is scaled to a point where it creates revenue.

Experimentation is now over, the product has to work. This is your roll out of a million connected devices. There must be a singular focus on one promising offer, and it must have sufficient support and investment from the top.

This zone needs a 'Compete Culture', which focuses on moving fast and delivering results within tight timescales, with directive leaders keeping everyone on a clear path.

Only once the product is generating significant and sustainable revenue, should it move on. This will either be to the **Performance Zone**, where the core revenue-generating business happens; or the **Productivity Zone**, which supports the performance zone to ensure it is constantly running optimally.

	Disruptive Innovation	Sustaining Innovation
Mission Critical	Transformation Zone Horizon: 2–3 years	Performance Zone Horizon: Next fiscal year
Enabling	Incubation Zone Horizon: 3–5 years	Productivity Zone Horizon: Next fiscal year

Don't neglect the most important Zone

A major reason companies fail on disruptive projects is to neglect the Transformation Zone. Many have great innovators who then hand over embryonic projects to the main business. But the main business is focussed on well understood, repeatable processes and is not in a position to take on a new unproven product which needs highly dedicated and specialised support. A project generating 1% revenue, will be an unwelcome distraction for the main business. It should remain as a transformation project until it a sizeable revenue generator.

This Zone to Win approach needs to be backed by a vision and buy in from the top and a high-level commitment to use IoT to transform the business. The CEO needs to be particularly involved in the Transformation Zone – this is where the big change happens that can put a company on the IoT map, and makes a CEOs reputation.

– Removing the connectivity roadblock to unleash global IoT disruption

Nick Earle, Chairman & CEO, Eseye



We've been talking about IoT disruption for a decade, why hasn't it happened yet?

It's certainly taken longer than many predicted. In 2011, industry experts said there would be 50bn connected devices by 2020. In fact, there are 11bn – a pretty big miss.

Companies have found IoT device design more complicated than they expected, which has slowed progress. And the big roadblock has been connectivity.

Why is connectivity such a problem?

Connecting a device isn't a problem per se. Smartphones are connected devices and they have done fine. The problem is that the business case of many IoT devices requires that they work everywhere.

Because there is a lack of interoperability between network operators, no network has more than 90% global coverage, even with roaming arrangements. You don't want a connected lawn mower which is returned in 10% of cases, or a connected health monitoring device that misses 10% of emergencies. That kills the business case.

This means a trade-off for companies deploying IoT. Either they accept 90% connectivity. Or they stitch solutions together, so products work across different networks – which is a distraction from their core business.

What's the solution to the IoT connectivity problem?

The Holy Grail is to seamlessly connect to the best network, based on where your device is in the world. Once you enable this, you start to see big backend savings because you can manufacture one product worldwide without needing different SIMs, production lines, service contracts, etc. But more importantly, a big barrier lifts to global IoT deployments, which suddenly makes much more ambitious IoT projects possible.

This problem is common in technology. All technologies start off proprietary. But after a time, users demand interoperability. Once this happens, adoption takes off.

So how is Eseye solving this?

We have established arrangements with many of the mobile network operators (MNOs) worldwide allowing our embedded SIMs to use their networks. Then, we have developed a cloud-based platform which manages orchestration between these MNOs. So the SIM connects to our platform which connects it to the best network wherever it is in the world.

More recently, we've teamed up with Thales and AWS to create Intelligent Cloud Connect. This is the world's first module which provides a complete connectivity solution – you integrate it into the device, and it handles data capture, connectivity, and uploading data straight to the AWS cloud. So for those looking for simplicity, the module can just be integrated into any device, and that's the whole connectivity challenge solved.

So, what does removing this connectivity barrier mean for the IoT industry?

Put simply, it means IoT can unleash its potential.

Companies selling connected devices can become truly global. And global companies can become data driven by deploying IoT throughout their value chain and in so doing transform their customer's experience of their product.

With this roadblock removed, we will start to see the movement from early adopters to the mainstream. That's when we will see the real winners of the IoT revolution.

We can guess at some of this. But true disruption, by its nature, will come from places we haven't even dreamed of.

The people who invented the internet could never have predicted Uber and Netflix. Likewise, we can only guess at what IoT entrepreneurs will come up with once they have access to data from trillions of devices capturing rich data on every aspect of our lives and businesses.

But it's likely to be an even bigger wave of innovation than the internet unleashed.

No Limits.



To talk to Eseye about the issues raised in this whitepaper or discuss the next generation of IoT solutions, please

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