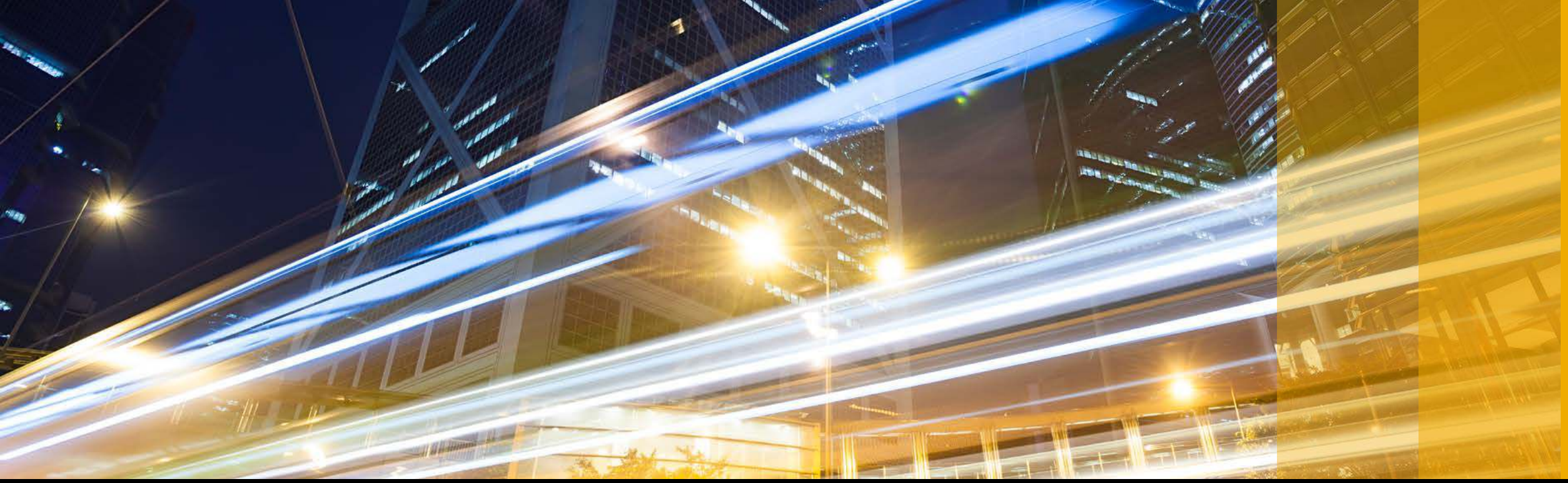


Insights on the Future of the Internet of Things (IoT)

21 experts share their intuitions about the IoT
and its impact on the future of business

SAP Run Simple

Contents

Focus Forward on the IoT and Business

When cell phone pioneer Peter T. Lewis coined the term ***The Internet of Things*** in 1985, few could grasp how wireless-yet-connectable devices would even work. It took great imagination and faith to predict how these things would change and shape the ways people live, work, and play.

The Internet of Things (IoT), and the machine-to-machine technology behind it, includes almost anything armed with a sensor and connected to the Internet. This is true for cars, wearable devices, thermostats, machines in production plants, and countless other devices that collect and exchange data.

The demand for data, and for the insights and information it offers, influences the design, manufacturing, and delivery of new connected products. Today, more than three decades after Lewis' prophecy, even the most intuitive thinkers around technology differ in their outlooks around IoT.

We asked 21 academics, entrepreneurs, engineers, and writers to wear the "hat of a futurist" and give us their thoughts on where they see the IoT is headed and the impact they foresee for businesses and for the customers these businesses need to attract, engage, and keep.

The “Intelligence of Things”

Some people suggest that IoT should stand for the “Intelligence of Things,” rather than the Internet of Things, given that countless smart devices are now streamlining our lives. From business-to-business transactions to post-purchase retail, the IoT is having a profound impact on business. We asked our experts to talk about the evolution of smart devices and how businesses will leverage the IoT to better serve customers.

“IoT grants us the ability to convert *anything* into a “smart” marketing object. The product itself becomes a dynamic new marketing channel – products can literally sell themselves within the customer’s path to purchase. Now executives can leverage spontaneous, opportune moments that occur throughout the customer journey by providing hyper-relevant messages at highly precise times, places, and proximities.” Click to tweet

Christina “CK” Kerley
Innovation Speaker and Futurist • allthingsCK

“AI will become “augmented intelligence,” reinforced by machine learning and cognitive applications, that connect with “Intelligence of Things” capabilities that almost become utilities like electricity.” Click to tweet

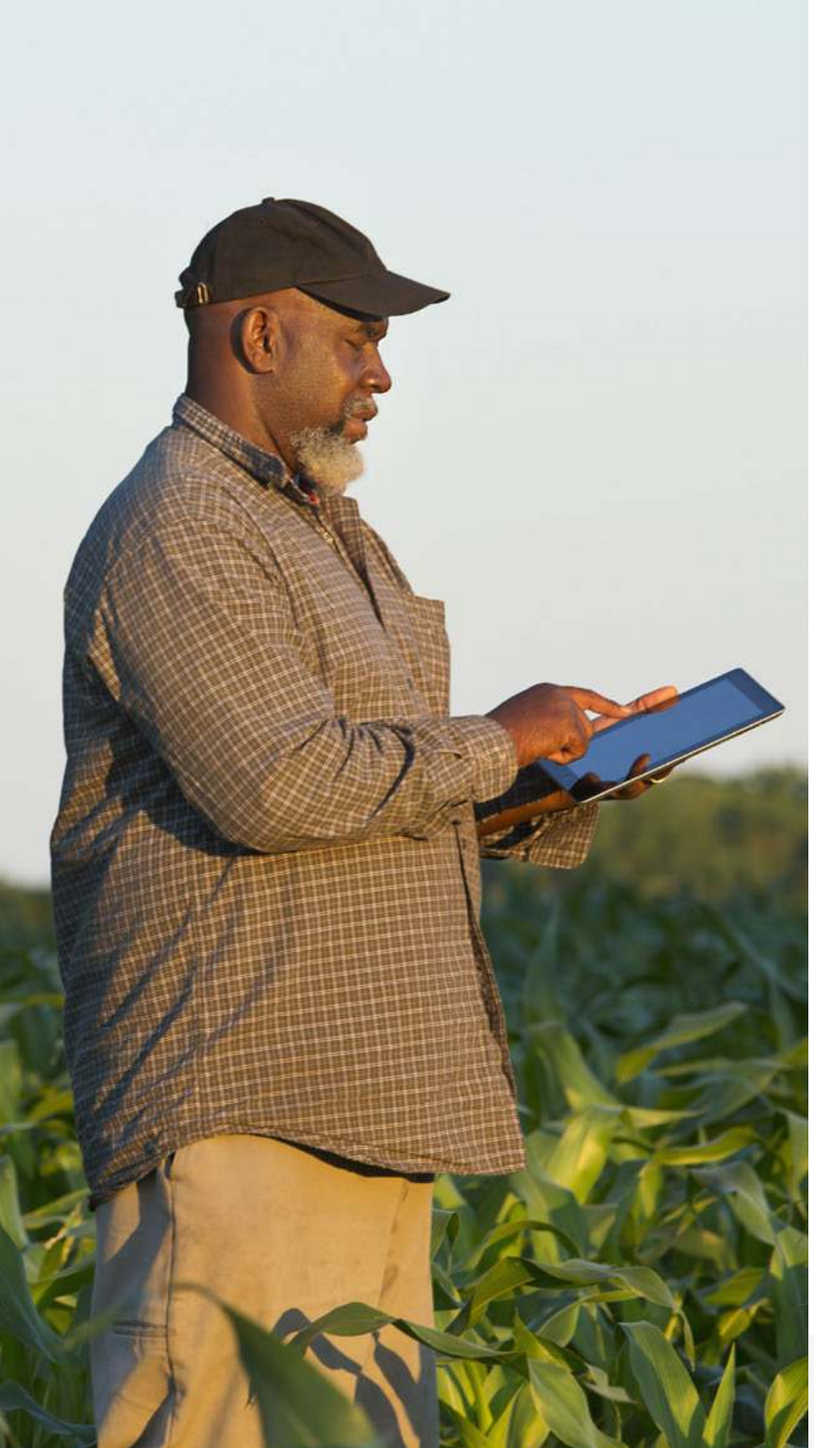
Ian Gertler
Mobile Evangelist • Marketing and Communications

“We’re seeing the development of smart cars that imitate the actions and responses of human drivers. Smart cars are going to become a fully competitive industry. As soon as 2025, we will witness sophisticated automotive self-diagnostic repair systems that communicate with other cars and maintain their internal environments.

Smart buildings are also in development, especially in the area of cognitive capabilities, and can already control and regulate lighting, temperature, and CO2 levels. IoT-optimized buildings improve safety measures for both employees and guests through digital ID monitoring and sensors. Adoption of the IoT into the architecture and infrastructure of buildings will dramatically increase.” Click to tweet

Ronald van Loon

Advisory Board Member, Simplilearn • Top 10 Big Data and IoT influencer



"You have to think every thing, big and small, will have sensors and capture a lot of actions. All this data coming from these things will drive companies to new business models, moving from products to data-driven services with more complete customer experience and engagement:

- **Travel:** Aligning flight data, luggage, and passenger position and optimizing logistic chains and passenger experience.
- **Agriculture:** Tractors receiving data connectivity, providing farmers info about which crops to plant, how, and where.
- **Production:** Optimizing the logistic chain like transported items, people movements, and vehicle locations with sensor data.

The list goes on—healthcare devices, fitness equipment, wearables, automotive, and city services like lighting and garbage collection." Click to tweet

Yves Mulkers
Data Architect, Social Influencer and Blogger • 7wData

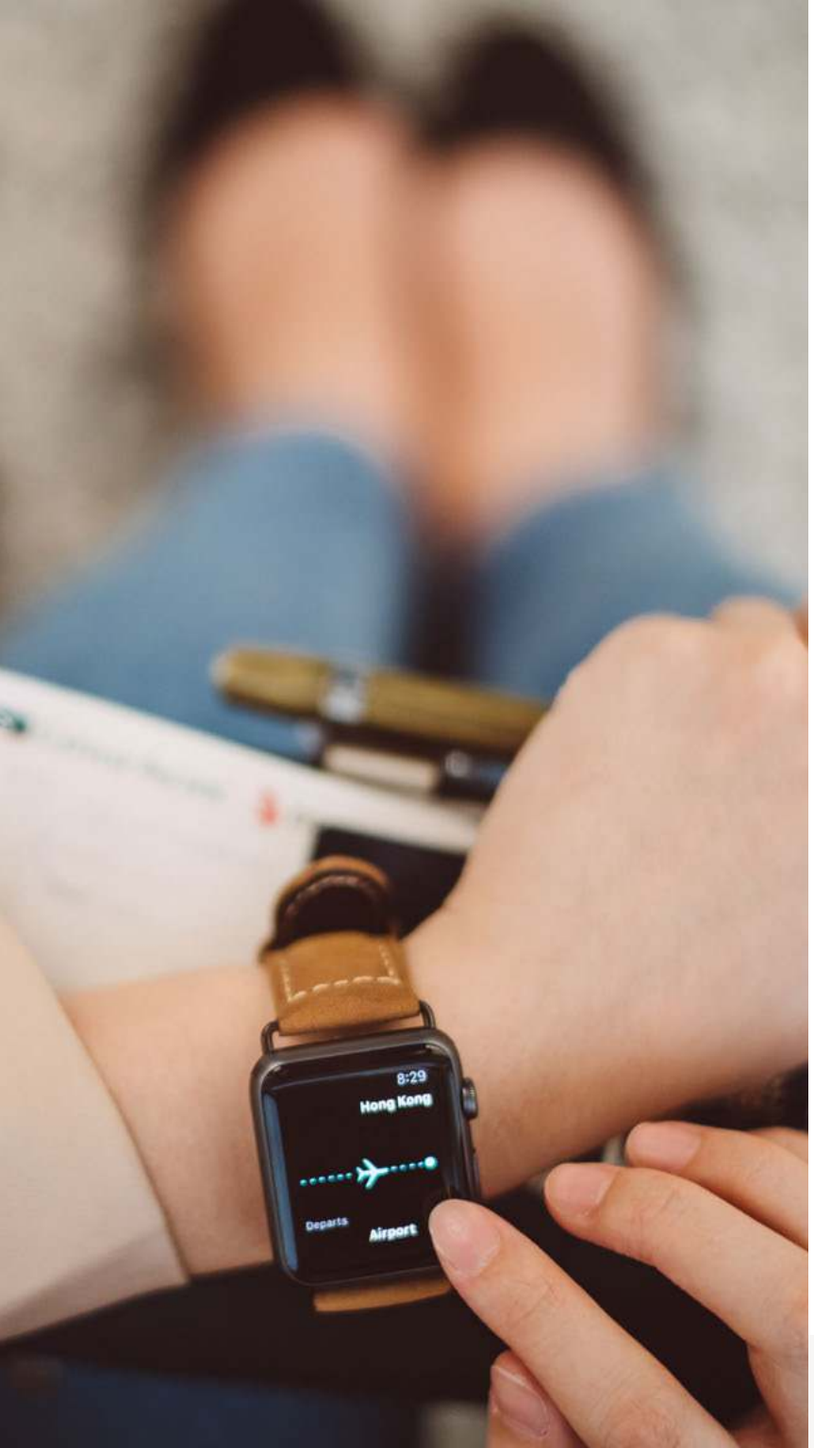
“Perhaps most critical to focus on are connected IoT devices that extend the customer experience 24 hours a day through custom hardware devices. We can see this with Amazon® Alexa®, smartphones, connected cars, and other smart devices increasingly disintermediating businesses.

Properly IoT-enabling their products and services is going to be essential for survival to many businesses.

Thus, the customer journey of tomorrow is going to look much different, and much better, to many of us as businesses increase their investment over the next 10 years in experience-related improvements.

The key to success is to proactively scan for new opportunities in the technology world and adopt them in a sustainable way.” Click to tweet

Dion Hinchcliffe
Chief Strategy Officer • 7Summits



"The Internet of Things is really the "**Internet IN Everything.**"

Quality, security, safety, and other product challenges can all be addressed through the integration of Internet connectivity. Downtime, disaster recovery, and resiliency can all be improved by adding command and control features that improve uptime performance and reduce outages.

IoT solutions can also network-in other IoT systems to add even more complex knowledge and resources. Expert systems in the AI (artificial intelligence) technology can gain knowledge as well as combine with other IoT networks to improve management decision making. Yet with any new solution, security and privacy should also be paramount in any implementation." Click to tweet

Evan Kirstel
Social Media Influencer and Strategist • EvanKirstel.com

“In its current guise, IoT will have the greatest potential in the sensory area, where it controls items and the energy they consume, such as lighting in the home and/or commercial premises realm. Home and office frameworks are the biggest areas for development where a number of IoT components can be controlled centrally and securely.

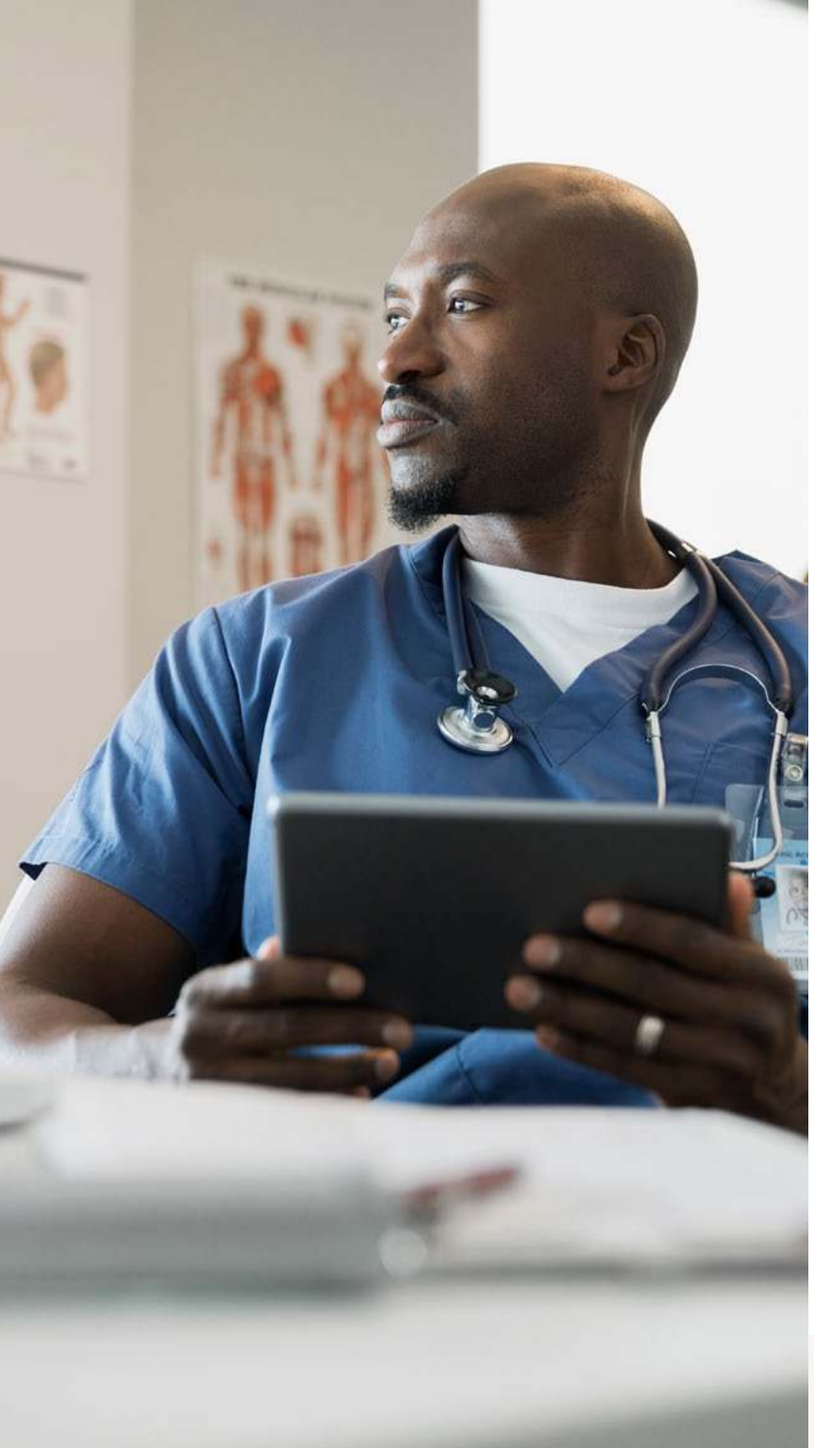
I get most excited about the ways in which the IoT can not only automate simple tasks but in how it can augment your daily life without being obtrusive or having to be turned on/off to start recording or tracking relevant data. Services we can’t even comprehend right now may become staples of our life or just passing fads.” Click to tweet

Christian McMahon
Founder and CEO • three25

“IoT connectivity and data have the opportunity to deliver operational efficiencies, new insights, and new revenue opportunities. Every company can benefit from improved asset utilization, predictive maintenance, and security threat detection and prevention.

I’m most excited about the potential for businesses to create new experiences and processes by more effectively collecting and using data from their own internal sources, along with data mashups with third parties such as weather, traffic, pricing, and customer sentiment.” Click to tweet

Maribel Lopez
Founder and Principal Analyst • Lopez Research



“In healthcare, we’ll see automatically connecting IoT data streams to AI systems.

This could mean hospitals collecting data streams from “things” like heart rate monitors, oxygen monitors, respiratory systems—a range of patient care machines and monitors that are either umbilically connected to the patient or “attached” to the patient, as in the case of fitness bands and Pulse O2 *[ed.: from Nokia Health, formerly Withings]* bands.

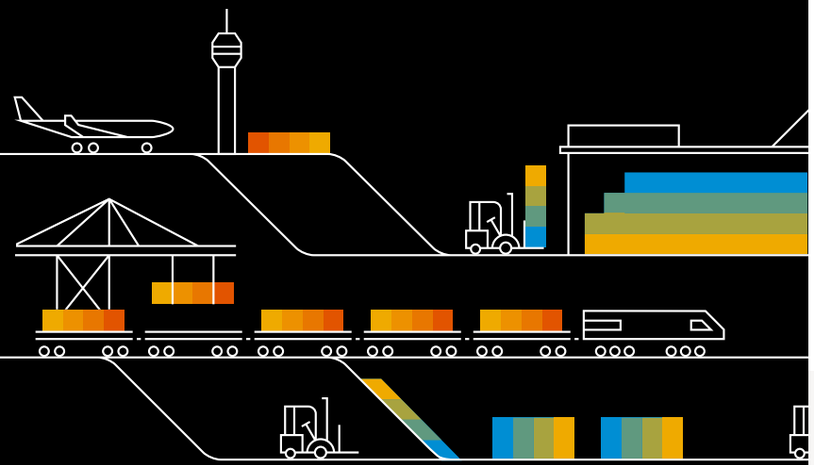
The data is fed into AI systems that can compare much about a given patient to other patients, leading to new regimens that can increase patient care and recovery success rates.” Click to tweet

Bob Egan
CEO and Founder • Sepharim Group

The Customer Journey

Our online searches dictate much of the advertising we see.

We asked our experts to imagine how those digital breadcrumbs, when seen through the lens of the IoT, will affect the daily lives of consumers.

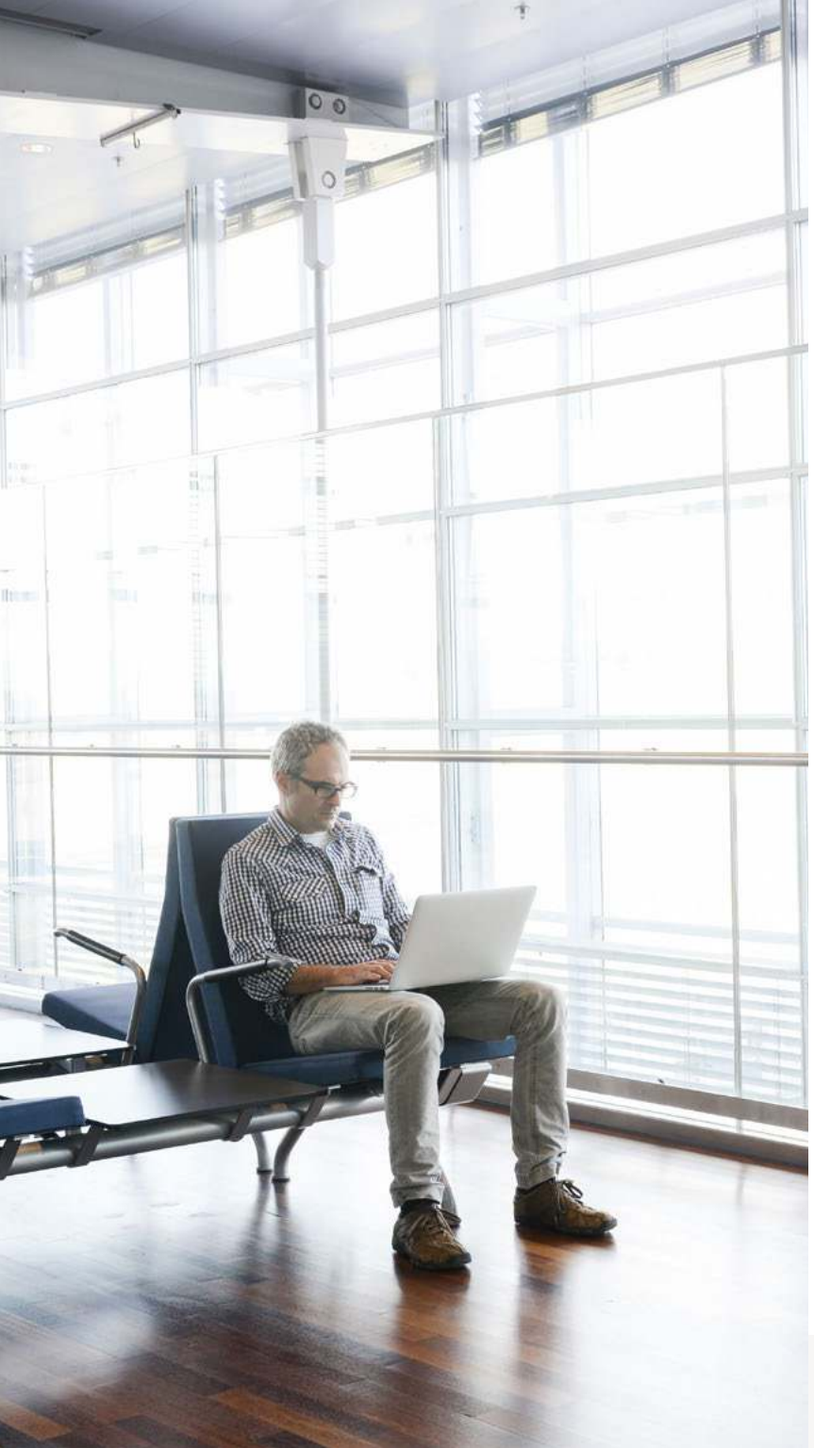


"The benefit of IoT will not just be a person getting a coupon when they walk into the local pharmacy. It will be them—and their physician—getting life-saving notifications when their blood sugar begins to drop and they need to reduce their insulin levels based on pattern recognition algorithms from the sensors around a smart device or wearable." Click to tweet

Ian Gertler
Mobile Evangelist • Marketing and Communications

"Businesses will develop true omnichannel customer journeys enabled largely by artificial intelligence, conversational user experiences, real-time autonomic analytics, strategic customer communities, and **immersive digital experiences**. This will all be fueled by coming advances making augmented and virtual reality commonplace." Click to tweet

Dion Hinchcliffe
Chief Strategy Officer • 7Summits



“The customer journey is awash in opportune moments:

Be it the moment a flight is delayed, prompting the airline to alleviate weary travelers through by giving them free Wi-Fi. Or the moment a commuter steps off the subway and their favorite coffee spot proactively texts ‘Shall we have your usual waiting for you?’

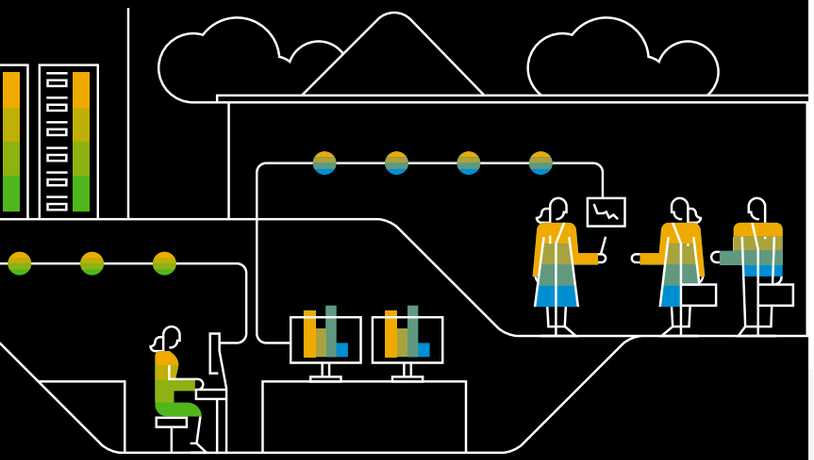
The customer’s journey doesn’t end at the purchase.” Click to tweet

Christina “CK” Kerley
Innovation Speaker and Futurist • allthingsCK

The Internet of Truth

Technology puts layers of irrefutable information at our fingertips.

We asked our experts how the concrete data coming from IoT devices will affect business decisions.



“We can interact with our customers before, during, and after the sale and determine their needs, find out what they liked and didn’t like, and gather and manage real-time data.

In the old days, the newspaper was the best method of advertising. Today, we can use data to share advertisements that are specific to and targeted to the customer, rather than pushing a random product to all customers, as we did in the past. Today, sports teams are correlating different facets of the IoT to optimize their training methods and improve performance.

Connected devices have challenges, but they also have vast potential to give customers what they want, when they want it, and in the precise way that they want the offer or product delivered.” Click to tweet

Bill McCabe
Top 50 IOT Authority on Twitter • IOT Recruiter

"Businesses and organizations will get closer to their customers and understand their needs with enhanced customer service and experience at all levels, at all times. This will be possible with more accurate data collected by sensors in IoT solutions and processed by Big Data analytics tools from the time they consider the product or service until the cycle of sales repeats itself. That will translate to an increase in revenue and better use of company resources." Click to tweet

Ahmed Banafa
IoT Expert and Author • College of Engineering, San José State University

"**Machines don't lie**. For that reason alone, the Internet of Things changes how business is done. Companies that embrace IoT will encounter challenges over the coming years in reconciling traditional business intelligence solutions, which often relied on estimates and theories, with the hard numbers that will come back through IoT data. The end result will be a much clearer picture of what's happening, but getting to that point will be a bumpy ride." Click to tweet

Eric Kavanagh
CEO • The Bloor Group

"What if you could know, in real time, down to the individual customer, precisely what your customers wanted your products to do? Intelligent IoT messaging enables customers to remotely control your products by messaging them on their favorite communications channels — e.g., SMS, WhatsApp, LINE, Viber, Twitter, etc. — without an additional app. Everything your customers ask your product to do can then be analyzed and sorted to help you quantify and prioritize future product development." Click to tweet

Ken Herron
Chief Marketing Officer • Unified Inbox Pte. Ltd.

"Most IoT usage focuses on customer-brand interactions, but it is also possible and very powerful to put IoT to use in customer-customer interactions. Including information about people sharing their opinions with other people will greatly increase the credibility of the user experience.

Supporting any shared opinion with real device-supported data—for instance, that the consumer has been using this device every week over the past four months and averaging 3.2 hours a week – can give a much clearer idea of how much the user knows when talking about the device." Click to tweet

Joan Carbonell
Innovation, IT, and Digital Transformation Strategist • Unarium S.L.

“The Industrial Internet of Things (IoT) offers huge value to organizations with large maintenance budgets. By installing hundreds or thousands of sensors on various parts of trains, ships, and trucking fleets, for example, transportation organizations can determine when parts need to be replaced before they break down. This not only increases safety and improves uptime, it also lowers costs. In the case of Trenitalia, the Italian train operator, the savings are calculated to be 10% of a US$1.5 billion budget.

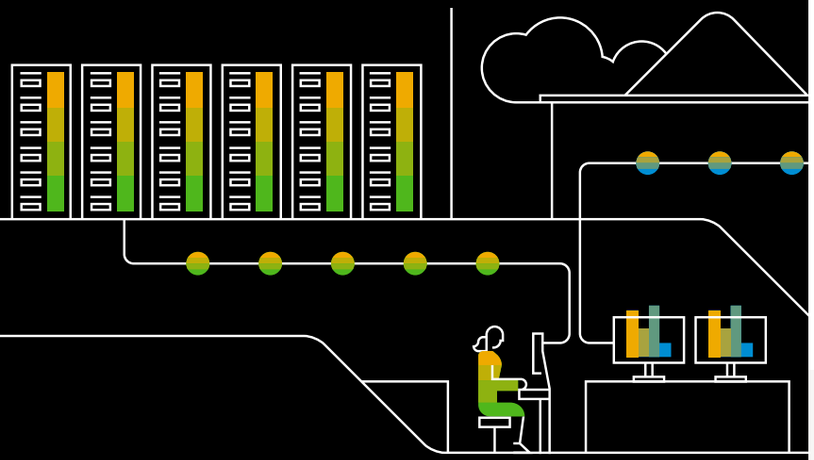
IoT is also having an impact on supply chains, allowing for transparency in tracking physical assets and the loads they are carrying. Coupled with blockchain and RFID technologies (radio frequency identification), this opens up the possibility of tracing food from farm to store shelf. This capability also heightens food safety and security. Any threats can be immediately identified and corrected without halting the sale of an entire category of a product.” Click to tweet

Jim Harris
#1 International Bestselling Author
and Management Consultant on Disruptive Innovation

The Forward Focus of Business

Innovation and efficiency don't always align with security and privacy concerns.

We asked the experts: What should business leaders consider and act upon as they develop strategies around the IoT?



"Companies are still not thinking about the importance of consistency across all customer touch points. Yes, the word omnichannel is in the vocabulary of many marketing and digital leaders inside of organizations. However, the execution of an omnichannel strategy is far from being accomplished in all but a few of the world's leading companies.

Perhaps this disconnect is due to delays in another important business trend: digital transformation. Digital transformation is often associated with technology, but it really is more about the changing wants and needs of consumers. Therefore, it is imperative that companies map their customer interactions to match these ever-changing customer requirements." Click to tweet

Daniel Newman
Principal Analyst, Futurum Research

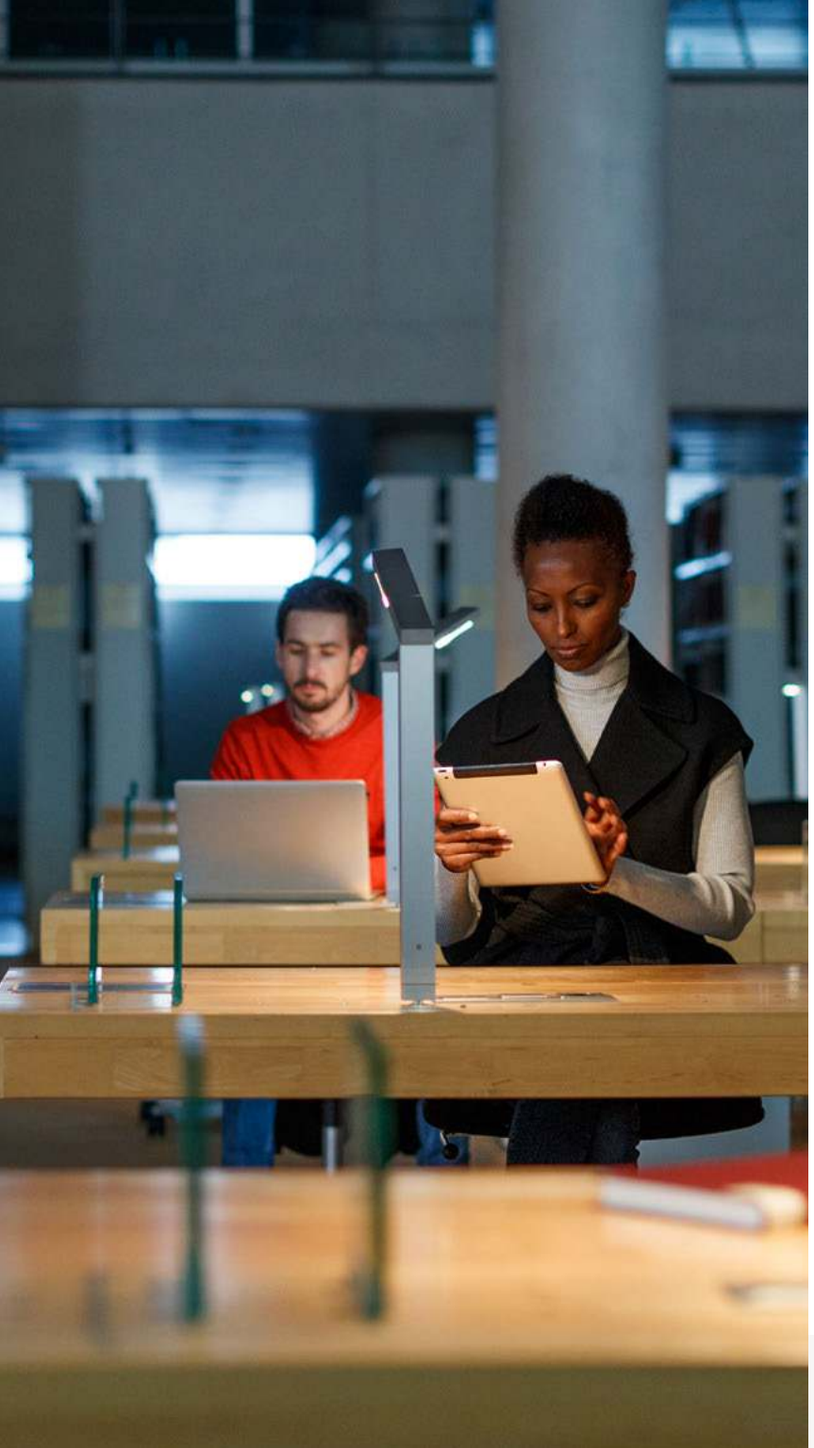
"Security, data governance, and regulation governance are challenges related to IoT growth. Who owns the data? And how to proceed with managing how other parties obtain permission and use the data only as intended? These are possible grey areas that could be difficult for both businesses and consumers to define." Click to tweet

Ronald van Loon
Advisory Board Member, Simplilearn • Top 10 Big Data and IoT influencer

"To ensure seamless connections between people, processes, and technology, we need to focus on education and security as much as the innovation. The first step for the mainstream IoT must be for organizations to improve and secure their operations and processes before they ever touch a potential customer or user. Next, the vast amounts of data must be turned into real-time actionable insight. Finally, internal teams must be trained and enabled.

There's much to be determined, but **the potential is unlimited** if done right." Click to tweet

Ian Gertler
Mobile Evangelist • Marketing and Communications



“Smart technology can be used for internal training, since keeping employees current in this environment can be difficult.

Two internal easier sells: IoT implementations that have clear cost savings and those that can have a positive impact on customer engagement. That’s where an organization should start. Also, rather than companies looking at customer loyalty, customers will rate the companies based on how well they serve them, on a recurring basis.

This will be a totally new era of brand loyalty.” Click to tweet

Chuck Martin
CEO of Net Future Institute and Editor of the MediaPost IoT Daily

"Whichever way IoT develops, we will have to be very aware of the privacy issues regarding the data IoT devices collect, store, and use. It could become pretty easy through these devices to profile somebody in great detail, and this data would be gold dust for people like marketeers and advertisers – and for hackers and criminal element." Click to tweet

Christian McMahon
Founder and CEO • three25

"IoT drives significant change in the way businesses interact with their customers or their competitors' customers, to transform the end-to-end customer experience journey, each and every time, forever. Organizations that understand this and that move early to adopt data science and apply cognitive computing to processing and analyzing this deluge of new data will gain such a significant advantage over their competitors that the competition may never actually catch up." Click to tweet

Dez Blanchfield
Chief Data Scientist • The Bloor Group

“Businesses need to develop metadata around many data sources and devise algorithms that aggregate and blend granular sensor data into valuable, actionable information. They then have to decide whether it’s better to enable people or develop the artificial intelligence to respond to critical conditions.

For example, consider a building information system that can integrate its data with those from neighboring buildings, municipal police and fire systems, along with local traffic patterns and weather. That system might inform inhabitants to wait 10 minutes before heading out to lunch because elevators are in high demand and the downpour outside is slowing to a drizzle. That same system might put entrances in a lockdown when there is nearby police activity.” Click to tweet

Isaac Sacolick
President, CIO of StarCIO • Author, Driving Digital
Blogger, Social, Agile and Transformation

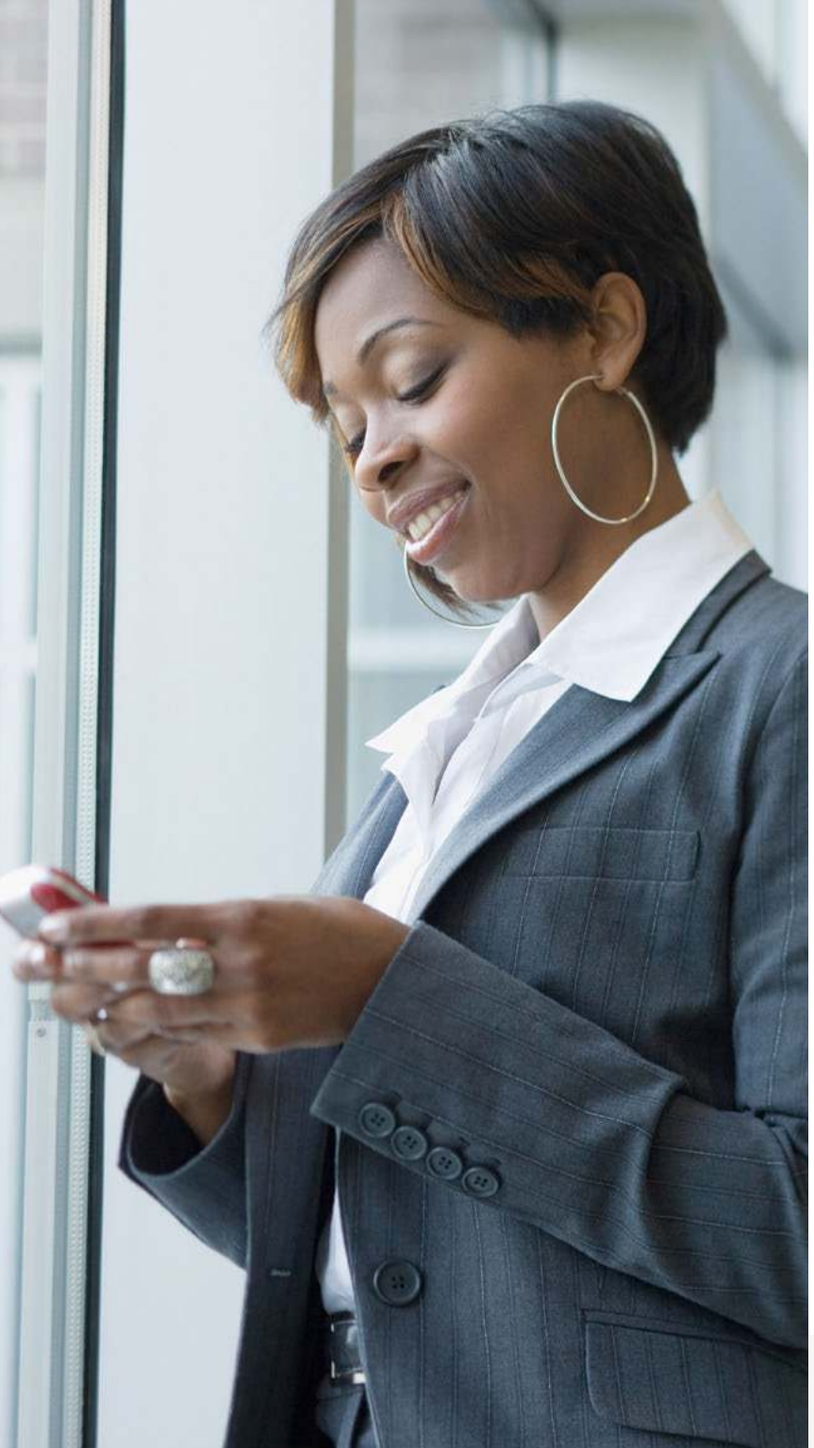
"Frankly, leaders at the enterprise level should look at the consumer market as an example of what not to do. Unfortunately, the consumer Internet of Things has commercially set the standard. It's not bad. It simply means **we must think about business process innovation,** in addition to an IoT ecosystem innovation to get there.

This is about innovating within thve enterprise to unlock new opportunities, not about creating proprietary devices or experiences that block out entire systems and other devices. Sharing among an entire ecosystem of innovative partners is now a crucial step to modernization." Click to tweet

Brian Solis
Principal Analyst • Altimeter, a Prophet Company •
Author of X: The Experience When Business Meets Design

"Along with enabling a constant feedback loop for product innovation, IoT provides companies with new ways to interact with their customers and provide post-purchase value to drive repeat buys, buzz, and loyalty. It could even be the moment when rain interrupts a family's annual beach vacation, letting the beach resort save the day by sending the parents options (and coupons) to enjoy a day at the local movie theater, museum, or bowling alley." Click to tweet

Christina "CK" Kerley
Innovation Speaker and Futurist • allthingsCK



“Businesses are not investing yet in creating a ‘culture of data’s value’ among their customers. I mean, many businesses are just trying to find ways to collect as much data as possible, in the most hidden and business-oriented manner, to avoid the risk that customers might object to that. This is because they see a potentially massive source of income in IoT and the data generated through it, and they prefer to opt for the shortest route to the goal.

However, this is, in my view, a self-destroying strategy. Sooner rather than later, customers will lose trust in their providers that are stealing their data in a surreptitious manner. At the same time, such a strategy might lead to reactions from regulators that increase applicable sanctions.

On the contrary, if a business is able to convey to its customers the value that their data has for it and the service which it is providing in exchange of such data, a much stronger link of trust will pay off in long term.

Trust is the backbone of IoT, and there is no shortcut to success.” Click to tweet

Giulio Coraggio
Partner and Co-Chair of the Global IoT Law Group • DLA Piper

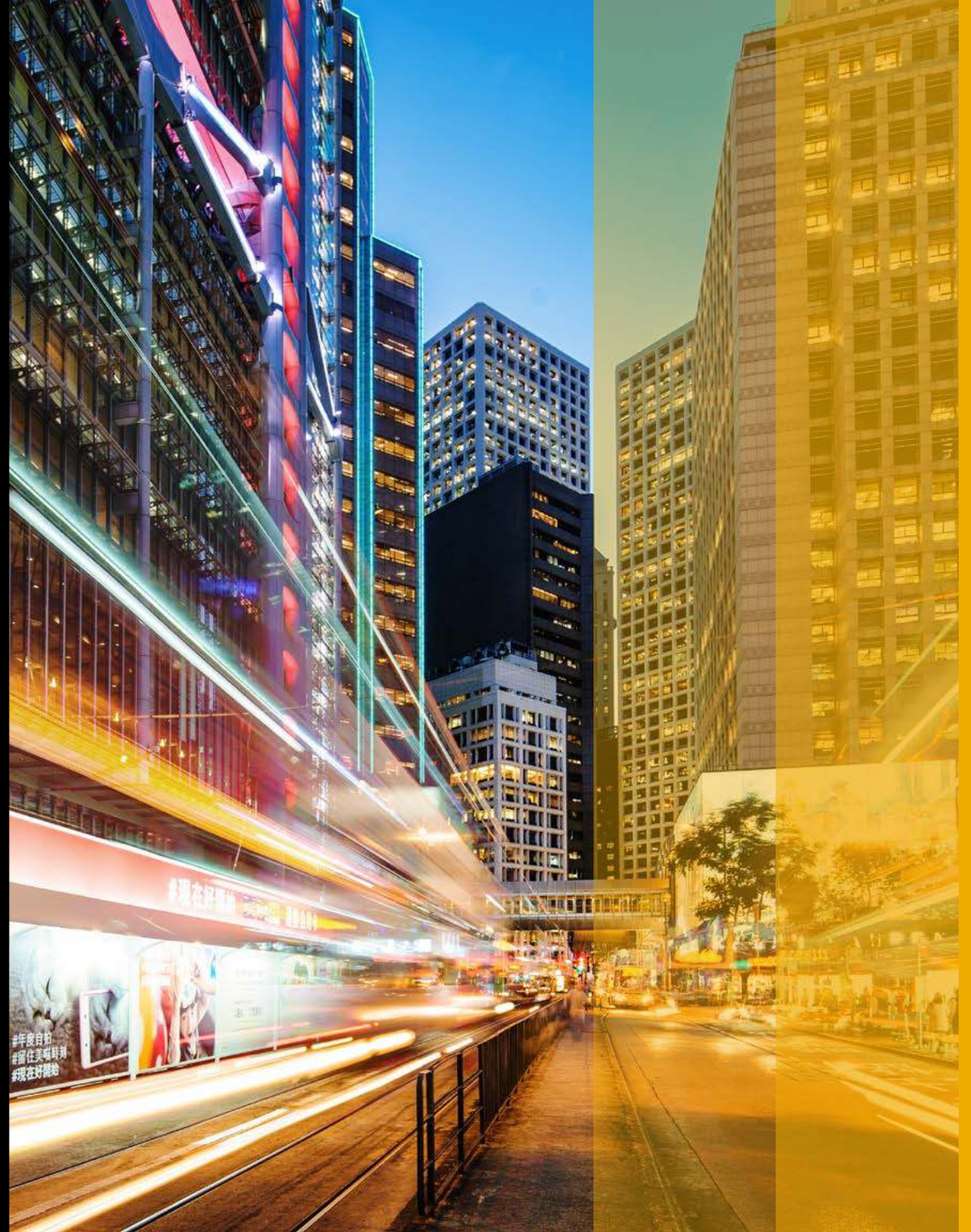
Our Experts Agree

The Internet of Things brings a kind of “supervisibility” to nearly every industry.

Along with that come a range of opportunities, responsibilities, and challenges.

See how SAP uses IoT to connect people, things, and processes here.

"Realizing the Value of IoT" download the IDC whitepaper sponsored by SAP.



SAP Run Simple