IoT

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Intelligence of Things Tracker®

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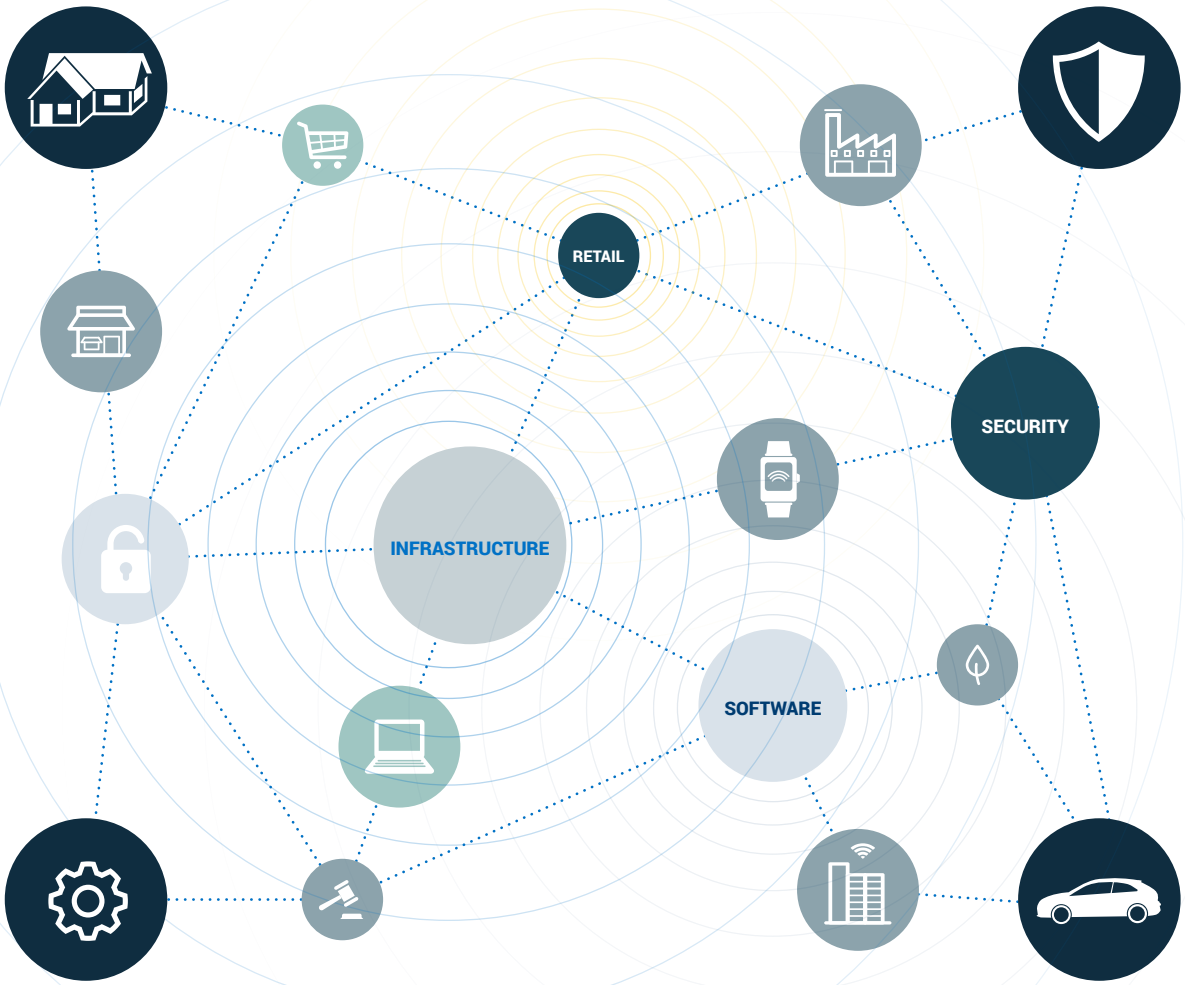

FIELD SERVICE

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WHAT'S INSIDE

5G technology has been making itself at home in South Korea, the United Kingdom and the United States, with its availability hotly anticipated by industry officials of everything from banking to telecommunications. Two-thirds of businesses plan to deploy compatible technologies by 2020. 5G gained immediate interest thanks to its ability to handle larger data amounts at quicker speeds, meaning more can be accomplished in shorter periods of time across longer distances. Numerous industries are taking advantage of 5G, and 61 percent of global enterprises are expected to be connected to the internet of things (IoT) by the end of the year.

The IoT industry, which may see some of the most significant benefits from 5G networks, has been growing exponentially over the past couple of years. Tying these two technologies together will allow 5G-enabled application programming interfaces (APIs) to expedite the development of apps that are more responsive to users' needs and will encourage greater IoT experimentation, enabling tests on everything from smart city sensors to smart cars. More than 250 million connected vehicles are expected to be on the road by the end of 2020, and no shortage of car and IoT manufacturers look to create them.

5G is likely to be critical to that connected IoT boom, which means IoT creators will need to grow comfortable with the changes the network technology will bring to their devices. Related innovations are ready to pick up the pace, and companies will need to weather growth, integration and security challenges to remain competitive.

Around the IoT world

Connected cars could produce as much as 100 gigabytes of data per second, according to some reports, and they must access 5G technologies to become popular, as faster data speeds and response times will be necessary to keep these cars running smoothly and connect them with a wider range of IoT devices and customer services. Implementing IoT technologies in cars could also have significant effects on high-tech network development in India, which is set to deploy 5G before the end of the year.

Autonomous vehicle developers in China are also hoping 5G will give them the boost they need to dominate the market. Local startup WeRide is looking to implement multi-sensor IoT systems in cars, enabling the machines to drive themselves. The faster data speeds of 5G networks are necessary for fully driverless cars, and the company is working with several providers in the space to achieve its goals.

China is far from the only country testing 5G's impact in self-driving cars. Researchers from the U.K.'s University of Warwick will be experimenting with how 5G-enabled sensors will impact autonomous vehicles. The tests will use such connections to share sensor data from one driverless

car to another, enabling safer operations and allowing vehicles to communicate with sensors on the road.

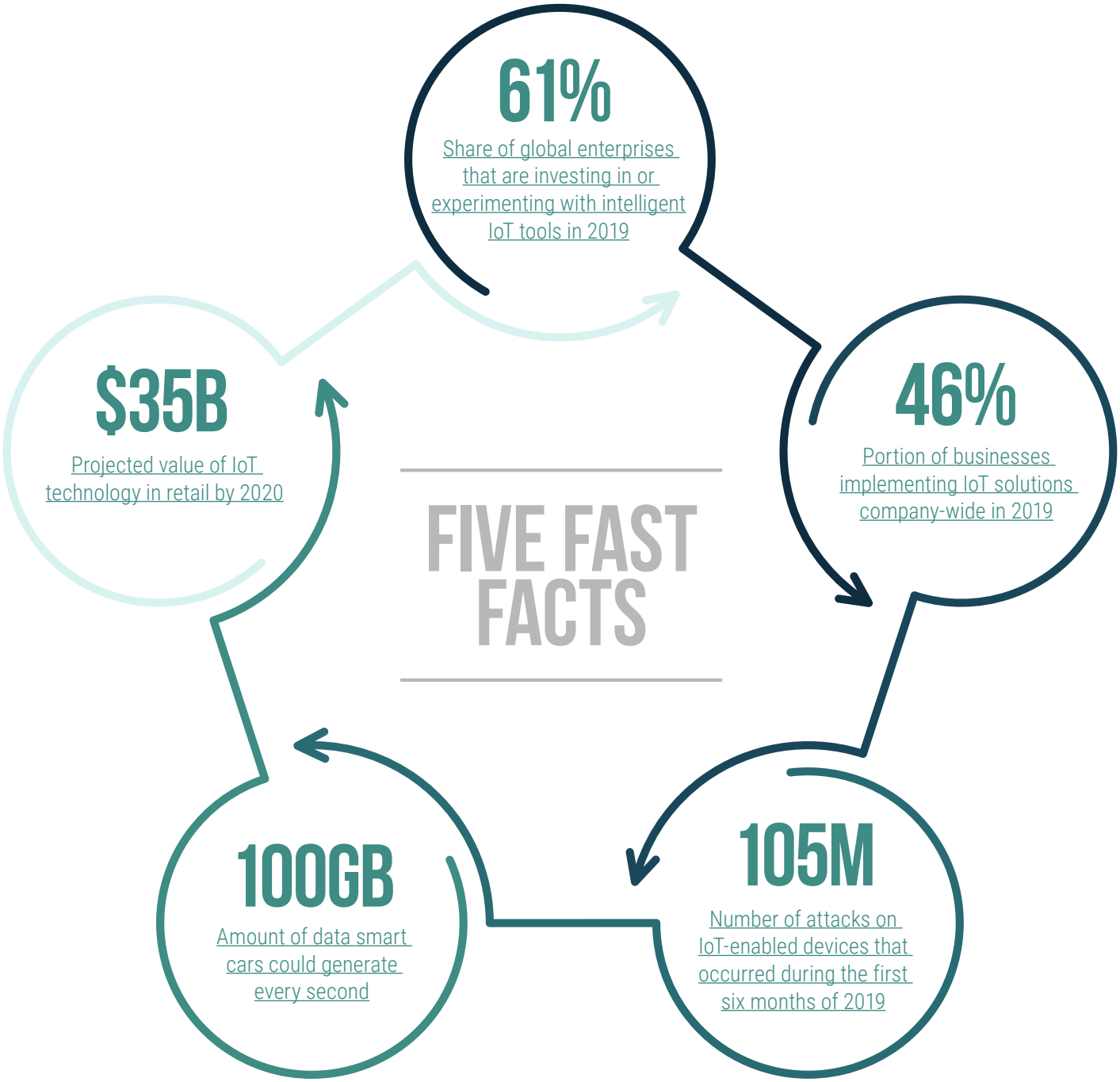
For more on these stories and other news from the IoT space, visit the Tracker's News and Trends section (p. 10).

IoT providers' 5G security issues

5G allows IoT providers to play around with more data, which could lead to an explosion of IoT-enabled devices in consumers' pockets and public areas like roadways. Developers still need to keep their eyes on security concerns as 5G and connected cars grow more commonplace. IoT security issues are as prevalent as ever, and fraudsters know it, said Sarah Tatsis, vice president of the Advanced Technology Development Labs for software and IoT solutions provider BlackBerry. For this month's Feature Story (p. 7), PYMNTS spoke to Tatsis about the security concerns IoT providers are facing as 5G and connected cars grow in popularity.

November Tracker updates

The November edition of the Intelligence of Things Tracker® includes a directory detailing notable providers in the space, with seven additions: Better Software Group, Eastern Peak, GSMA, Vates, Very, W·SENSE and Xage Security.



FEATURE STORY

5G AND CONNECTED CARS MEAN
Problems For IoT Security

IoT providers have hit an innovation streak in recent years, utilizing increasingly sophisticated technologies such as artificial intelligence (AI) and data tools like machine learning (ML) to rapidly expand the world of connected things. 5G's rise will only compound this growth, adding crucial support for future devices. Providers must still keep watchful eyes on their 5G devices' security measures, according to Sarah Tatsis, vice president of the Advanced Technology Development Labs business unit of software and IoT solutions provider BlackBerry.

Tatsis' division was formed from the company's acquisition of AI-enabled cybersecurity company Cylance and is also known as BlackBerry Labs. It explores ways to integrate AI into IoT-enabled devices and analyzes how AI and IoT might converge over the next few years — especially with 5G networks' help. All of this will be accomplished with an emphasis on security and user safety.

"The reason we've [created BlackBerry Labs] is, with the proliferation of IoT things, we're also seeing a huge increase in cybercriminal activities," she said. "We need to be able to keep up with how quickly technology like AI is being used in order to undertake these types of activities."

Connected devices, security and the rise of 5G

Security has always been critical for IoT device creators, but focusing on it is becoming necessary now that 5G networks are cropping up in markets worldwide. They will be "key enablers" of the mobile, IoT-connected ecosystem that will spread over the next few years, Tatsis said — a sentiment she seems to share with the rest of the industry.

Conferences like the Mobile World Congress, which recently took place in Barcelona, Spain, have focused heavily on 5G and its impact on IoT technologies. 5G's impacts on the speed and scale of data transmissions and IoT communications have been well documented, but providers will need to shift some of their focus on innovation to security for maximum growth.

"The IoT market is very fragmented, and there is a lot of innovation going on without a thought to security in [the] devices." Tatsis said. "You can go get a lot of [IoT-enabled] now that have zero thoughts to security: [The devices] all have the same passwords, they have no idea how you secure the supply chains [or] how you secure the hardware — let alone start securing the software stack — and they're all using different technologies. I think this is the clear challenge in terms of how the market will provide secure solutions."

BlackBerry Labs will apply AI and ML technologies to these security issues, generating potential mobile defense solutions along with those for connected vehicles. Some estimates put the number of such cars on the roads by 2020 at 250 million, and related security questions are constantly evolving.

"[A car is] one clear example, actually, where security becomes about safety," Tatsis noted. "If you can imagine an autonomous vehicle being hacked or a cybersecurity threat being initiated on an autonomous vehicle, now you're talking about a projectile, [unlike] the hacking of a smartphone, for example."

The industry is aware of these changing security needs, as 5G's rise pushes the conversation forward. This will also likely contribute to standards consolidation as the technology continues to spread. European Union member states published a joint report on 5G networks' potential risks, specifically citing the potential risks of 5G-connected devices from "non-state actors," or those outside the EU. Mary O'Neill, vice president of security for networked technology firm Nokia, has spoken about 5G and IoT security concerns, as has the chairman of the Federal Communications Commission (FCC), Ajit Pai. These entities are keeping a careful watch on the network protocol's changing security and privacy needs.

"I think that as 5G becomes more of an enabler … we'll start to see that that type of standardization will be forced," Tatsis said. "I think we're getting there. If we look back a couple of years, I don't think this was on people's radar or [it was] necessarily a key differentiator for an [IoT-enabled] device maker, but I think what we're going to see is that this will be a must have — not only a key differentiator, but if you don't have it, you won't be able to play in the IoT space."

IoT and opportunity

Consumer and enterprise-facing IoT-enabled devices will continue to expand into new verticals in the coming years, and security innovation is a necessity for providers that want to stay in the industry. 5G and AI represent an important opportunity for IoT, but providers should also remember that there is still space for the human touch.

"IoT really comes down to connecting people … so, from our perspective, [it is about] how we keep people and data and communications safe in this really hyperconnected world," Tatsis said. "It comes down to humans protecting humans from humans."

Humans use IoT-enabled devices to communicate for both legitimate and illegitimate purposes. Firms may rely on 5G networks and AI technologies to enhance these devices, but at the end of the day, human agents and developers are responsible for protecting users from human bad actors who are also using these technologies. That communication is gaining speed, and all humans involved will need to keep up.

NEWS & TRENDS

5G UPDATES AND CONNECTED CARS

UK university experiments with 5G sensors for autonomous cars

Researchers from the U.K.'s University of Warwick and the Warwick Manufacturing Group (WMG) want to see how 5G could enhance vehicles' communication abilities and perceptions of cars and obstacles on the road. The team will be collaborating with automated systems and technology provider National Instruments (NI) to test 5G equipment and other sensors to measure their faculty for facilitating cars' on-road data sharing to improve safety. The researchers will use NI's equipment for these experiments, which will also study the impact of 5G's speed on autonomous cars.

These tests extend WMG's previous 5G explorations. The company set a record for 5G communication speeds in 2018 by sending data to a self-driving car through an over-air transmission at a rate of approximately 2.9 gigabits per second.

WeRide turns to 5G to compete in self-driving car market

IoT is becoming normal for many industries: 46 percent of firms now implement related technologies. The self-driving space is one of the more competitive IoT integration areas as companies are racing to advance the technology to the point where such vehicles could drive under changing road conditions. Chinese technology startup WeRide is hoping 5G will give it an advantage over its competitors, as it is among many businesses in the country seeking to create IoT-connected cars with multi-sensor systems. Such solutions would need 5G support to advance further, as these networks enable data to be sent at quicker rates and enhance communications between drivers.

WeRide previously examined 5G's impact on the driverless space in 2018, when it partnered with telecommunications firm China Unicom to show how connected vehicles may be remotely operated through the networks. The former company also became the first in China to conduct such a demonstration on the high-speed network.

Hyundai tests 5G traffic control on IoT cars

Other automakers are looking to beat WeRide to the finish line, as Hyundai completed its October test of new traffic control technology with South Korean telecommunications company KT. The companies used 5G networks to send self-driving cars' traffic data to a server that updated the cars' maps in real time. The traffic navigation software then sent that information to other autonomous cars on the road for safety and security purposes.

The car firm's parts and services arm, Hyundai Mobis, also worked on the trial. The companies used three cars, dubbed M-Billy, for the tests, which placed obstacles in vehicles' paths to see how they would communicate road condition and obstacle data to other cars. Hyundai's traffic control technology could also be used to help autonomous vehicles detect jaywalkers.

Connected cars will need 5G to handle flood of new data

Vehicles that rely on sensors and software rather than human drivers need to very quickly send masses of data to ensure they are properly responding to roadside stimuli. Self-driving cars with enhanced computer systems could generate as much as 100 gigabytes of data every second, according to some reports, making 5G technologies intriguing for autonomous vehicle companies. These cars need networks that can handle vast amounts of data if autonomous control is to be achieved. 5G-connected vehicles would also be better equipped to communicate dangers to other connected cars and reduce frustrations related to traffic and parking, according to Aditya Chaudhuri, managing director and lead for communications, media and technology for financial and technology solutions provider Accenture India. 5G is expected to launch in India by the end of 2020.

SECURITY, DATA AND TELECOM

CCTV cameras, connected cars set to expand by the end of 2020

IoT technologies are set for rapid growth over the next few years, yet a few applications stand above the rest. Connected car and closed-circuit television (CCTV) cameras that are integrated with 5G networks will likely be two of the greater market opportunities by the end of 2020, according to recent research. It is projected that there will be 2.5 million IoT-enabled outdoor surveillance cameras in existence and that they will account for approximately 70 percent of all IoT endpoints worldwide by the end of that time period, while connected cars will likely represent 11 percent of all 5G endpoints. The report predicts that 94 percent of these vehicles will be connected to 5G by 2028, speaking to the network's importance regarding data transmissions.

IoT device expansion goes hand in hand with 5G network growth, with research predicting there will be 11.3 million 5G-connected IoT endpoints in play by 2021. These devices are still generating security concerns, however, as 105 million IoT-enabled devices were attacked in just the first six months of 2019. Security will remain critical for IoT developers as these devices continue to spread, especially among consumers. Industry reports find that 26 percent of them now own some form of smart device.

LG Innotek creates communication module for autonomous vehicles

South Korean electronics provider LG Innotek is another company innovating IoT-connected car communication through 5G. The company integrated chips from developer Qualcomm into a recently developed communications module that taps 5G telecommunications to send data between smart cars and mobile base stations. The product mounts a communication chip and radio frequency circuits inside the car to share real-time traffic and other data, as well as information about the car's exact location and conduct vehicle-to-everything (V2X) communications, which occur between connected cars and other IoT-enabled devices or smart sensors. The module will help alleviate some of the problems that come with using 5G for connected cars, including greater heat generation and potential signal losses.

Audi enters 5G partnership with Deutsche Telekom

German automaker Audi is expanding its use of 5G technologies by working with a company that is innovating for IoT. It recently announced a partnership with German telecommunications company Deutsche Telekom to further push its 5G innovations. The pair will work with the city of Ingolstadt, Germany to increase connectivity in urban areas, including through connected cars, and create IoT solutions for smart cities, according to a statement by Peter Steiner, managing director of Audi Electronics Venture GmbH. Audi will work with both entities to examine how 5G could help create connected traffic signals or other advanced traffic-handling systems.

The carmaker's decision to partner on this venture is the latest of its mobility efforts. It debuted an electric off-road car in September that comes equipped with automated driving technologies to ensure more visibility when off-roading. The vehicle is one of four concept cars Audi designed using IoT technologies.

Vodafone teams with EHang for 5G air traffic innovations

Autonomous aerial vehicle company EHang is also working on self-operating vehicles in Germany. The company is partnering with telecommunication services firm Vodafone to create what they call an "urban air mobility" (UAM) ecosystem, which will use 5G technologies to help support the eventual development of flying cars throughout Europe. EHang will use Vodafone's communications technologies for data and service support within the UAM system, and 5G will be essential to control landing and other components, according to a statement from Hu Huazhi, the former's CEO, chairman and founder. The companies will pilot these technologies as soon as regulatory permissions are given.

IoT DEVELOPMENTS AND CHALLENGES

Melita launches IoT solution for further connectivity in Europe

Firms are also moving to bring IoT to arenas outside the connected car space, with Maltese technology company Melita launching melita.io to support IoT connectivity, operations and portal services as well as machine-to-machine (M2M) communications for companies around Europe. It announced the brand after making efforts to expand its presence in Germany, Italy and Malta, where the advance of narrowband IoT technologies — a platform that specializes in supporting indoor coverage — is contributing to innovations like 5G-connected sensors that can be placed underground to monitor parking garages.

The brand's solutions come equipped with longer battery lives than traditional sensors and could lead to greater efficiency for factories and businesses. Harald Roesch, the company's CEO, noted the products could enable machines to alert workers when they need maintenance, preventing

the need for manual checks. These types of innovations will fuel the IoT retail market, which is expected to reach a value of $35 billion by 2020.

Quectel completes data test for VR-focused IoT module

Wireless solutions provider Quectel is among those testing out ways IoT could continue to grow, having recently completed its first data call for IoT applications using 5G. The call experimented with technologies that could aid commercial launches of 5G-enhanced IoT devices, according to a company statement, and utilized Quectel's 5G module. Future field tests will use that same platform, though the company has not yet released which types of devices or use cases will be included in these upcoming pilots. It did note that the module will support new laptops from electronics company ASUS.

The data call is one of the first successful implementations of technology that could support IoT development in areas like video monitoring and virtual reality (VR). 5G IoT is predicted to become commercially available for businesses and device makers by 2022.

Hiber to use satellites to expand IoT coverage worldwide

Dutch space startup Hiber has a new approach to increasing IoT availability, and its plans involve small, quick satellites it calls "nano-satellites." Just 10 percent of the world currently has access to IoT-enabled networks, Hiber co-founder Coen Janssen said, adding that the startup wants to use its Hiberband satellites to expand that connectivity worldwide. The company announced its goal to bring IoT to areas lacking access to digital technologies and networks following its 2018 launch of two satellites.

The Hiberband network is a low-power global-area network (LPGAN) that manages IoT devices. It is similar to a low-power wide-area network (LPWAN) and integrates with sensors and other devices, expanding IoT communication without requiring expensive infrastructure development. Hiber is focused on developing IoT support in several industries, including agriculture and tank and silo monitoring. The technology could also be used to track illegal fishing activities or water supplies.

USDA conducts smart farm pilot using IoT

One example of IoT in farming can be seen in the U.S. Department of Agriculture's (USDA) new experiments. Its Agriculture Research Service (USDA ARS) has created a pilot for smart farms — Farmbeats — that uses IoT and cloud technology to enable farmers to receive data about their lands' conditions in real time. The program uses AI to visualize data for both farmers and researchers. The USDA will be developing the pilot on its 7,000-acre Beltsville Area Research Center farm and will use smart sensors and IoT-enabled farming equipment to send agricultural data to the cloud.

These smart sensors could enable research to be conducted much faster, freeing up time for researchers to actually analyze collected data, according to Michael Buser, national program leader for engineering at USDA ARS.

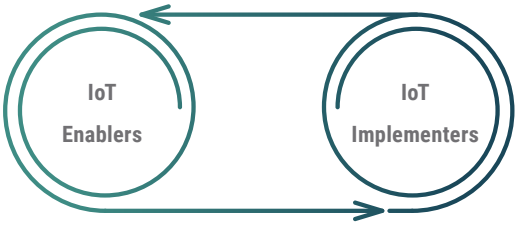
METHODOLOGY

Every month, we identify active suppliers in the IoT ecosystem by combing through leading industry forums, analyzing research reports and assessing news coverage from around the globe.

To provide an objective assessment, we group these suppliers under four categories: devices, software, services and infrastructure.

The Tracker's Supplier Scorecard has been further divided into two groups:

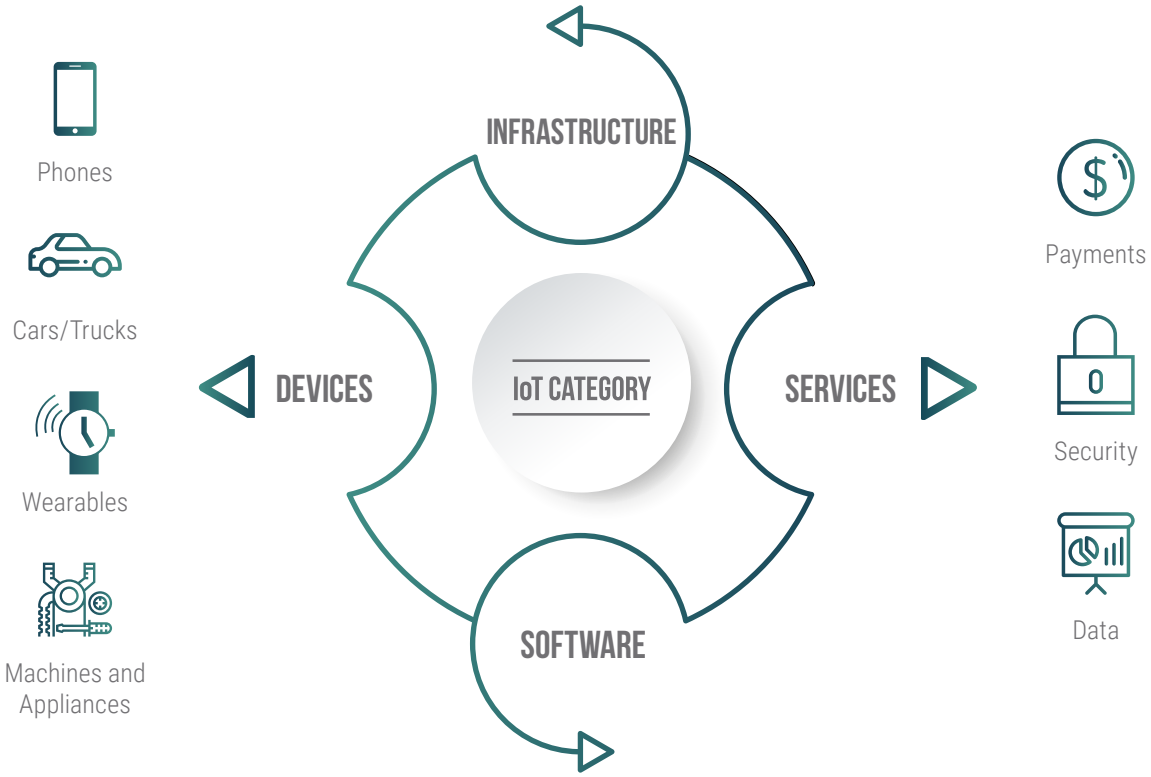
This group includes companies that are focused on developing and investing in IoT capabilities and new technologies.



Companies included in this group are dedicated to bringing IoT devices and services to market.

Each of the enablers and implementers in the directory are ranked on the services they extend in the four IoT categories. For a conclusive measure, we quantified their recent activity and public innovation profile in the space through LinkedIn and Google, marking them as market and company indicators.

The narrowed list of suppliers selected to be a part of the Tracker are those that appear most often in our research. Information on the selected companies included in our Supplier Scorecard is sourced from their respective websites.



IoT Category	IoT Service	Description
Devices	Wearables	Wearable devices that extend tools such as health and fitness tracking
	Phones	Handsets that come with embedded chips for IoT capability
	Machines and Appliances	Manufactured products containing sensors that transmit data
	Cars/Trucks	Cars and trucks with integrated circuitry for IoT
Software		Software developments with IoT applications
Infrastructure		Architecture necessary for connecting devices, including sensors, chips, gateways and platforms
Services	Data	Data infrastructure, collection, storage, processing, modeling, analysis and visualization
	Payments	Gateways, infrastructure and software associated with payments in the IoT ecosystem
	Security	Security solutions for the IoT environment, including data and devices

PYMNTS will periodically update scores based on new developments. If you would like your company to be considered for inclusion in the Tracker's Supplier Scorecard, or if you wish to have an existing listing reconsidered for an update, please head over to our profile submission/update page.

TOP 10

TOP 10 IoT IMPLEMENTERS

01	DELL	SCORE 100	TIE
01	HUAWEI	SCORE 100	TIE
01	LG	SCORE 100	TIE
01	SAMSUNG	SCORE 100	TIE
05	Hewlett Packard Enterprise	SCORE 99	
06	FUJITSU	SCORE 81	TIE
06	Lenovo	SCORE 81	TIE
08	placemeter	SCORE 76	
10	ARROW	SCORE 76	
10	MARVELL	SCORE 76	

TOP 10 IoT ENABLERS

01	amazon	SCORE 100 TIE
01	ARM	SCORE 100 TIE
01	cisco	SCORE 100 TIE
01	Google	SCORE 100 TIE
01	intel	SCORE 100 TIE
01	verizon	SCORE 100 TIE
07	vodafone	SCORE 99
08	aruba a Hewlett Packard Enterprise company	SCORE 98
09	COMCAST	SCORE 95
10	LANTRONIX®	SCORE 93

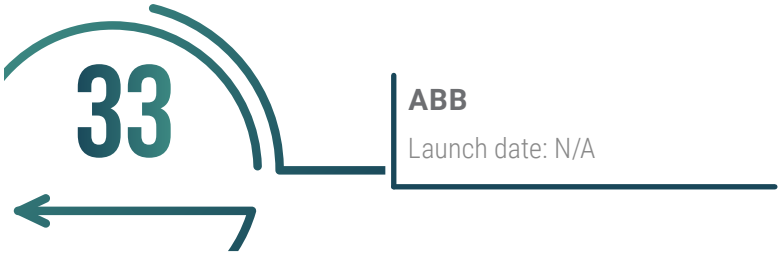
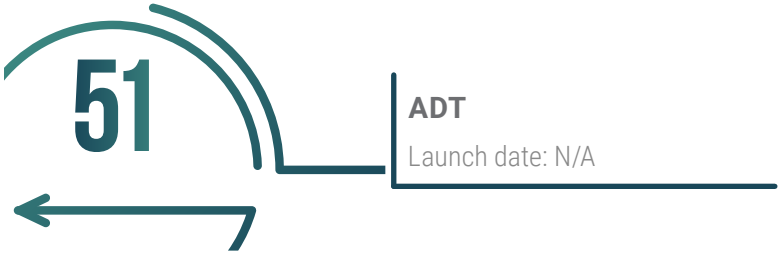


ABB manufactures and sells electrification, robotics and motion, industrial automation and power grid products.

Acer makes information and communications technology products including PCs, displays, projectors, servers, wearables, tablets and smartphones, offering a cloud-based ecosystem intended to enable customers and businesses to connect their devices and manage data.

AdhereTech is a healthcare firm that manufactures smart wireless pill bottles for patients in pharmaceutical and research engagements. These pills are intended to track and improve adherence, collecting and sending all data in real time. Patients that miss doses can receive customizable alerts such as automated phone calls, text messages, light-up alerts and more.

Adidas, the German manufacturer and sportswear designer, has entered the internet of things world with miCoach, a service that covers hardware and software developments for fitness tracking. Adidas commercializes wearables like smartwatches, shoe sensors and smart soccer balls and provides users with activity-tracking apps that allow for real-time coaching and training scheduling.



ADT provides security and automation solutions for U.S. and Canadian homes and businesses. Its solutions can control access, react to movements, sense environmental conditions such as flooding or carbon monoxide and respond to personal emergencies like injuries or incapacitation. Users can also remotely access their security videos and control lights or other facets of their homes or businesses.

Founded in 2011 in Toulouse, France, Adveez offers a complete solution for monitoring and controlling travel. The solution is an integrated offering comprising electronic boxes installed on vehicles or personnel, a communication network and a Software As A Service (SAAS) software solution for data exploitation.

Implementers Scorecard – Suppliers are listed in alphabetical order.

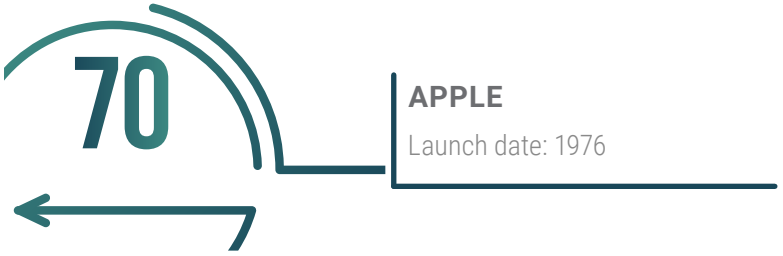
Airbus is an aircraft manufacturer consisting of three major segments: Airbus, Airbus Helicopters and Airbus Defence and Space. It sells to worldwide airlines, governments, militaries and space agencies.

Alarm.com is an internet of things company that develops security and smart home services. Their software and devices offer services like interactive security, video monitoring, access and energy management. The company also provides home automation services that integrate different home devices and let users operate them via their smartphones.

Alibaba Cloud develops scalable cloud computing and data management services that include data storage, relational databases, big data processing, anti-distributed denial of service attack protection and content delivery networks. Its research and development efforts include the advancement of internet of things technology, virtual reality, smart homes, automotive networking and information systems and cloud-based mobile device operating systems.

Implementers Scorecard – Suppliers are listed in alphabetical order.

Ambarella develops low-power, HD and ultra-HD video compression and image-processing solutions. Its products are used in a variety of professional and consumer applications including automotive video-processing solutions and security IP, sports, wearable and flying cameras. Ambarella compression chips are also used in broadcasting TV programs worldwide.



Apple works on the design and development of products ranging from electronics and software to internet services. Its consumer electronics include smartphones, wearables, computers and smart TVs, and its software development offerings include web browsers and operating systems.

Arrow Electronics is a leading global provider of IoT connectivity products and services. It distributes electronic components and computer products to industrial and commercial customers, offering a variety of products including computer systems, peripherals, software and mass storage products to original equipment manufacturers and commercial customers worldwide.

Arxan Technologies offers security services for IoT, mobile and desktop devices. Its products offer customers protection against financial loss, brand damage, fraud, IP theft, stolen credentials, fraudulent transactions, unauthorized access and non-compliance with regulatory and industry standards.

ASUS engages in manufacturing and wholesaling computing, communications and consumer electronics solutions. The company is pioneering mobile trends with the ASUS ZenFone™ series and rapidly developing virtual and augmented reality products as well as IOT devices and robotics technologies. ASUS recently introduced Zenbo, a smart home robot designed to provide assistance, entertainment and companionship to families.

Athos provides internet of things-enabled fitness clothing paired with an app offering muscle-activity tracking and insights into more effective athletic training.

Atlas Wristband is a connected device that tracks fitness data, such as exercise repetitions or burned calories, and presents it in a mobile app. The system is updated frequently to include new activities and metrics, and allows for two different modes: Coach and Freestyle. Coach mode gives users tracked routines to follow, while Freestyle mode records just the data from users' personalized exercise routines.

Augury is an industrial internet of things company bringing predictive maintenance to new markets with cutting-edge machine learning and artificial intelligence technology.

August Home develops smart home-access products that use encrypted locking technology, enabling customers to use smartphones or computers to create virtual keys for their homes. This allows them to grant access to house cleaners, dog walkers, delivery service workers and guests — and control how long that access lasts.

AUTOMILE

Launch date: N/A

Automile develops an online platform that connects drivers and fleet managers with vehicle data. Its web app provides mileage and compliance logging, driver identification, messaging, real-time tracking and other features, and the company also offers asset tracking solutions.

AVIVA

Launch date: 2000

Aviva is the sixth-largest insurance company in the world, measured by net premium income, and has approximately 43 million customers in 21 countries.

AYYEKA

Launch date: 2011

Ayyeka develops end-to-end remote monitoring solutions that streamline and secure the process of bringing field data to decision-makers and SCADA systems, enabling smart infrastructure and environmental networks.

BABOLAT

Launch date: 1875

Babolat is a sporting goods manufacturer with a connected solution called Babolat PLAY. Connected racquets and smartphone apps enable users to check their stats, power and technique and compare their performances with friends. The company also offers Babolat POP, a connected wristband that can be paired with smartphones and tennis racquets to collect performance data.

BAYSHORE NETWORKS

Launch date: 2012

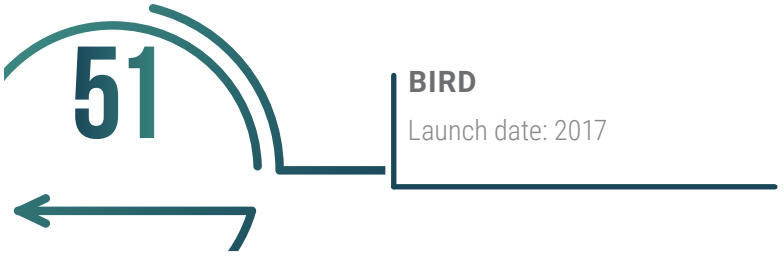
Bayshore Networks provides cybersecurity solutions for the industrial internet of things. Its products aim help companies deliver safe and secure integration of informational and operational technology networks, systems, data and infrastructure. Its network gateway offers security solutions for operational assets from internal and external cyberthreats while enabling operational data to be shared with business systems for monitoring, controlling and analysis. The company also offers security and protection for smart cities.

New!

BETTER SOFTWARE GROUP

Launch date: 2010

Better Software Group creates software solutions for user experiences and user interfaces, with products that focus exclusively on the development of internet of things and industrial internet of things services. It has provided software for the internet of things-enabled cloud, environmental applications and wearable devices.



Bird is a dockless electric scooter rental company that operates in parts of the U.S., Austria, France, Israel, Mexico and Belgium.

Blossom offers a smart watering device that builds schedules according to local weather forecasts, historical data and vegetable types. Users can also input and customize their own schedules.

The Boeing Company manufactures airplanes, helicopters, rockets, satellites and missiles. It is currently the fifth-largest defense contractor in the world and is the largest exporter in the U.S. by dollar value.

Robert Bosch GmbH is an engineering and technology company with four business segments: mobility, consumer goods, industrial technology and energy and building technology. Its products include well-known brands like Dremel, Dynacord and Siemens.

Bragi develops virtual audio assistants to enable productivity, enhance awareness and entertain users. The Bragi Dash Pro is a pair of wireless intelligent earphones featuring Bluetooth connection to other devices. The earphones also enable users to listen to music, or can be used as real-time translators or fitness trackers.

British Gas is an energy and home services provider offering its customers smart meters for gas and electricity that help them monitor and control energy usage. The company also offers a smart thermostat that enables users control their heating and hot water from their smartphones, tablets or laptops.

Bsquare offers DataV, a software solution designed to enable businesses and industries to improve their operations by using data from connected devices. DataV provides users with several tools, including device-side logic, cloud analytics, predictive reasoning, predictive analytics and business process optimization.

C3 IoT provides an internet of things development platform that allows for the design, development and deployment of Big Data/internet of things applications that leverage telemetry, elastic cloud computing, analytics and machine learning for the usage of predictive analytics. The company also offers internet of things applications like supply chain optimization, predictive maintenance and customer engagement.

Caeden develops design-focused earphones and wearable devices that can sense and manage stress via tracking of variables such as pulse and physical activity.

CATERPILLAR

Launch date: 2014

Caterpillar manufactures construction and mining equipment like backhoes, compressors, diesel engines and tractors. It was known as the Caterpillar Tractor Co., but simplified its name to Caterpillar Inc. in 1986.

CEL

Launch date: 1959

California Eastern Laboratories (CEL) sells and markets compound semiconductor devices from the Renesas Electronics Corp. The company's products include radio frequency components, solid state relays and photo detectors. It also develops Cortet, a connectivity management suite that includes radio services like modules and gateways, software libraries compatible with multiple ecosystems, and the Cortet App, which allows for devices control and cloud solutions.

CENTRICA

Launch date: 1997

Centrica is a British multinational utility company headquartered in Windsor, Berkshire. Its principal activity is the supply of electricity and gas to businesses and consumers in the U.K. and North America.

CLEAR CHANNEL OUTDOOR

Launch date: 1901

Clear Channel Outdoor entered the internet of things market with Clear Channel Outdoor RADAR, which uses aggregated mobile data to gain information about who is exposed to its advertising displays and how they interact with brands afterward.

CONTROL4

Launch date: 2003

Control4 manufactures wireless home automation products and enables users to virtually control any home or business devices. The company has developed hardware and software solutions to remotely monitor and automate home theater and television, video, multiroom music, lighting, energy, temperature and security functions.

CUBICAL LABORATORIES

Launch date: 2013

Cubical Laboratories offers solutions to remotely monitor electrical appliances at households, hotels and office environments. The company produces smart home controllers and switches, wireless cameras as well as the software and applications necessary to control electronic devices, lighting, fans and curtains via smartphones or laptops Users can also get real-time insights, graphs and analytics regarding energy usage data and consumption.

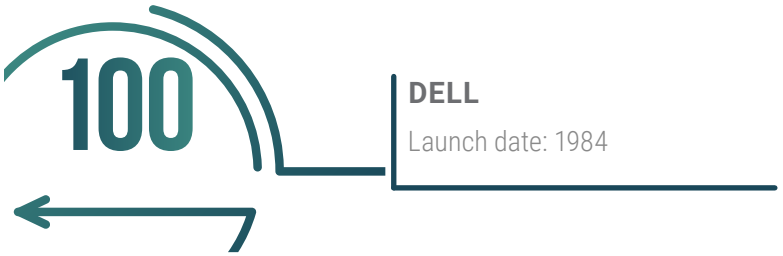
DAIMLER

Daimler produces premium cars and commercial vehicles with a global reach. Its divisions include Daimler Buses, Daimler Financial Services, Daimler Trucks, Mercedes-Benz Cars and Mercedes-Benz Vans.

deako

Internet of things and smart electronics provider Deako offers an upgradable smart lighting system, allowing users to control their homes' lighting without requiring mobile apps or additional remotes.

DELL



Dell's participation in the internet of things industry covers areas from infrastructure solutions to analytics capabilities, as well as security services.

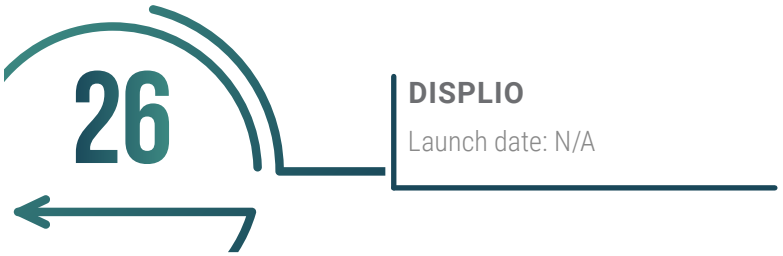
Density

Density has developed a small sensor that measures how busy locations are in real-time, using depth sensing technology, computer vision and an onboard quad-core processor to anonymously measure and manage entrances and exits through doors. Density system is designed to protect privacy and can be deployed into places where video cameras are not allowed, such as stadium bathrooms, churches, secure corporate offices, elementary schools and dressing rooms.

digicert®

DigiCert provides identity, authentication and encryption solutions for the web and internet of things. Its standard sockets layer tools and public key infrastructure certificates ensure correct authentication of devices as it connects, and protects communication between devices.

DISPLIO



Latvia-based Displio produces a self-standing WiFi-connected digital display capable of showing information such as email alerts, weather updates and shipment tracking information.

DHL is a leading global logistics company with a presence in more than 220 countries and territories across the globe.

DroneHopper is a drone designed to act in extinguishing forest fires. It is a high-tech, self-guided drone designed to act in controlling and extinguishing forest fires.

Dyson produces vacuums, air treatment devices, lighting solutions and hand dryers. Dyson Pure Cool Link is an air purifier embedded with connectivity technology that can be controlled from users' phones, relaying information on air quality and its own functioning. It also provides insights into data such as devices' usage and pollution levels throughout the day.

New!

Eastern Peak is a software provider that provides internet of things software and support in Europe. It is based in Israel and helps companies manage enabled products and development.

Eaton Corp. is a power management company that develops products and systems to manage electrical, hydraulic and mechanical power. These include vehicle automation, aerospace actuators, connectivity and more.

Eddie Stobart Logistics is a logistics and warehousing provider that offers transportation services via its fleet of trucks and trailers. The company's customers include operators in the manufacturing, industrial, eCommerce and retail sectors.

eFishery is an automatic fish feeder for all types of fish. Users can access the tool's data feed anytime, anywhere, and is designed to eliminate the problem of over-feeding, fish feeding or feed irregularly diverted.

Emerson Automation Solutions develops components and software for automation equipment manufacturers.

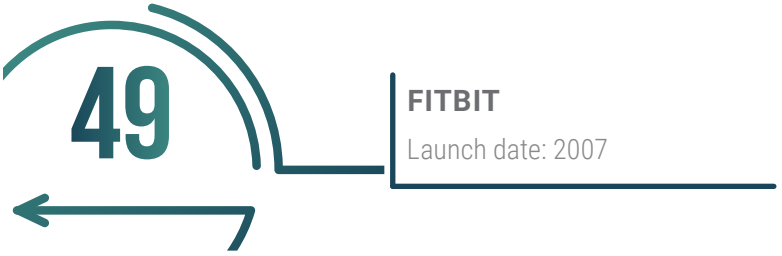
Ecobee is a smart thermostat enabling users to control their homes' temperature using smartphones, computers, tablets or via voice recognition. The Ecobee device also comes with sensors that recognize rooms' hot and cold spots and can detect occupancy.

Eggplant Technologies is the developer behind "Move It," a smart, mobile-connected personal gym. The equipment is composed of a smart handle that is interchangeable with four types of training devices and is capable of detecting 16 different types of exercise. The company provides a mobile app that synchronizes with the equipment and allows users to interact with other people to find workout buddies or challenge friends.

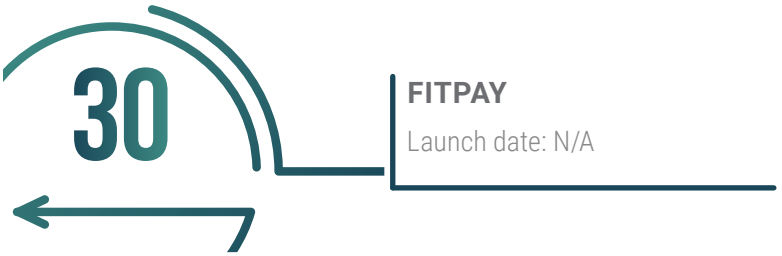
Enlighted manufactures light control platforms for smart buildings, providing sensor technology and data analytics systems for energy savings, space utilization, security and more. Its smart sensor can monitor real-time occupancy, light levels, temperatures and energy usage, among other things. The solution has been designed for commercial office, education and health care spaces.

Epson is a manufacturer of printers, projectors, scanners, professional imaging, system devices and factory automation products. The company also offers wearable devices such as smart glasses or fitness trackers, point-of-sale products, cameras, home entertainment devices and more.

The Fuji Automatic Numerical Control (FANUC) Corporation supplies factory automation products like lasers, molding machines, precision cutters and robots.



Fitbit develops a range of different wearable bracelets that can track activity. The Fitbit app can track daily activity and sleep quality, record exercise routine stats and help users organize workouts. The app also adds different features of social engagement and helps with nutrition care by allowing for food logging or weight tracking with a Fitbit-connected scale, Aria. The information is displayed on users' phones, as well as the bracelets themselves, which can also receive and display phone data such as calendar entries or calls.



FitPay is a proprietary technology platform providing contactless payment capabilities for wearables and internet of things devices.

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FIVE ELEMENTS ROBOTICS

Launch date: N/A

Five Elements Robotics is a technology company focused on the development of personal and consumer robots. The firm is behind DASH, a retail robotic shopping cart that allows users to import their shopping lists from their phones and gathers data to offer targeted marketing.

48

FLEETSPACETECHNOLOGIES

Launch date: N/A

Fleet Space Technologies designs, builds and launches a network of nanosatellites to provide global connectivity to the internet of things, serving the mining, oil and gas resources, precision agriculture, transport and logistics sectors.

21

FOOBOT

Launch date: 2013

Foobot is an air quality-monitoring system enabling users to control indoor air pollution. The company's app offers indoor air metrics, outdoor pollution levels at users' locations and home automation features.

ForeScout Technologies Inc. is an internet of things security technology developer whose solutions can determine which devices are connected to the network without requiring endpoint agents, allowing it also to detect nontraditional internet of things devices. The company's solutions integrate with more than 70 network, mobility, information technology and security products, allowing for information sharing and operation synchronization.

Friendly Technologies is a platform provider offering solutions for smart home, internet of things, TR-069, LWM2M, MQTT and OMA-DM device management, and its software is designed for service providers and those participating in internet of things utilities, transportation and smart cities markets.

Frontpoint Security Solutions installs, monitors and maintains security technology offerings, including home security systems that can be controlled remotely with an app.

Implementers Scorecard – Suppliers are listed in alphabetical order.

Fujitsu is an information and communication technology company offering internet of things platforms ranging from enterprise wearable devices and middleware applications to standardized business solutions for customer verticals. Its internet of things platforms provide data aggregation and management as well as application development services and device management capabilities. The firm also builds electronic devices and hardware products.

Garmin manufactures and designs products for the automotive, aviation, marine, outdoor and fitness markets that are capable of running GPS technology. Other products sold by the company include smartwatches, cameras and sensors, and it has developed applications that enable users to manage and control their devices.

Gehring manufacturers machines for honing metal, and uses industrial internet of things (IIoT) technology to enable customers to view live, real-time data on machine performances before placing orders.

Gemalto designs and manufactures digital security solutions. The company's IoT solutions are mostly aimed to provide reliable connectivity, reliable security and agile monetization frameworks. Gemalto´s M2M portfolio is enabling solutions in industries ranging from health care, retail services, smart energy, transportation, logistics and automotive. Besides, their consumer electronics portfolio includes solutions for smartphones, tablets, PC and wearables.

Harley-Davidson is an American motorcycle manufacturer. Its offerings include heavyweight motorcycles, motorcycle parts, accessories and other related services.

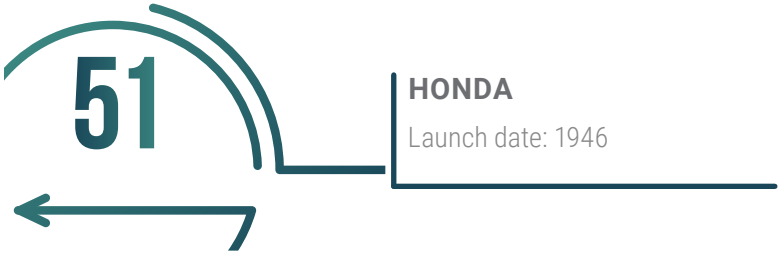
IoT WoRKS HCL Technologies enables organizations to develop internet of things ecosystems that enhance their connections of things, data and processes. The company's solutions are designed to help businesses enhance communications between devices and the cloud, and it also offers a data analytics platform that allows secure data ingestion, management and syndication.

Helium Smart Sensors are deployable in minutes and built to monitor and analyze various conditions. The company offers two main wireless smart sensors: the Helium Blue, which measures internal refrigerator temperature and door state, and the Helium Green, which measures multiple environmental parameters. The company also offers a cloud-based control and storage center for the entire distributed smart sensing system.

Enterprise software and technology provider Hewlett Packard Enterprise offers internet of things management, data organization and additional solutions for the information technology space.

Hiku offers kitchen devices that scan barcodes and recognize voices to add products to shopping lists. Consumers can use them for shopping in-store and online, add planned updates to receive price comparisons and share shopping lists with others.

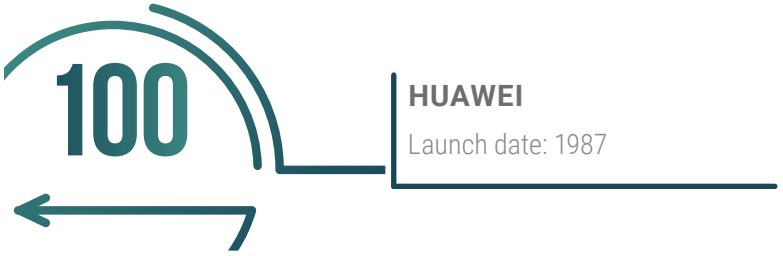
Hitachi Insight Group is the arm of the Japanese technology firm that focuses on the internet of things, providing its own IoT platform called Lumada. In addition, it develops internet of things solutions for smart cities and energy efficiency, as well as industries like health care, automotive and construction.



Though primarily known as a manufacturer of automobiles, motorcycles and power equipment, Honda is also focused on connecting its cars with solutions like HondaLink, an audio display system powered by users' phones to access online content.

Honeywell manufactures wireless and scanning technologies used in building, home and industrial applications. The company's solutions are designed to deliver energy efficiency, security and safety, and it also offers software and applications that allow users to control its devices.

HotSchedules develops employee scheduling and labor management solutions for the restaurant industry. In 2015, the company introduced its IoT platform, which allows users to capture data, transform it into insights and deploy their own apps, letting restaurants connect things like kitchen appliances, payment devices and drive-through displays into the same platform, gathering data in a single place and allowing for more complete information.



Huawei Technologies is a telecom solutions provider that offers infrastructure application software, telecommunications networks and devices with wireline, wireless and IP technologies. The company has developed a wide range of internet of things devices including phones,personal computers, tablets, wearables, audio devices and Wi-Fi routers for smart homes.

Huami is a Chinese wearable device manufacturer that produces fitness trackers and smartwatches. Its products include the Amazfit and Xiaomi wearables.

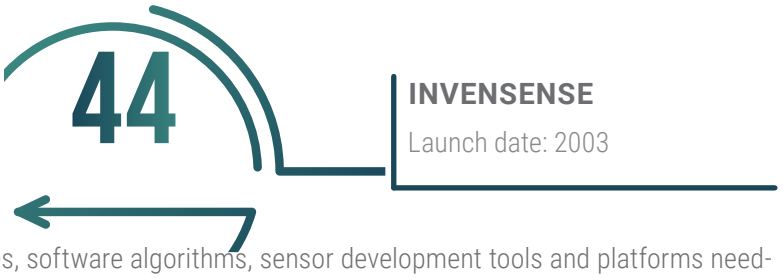
Humavox has developed ETERNA, a wireless charging technology that enables users to recharge their electronic devices from nearly any container in which they instinctively place their devices. The company offers solutions for charging headphones, fitness trackers, smart rings, watches and clothing.

Korean automobile manufacturer Hyundai's BlueLink service allows drivers to access a group of different features, from safety tools like automatic collision notification and monthly vehicle health reports to external control features like remote start and stolen car location. BlueLink also provides a destination search solution powered by Google and can connect with Apple Watch and Android Wear.

IHT Spirit System developed an assessment platform focused on physical education, and its internet of things software solutions allow teachers to access the data of every student and test their performance.

Infiswift is an internet of things-enabled platform designed to connect and manage devices and cloud services, offering multilayer security for enterprises, real-time device monitoring and data processing and analysis.

Ingersoll Rand is experimenting with the internet of things for consumer air quality projects as well as for the transportation of perishables like fresh produce or dairy.



InvenSense provides MEMS inertial sensors, microphones, software algorithms, sensor development tools and platforms needed for the product creation and sensor integration of internet of things-connected devices. Its technology is designed for multiple products including smartphones and tablets, automotive devices, wearables, drones and smart remotes for smart TVs.

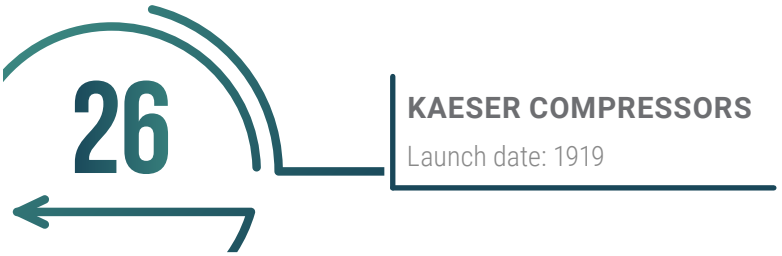
France-based telecommunications company Invoxia offers clients internet of things products like GPS trackers for personal belongings and connected devices.

JD.com provides fulfillment and warehousing services across China, and its JD Logistics business group offers smart supply chain and logistics features to businesses. Its projects include a fully automated warehouse, drone and robot delivery services, an artifically intelligent smart store and more.

John Deere provides a variety of equipment, including self-driving tractors, as well as telematics technology for predictive maintenance applications.

Johnson Controls International develops smart buildings, energy solutions, infrastructure and transportation systems, offerings products like energy efficiency, building management and automation solutions. In addition, its Smart Equipment line offers embedded controls and secure connectivity.

June is an electronics company and the creator of smart home appliances like the June Intelligent Oven, which uses internet of things technology to enable in-home precision cooking.



Kaeser Compressors manufacturers air pumps and compressed air dryers and filters with digital communications integrated into the products. It also uses sensors in air compressors, enabling the devices to track air usage to sell "air as a service." The company also offers "digital twins" for its products and supports predictive maintenance.

Karamba develops security solutions for connected cars, offering endpoint security for the externally connected electronic control units of the vehicles that allows only explicitly permitted code to run through them. Karamba also provides early detection of droppers and malware protection services.

Keen Home develops home automation hardware and software products. The company's Smart Vent System enables users to control heating and cooling airflows room by room, and it also connects to the web and other components, giving users the ability to manage all functionalities from the Keen Home app.

Kepware is PTC's software development business working to provide a portfolio of software solutions that help businesses connect automation devices and software applications and enable industrial internet of things.

KONUX

Launch date: 2014

Konux provides the industrial internet of things market with smart sensor systems designed to measure mechanical and geometric parameters such as torque, pressure, force and angle. Konux sensing technologies are combined with a cloud solution that provides customers with real-time data visualization and intelligent data analysis, enabling them to understand their machine problems and make maintenance predictable.

KOMATSU

Launch date: 1921

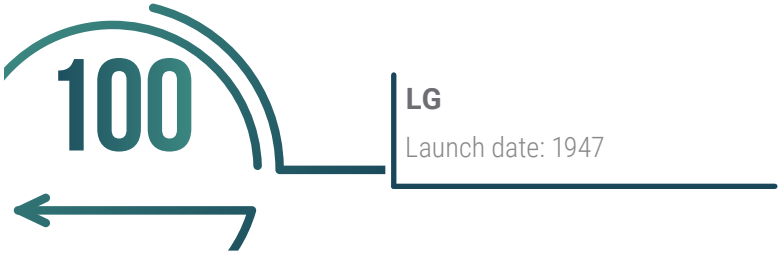
Komatsu is a heavy equipment maker that uses connected technology in its Japanese production facilities, enabling it to remotely monitor operations in real time. The company has acquired United States mining equipment maker Joy Global, which provides connected longwall shearers for coal mining that can wirelessly transmit 7,000 data points per second to its data center.

KUKA

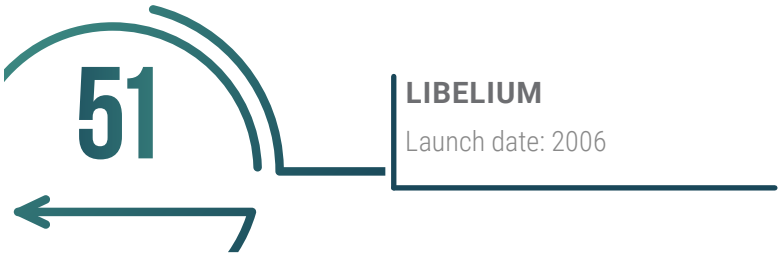
Launch date: 1898

KUKA provides robotics and other automation and internet of things solutions, including those that can extend to entire factories. One use case includes helping Jeep build an IoT-enabled factory for quickly producing car bodies using robots linked to a private cloud.

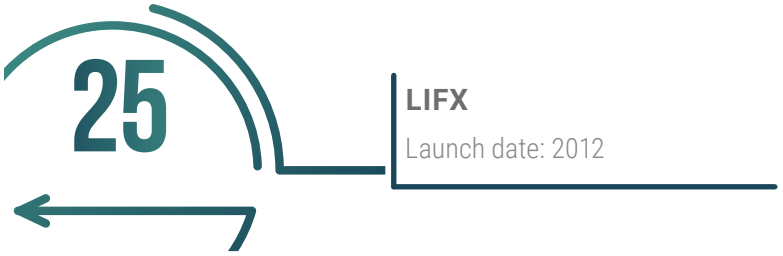
Lenovo develops, manufactures and markets technology products and services, offering commercial and consumer personal computers, as well as servers and workstations; mobile Internet devices, including tablets and smart phones; storage and networking products; memory and processors; rack and power infrastructure; and laptops, desktops and accessories, as well as operating systems, security and systems management software.



LG Corp. delivers connected products that go from smartphones, tablets and smartwatches to TVs and home audio devices. The company also works with affiliated companies in telecommunication services such as: LG N-sys, LG CNS and LG U.



Libelium designs and manufactures wireless sensors for smart cities and the internet of things.



LIFX is a WiFi-enabled LED system allowing users to control their home or office lights with enabled devices such as smartphones, wearables or other smart home products. The multicolored smart light comes with an app offering features like a music visualizer, themes, scenes and schedules.

LimeBike is a dockless bicycle sharing company whose app enables users to locate bikes and scan to unlock them.

Local Motors is a technology company that works on the development of vehicles. Its products include a 3D-printed car and its autonomous electric shuttle, Olli, which uses sensors and data to understand its environment and can help in corporate or municipal transportation needs. The shuttle can also work like a taxi with the user determining a pickup location through the app for later traveling and paying within said app.

LofeIt develops "The Basslet," a wearable watch-size subwoofer. The device delivers beats and basslines directly into the users' bodies, working next to senders that can be connected into devices like smartphones, gaming consoles or VR headsets.

Digital products provider Logitech has developed a range of internet of things solutions mainly focused on smart homes. The company's portfolio includes several products that allow users to remotely control their connected devices and manage their homes' lighting, music, locks, thermostats and more.

LogMeIn provides software as a service and cloud-based remote connectivity services for collaboration, information technology management and customer engagement.

Lumo develops body tracking technology, including clips that attach to running shorts or capris to measure cadence and speed, giving the runner instant feedback through earphones. Lumo also offers clip-on devices that monitor posture.

Lutron offers a family of internet of things devices including lights, shades and temperature controls for rooms or entire houses The tools can also adjust automatically to prevent excessive energy consumption.

Maersk provides shipping services solutions to small and large businesses in 130 countries and employs roughly 70,000 people. It provides frequent departures on all major trade lanes as well as inland services and mobile cargo tracking.

Austrian automotive manufacturer Magna Steyr uses smart factory capabilities to track assets ranging from tools to vehicle parts and automatically orders replenishments when necessary. Magna is also testing usage of Bluetooth-connected "smart packaging" to track components in its warehouses.

Marvell is a fabless semiconductor company with experience in microprocessor architecture and digital signal processing. It develops platforms for storage solutions as well as wireless and networking products between others.

Mastercard is a technology company developing solutions for the payments industry, with payment processing as its core business. The company develops different payment products, including the use of near-field communication technology, eCommerce applications and security products, and it is also engaged in the development of internet of things technology usage into payment applications.

MATTERNET

Matternet is an autonomous drone logistics platform developer with its own drone, cloud and usage stations. The company provides aerial delivery transport for healthcare, eCommerce and logistics organizations, along with serving individual customers. The platform is designed to be used in densely populated urban areas that often present delivery challenges.

Microsoft develops a broad range of software products, from Windows to Skype and from Bing to Office. The company also develops devices like Lumia and Xbox, as well as the Azure IoT Suite, a platform that allows the user to connect and scale projects, as well as analyze the data generated by them.

Misfit manufactures wearable and smart home devices and offers smartwatches, fitness trackers and smart accessories. Misfit also offers internet of things-based applications such as the Misfit Link, Home and Cycling apps, which help users better manage wearables from their smartphones.

MOCANA

Launch date: 2002

Mocana's internet of things security platform helps companies secure and monitor their devices and gateways in a complex, multi-vendor environment. The device-to-cloud platform functions as a real-time operating system for wired and wireless networking settings.

MOEN

Launch date: 1956

Moen has developed a customizable shower with personal device integration enabling users to control time and temperature. Once the U by Moen shower is connected to Wi-Fi and the cloud, users can control their showers via their smartphones, Alexa or the shower controller.

MONNIT

Launch date: 2010

Monnit manufactures and markets self-installing, low-cost wireless sensor solutions targeted at the commercial, industrial and consumer markets. Monnit's sensing solutions can be used to monitor access, presence of water, luminosity, temperature, humidity and a variety of other metrics.

MOOV

Launch date: 2013

Moov is a water- and dust-proof connected wristband designed for sports, including cycling, swimming and boxing. The wearable device can also be used in coach mode, allowing for a voice-guided workout and different metrics, such as amount of repetitions or landing impact. The device can also track 3D movements, allowing it to teach the user more effective exercise techniques, and permits for social engagement and competition with connected friends.

N'OSAIRIS

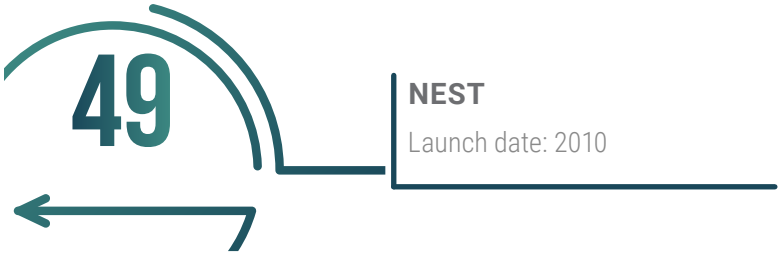
Launch date: 2009

Nosairis is a software firm that focuses on IoT to drive business transformation and delivering connected services.

NESTLÉ NESPRESSO

Launch date: 1986

Coffee machines and capsules provider Nespresso has developed a connected coffee machine, the Nespresso Prodigio. It's a Bluetooth-connected coffee machine which enables users to manage capsules stock, program coffee times and receive alerts for machine maintenance and care through the smartphone-enabled Nespresso app.

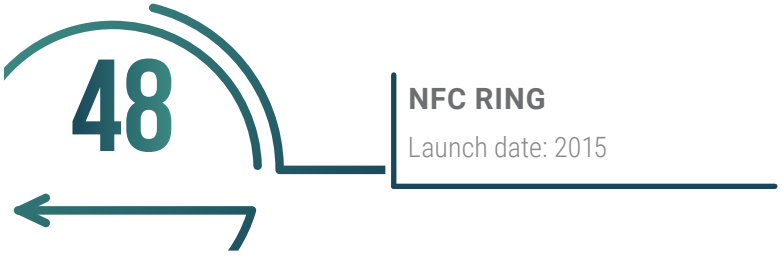


Nest is a technology company focused on smart home tools, and its products include a thermostat that learns from user preferences, a smart smoke-CO2 alarm and a camera that tracks the user's phone location to know when to activate. The company's devices can communicate with users' products through the Nest app to either provide information or be externally controlled.

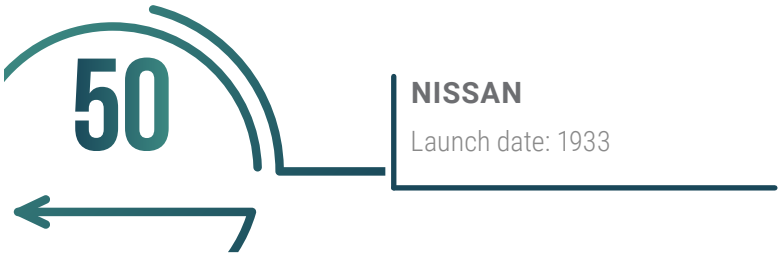
Netatmo is a smart home company, developing connected consumer electronics. Netatmo designs the mechanics, electronics and embedded software of all its products and also creates the mobile and web applications.

Neurio is a home intelligence technology company that gives homeowners the ability to monitor their homes. The company's Home Energy Monitor allows them to track their power use in real time, see bill forecasts, set up budgets, get energy saving tips and more.

Since spinning off from ETH Zürich, Nexiot has provided integrated digital supply chain solutions across Europe.



NFC Ring provides a wearable ring that can be used to make payments, lock or unlock doors and devices or share and transfer information.



Japanese automaker Nissan offers embedded internet of things technologies in its cars through a service called NissanConnect, allowing drivers to access features including access to different apps such as Google and Facebook as well as security tools like stolen vehicle locating and roadside assistance. The solution can also control car functions like locking doors, triggering horns and controlling the air conditioning.

NOKIA

Launch date: 1865

Nokia is a Finnish multinational communications corporation engaged in the manufacturing of mobile devices, network infrastructure and location-based technologies. It is also engaged in converging internet and communications industries.

NORTH STAR BLUESCOPE STEEL

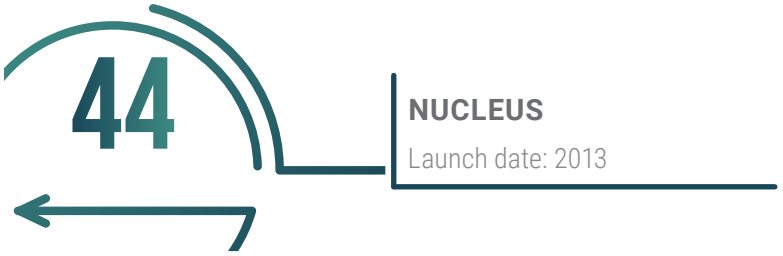
Launch date: 2009

Steelmaker North Star BlueScope Steel deploys wearables in helmets and wristbands as part of its proof-of-concept project aimed at helping managers track employee safety and spot hazardous scenarios before they lead to injuries.

NOTION

Launch date: 2013

Notion develops sensors that allow homeowners to remotely monitor their homes, using the device to track a group of variables, such as when doors are open, the temperature fluctuates too much or when water leaks. Users can also monitor their homes from their phones and receive notifications.



Nucleus is a smart home wireless intercom system designed to allow users to make calls from room to room or home to home. Each Nucleus account has a unique Home and Remote code enabling them to establish secure connections between devices. The Nucleus device connects to the internet via Wi-Fi or Ethernet and is Amazon Alexa-enabled.

Numerex provides a portfolio of managed end-to-end internet of things solutions including smart devices, network connectivity and service applications to address various vertical market needs, including waste management, manufacturing and distribution, public and personal safety, oil and gas, transportation, emergency management and commercial and residential security.

Nuzzle has developed a GPS collar that enables owners track their dogs via 24/7 connectivity through dual-band 3G cell, embedded SIM card and Bluetooth. In addition, the GPS collar offers impact detection, and temperature and activity monitoring. Owners can also use a mobile app to track their pets.

Omnitracs LLC is a trucking solutions provider offering transportation technology and insights, with solutions designed to assist with compliance, safety and security, productivity, telematics and tracking, transportation management, planning and delivery, data and analytics and professional services.

OnePlus is a manufacturer of waste container fullness and control systems. It also produces technology that can regulate system access and provide users with a cloud-based software through which they can access information.

Optimal+ is a data analytics company offering end-to-end solutions to improve quality, yield and productivity for semiconductor and electronics manufacturing.

OSRAM

Launch date: 1919

Osram implements high-tech devices and smart solutions for lighting technology in the automotive, entertainment and health sectors as well as private consumers. The company also offers smart home products and is developing smart city solutions.

OSSIA

Launch date: 2008

Ossia is the developer of Cota, a wireless power charger that can power equipped devices. The solution takes energy from a single source and transmits it through a net of antennas to a power receiver within a 30- foot radius. The solution also allows for energy saving, as the system turns off once the devices are off the range or hibernating.

PETNET

Launch date: 2012

Petnet offers the SmartFeeder, an automatic feeder for cats and dogs that enables users to manage feeding times, portion sizes and food supply. The SmartFeeder uses sensors to measure portions based on pets' ages, weights and activity levels. Users can control their pets' feeding from their smartphones.

PetPace™
Monitoring your pet's health

PETPACE
Launch date: 2012

PetPace offers remote pet monitoring services through a wireless smart collar that collects pets' vital signs and behavior patterns. PetPace comes with an integrated health monitoring service to continually analyze the collected health data and send notifications to pet owners' smartphones in case of emergencies.

PHILIPS

PHILIPS
Launch date: 1891

Philips´ internet of things-enabled lighting product, Hue Personal Wireless Lighting, is a connected lighting solution that can be managed from users' smart devices. Hue uses a system called The Bridge that connects smartphones to the Philips Hue lights via Wi-Fi, offering different types of smart lights and giving users the ability to create timers, control brightness, play with colors and synchronize lights to music, TV and games.

placemeter

PLACEMETER
Launch date: 2012

Placemeter creates real-time smart sensors and computer vision integrations for industries like transportation and real estate. Its mission is to aid in building out smarter, technologically enhanced cities.

Polar is a manufacturer of sports training technologies. Among other products, Polar has deployed GPS-enabled bike computers, fitness and running watches, as well as heart rate monitors and performance trackers. Its devices are designed for activities ranging from swimming, cross-training and yoga to tracking users' daily activities and calorie consumption.

Rachio develops a smart sprinkler device that uses weather prediction to ensure more efficient water usage. Its devices can adjust their functioning to suit the yards in which they work or changing seasonal conditions. It connects to a mobile app that allows for the external control of speakers and delivers information about precipitation, watering and yard health.

Ray has developed a smart touch-screen remote that enables users to control all their devices and supports a wide range of entertainment devices including TVs, cable and satellite providers, streaming devices, sound bars and DVD players.

RTI works with partners to create technology to divide power grids into microgrid arrays that can each be managed independently to help companies better maintain complicated energy networks that pull from both traditional and renewable origins.

Red Hat has a portfolio of secure products and services such as cloud storage and operating system platforms along with middleware, applications and management solutions. It also provides customer support, training, implementation and consulting services.

Rio Tinto is a global mining and exploration company active in more than 40 countries. It discovers, mines, processes and supplies metals and minerals used in everyday modern life, and uses driverless trucks, autonomous drilling tools and other Internet of Things supports.

29

ROCKWELL AUTOMATION

Launch date: 1903

Rockwell Automation develops industrial automation and information technology products. Its Connected Enterprise capability enables industries to connect, monitor and optimize devices and processes while its industrial internet of things solution integrates networks and creates a production platform that can enable smart manufacturing.

63

ROLLS-ROYCE

Launch date: 1906

Manufacturer Rolls-Royce is using internet of things-enabled sensors that allow jet engines to send data directly to air traffic control, granting a more holistic look at weather patterns and aircrafts' fuel conditions.

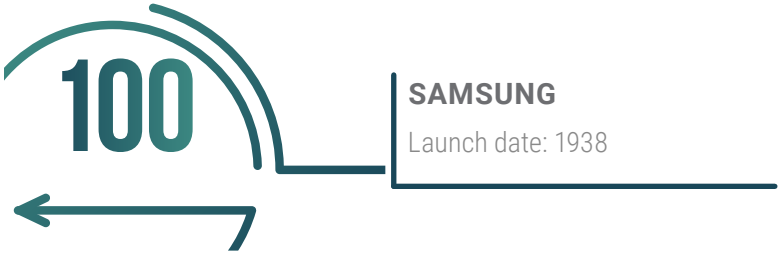
45

SAGEGLASS

Launch date: N/A

SageGlass offers electronically tintable glass — known as dynamic or eletrochromic glass — for windows, skylights and curtain walls, controlling sunlight levels while eliminating the need for shades or blinds.

Samsara offers internet-connected sensor systems designed for diverse environments from energy monitoring to asset utilization to vehicle tracking. Its traditional sensor model is combined with an integrated, software-centric solution to capture hundreds of metrics, bringing visibility and insight into any operation.



Samsung's business expands through many industries, from heavy industry to chemical to its more well-known face, Samsung Electronics. The company develops wearable devices, smart TVs and some of the most classic connected devices: smartphones. Samsung has also begun developing smart home applications, from sensors and hubs to connected appliances.

SATO Global Solutions develops internet of things solutions, including data-based advice for business operations and customer experience improvements. The company co-founded the Acuitas Digital Alliance, which develops cloud-based IoT solutions to help retailers use Big Data and the internet of things

SEAT (or Sociedad Española de Automóviles de Turísmo) is an automobile manufacturer and subsidiary of the Volkswagen Group headquartered in Martorell, Spain. SEAT has been researching connected car developments with companies such as SAP and Samsung for solutions like parking reservations and payments, as well as digital key sharing.

SectorQube's smart oven, Maid, sets the times and temperatures according to serving numbers and users' personal preferences. Maid comes with an intelligent personalization engine that learns user preferences and is connected to an online recipe store. The oven can be controlled and managed through touchscreens or through voices and gestures.

Seebo offers an integrated platform intended to help manufacturers create, develop, analyze, integrate and build internet of things products.

Sensoria develops wearables that track and communicate data like body weight, eversion and in-footwear pressure. The data is analyzed and displayed in users' mobile devices.

Sentri is an all-in-one home controlling solution helping users make their homes safer and smarter. Its device comes with a 120-degree wide-angle camera and sensors that track environmental health including temperature, humidity, air quality and weather. Users can connect and control other smart devices and get mobile notifications when any unusual activity or change in the home environment is detected.

Gas company Shell is implementing the internet of things for more efficient fuel production, claiming that its smart oil fields can generate up to 10 percent more oil and 5 percent more gas than traditional fields. It has also launched other internet of things-related projects to help with this goal.

Implementers Scorecard – Suppliers are listed in alphabetical order.

SIMPLISAFE

Launch date: 2006

SimpliSafe Home Security helps clients secure their homes via wireless, internet of things-enabled alarm systems.

SKYBELL

Launch date: 2013

Based in Irvine, California, SkyBell is an internet of things security solutions firm using Wi-Fi and sensors to provide a smart video doorbell. The offering pairs with a smartphone app available for iOS and Android that allows users to interact with visitors.

SKYHOOK

Launch date: 2003

Skyhook is a global location network that, by georeferencing mobile users, allows companies to deliver more personalized content. The company's location engine is based on Wi-Fi data that is combined with information from GPS, cell towers, IP addresses and device sensors, and its services are suitable for different industries, including app development, advertising, device manufacturing and wearable design.

SMARTDRIVE

Launch date: N/A

SmartDrive offers solutions for corporate fleets. Its offerings include security programs, an open analytics platform, and transportation intelligence intended to improve safety and identify opportunities for greater operational efficiency.

SOFTBANK

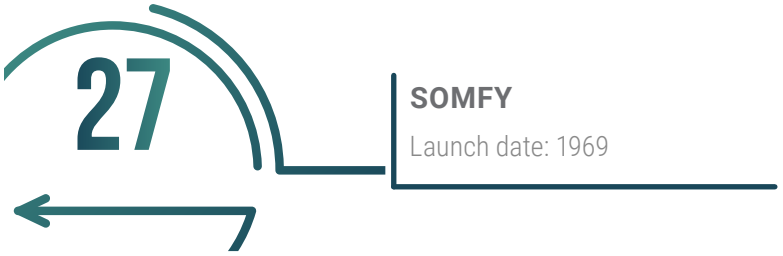
Launch date: 1981

SoftBank is a multinational telecommunications and internet corporation focused on broadband, fixed-line telecommunications, eCommerce, internet, technology services, finance, media, marketing and other areas.

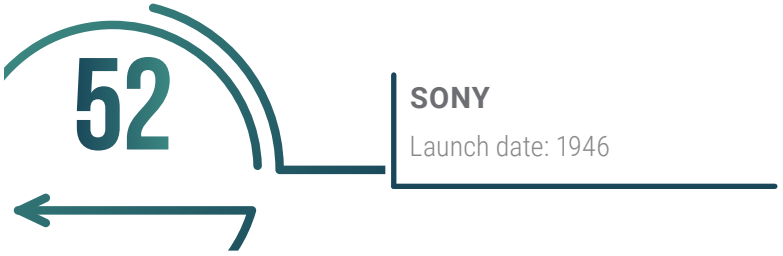
SOFTWARE AG

Launch date: 1969

Software AG is a software developer whose solutions apply to a range of different industries, including internet of things, banking, energy, government and retail. The company's solutions include Terracota, a data management platform, location-based marketing capabilities, location analytics and manufacturing products such as equipment predictive maintenance, and energy theft detection.



Somfy offers outdoor home products like smart gates, doors, window shutters and alarm systems that can be managed from a mobile app.



Sony Corp. products range from categories such as television and audio/video solutions to semiconductors, medical equipment and digital imaging developments. The Japanese company has introduced internet of things technology in mobile and tablet devices as well as smart TVs and wearable products like watches or wristbands.

Sophos provides internet of things security services that work to protect devices, data and key processes from malicious malware code and dangerous cyberactivity. Among other services, the company offers endpoint, encryption, email, web, mobile, network security and UTM products, as well as a range of tools for home users.

SPIN

Spin is a dockless electric scooter rental company that is currently operating in 11 cities and on six campuses.

Stanley Black & Decker

Industrial and household tool provider Stanley Black & Decker has created internet of things-connected tools for its manufacturing facilities and deployed connected security technologies.

STATSports®

STATSports provides sports science and performance analytics. Its performance tracking systems can calculate more than 50 metrics in real time and store all data into a cloud infrastructure. The STATSports Apex tracking device connects via Bluetooth LE to multiple devices, including heart rate sensors, EMG shorts, smart watches and tablet devices.

23

STRIIM

Launch date: 2012

Striim is a real-time data integration and streaming analytics software platform, integrating internet of things data to provide data analytics and protect users against cybersecurity threats. Striim for internet of things combines real-time sensor data with other enterprise data from databases, log files, message queues and cloud environments.

25

SWATCH

Launch date: 1983

Swatch produces smart watches and other wearables. The company's Touch Zero One smartwatch was specially designed for beach volleyball players and gives users the ability to calculate steps, track calories burned, set goals and check progress. Users can also connect Swatch devices to their smartphones and use an application to check performance insights.

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SYMANTEC CORPORATION

Launch date: 1982

Symantec Corp. provides cybersecurity services through its anti-virus software Norton. It also offers integrated solutions to defend against attacks across endpoints, cloud and infrastructure. The company has also developed a router to which internet of things-enabled devices can securely connect in a single action.

Tag Heuer´s Connected Modular 45 smartwatch collection, done in collaboration with Google and Intel, offers customized designs, GPS, time management tools and water resistance. The device is also connected to a mobile app.

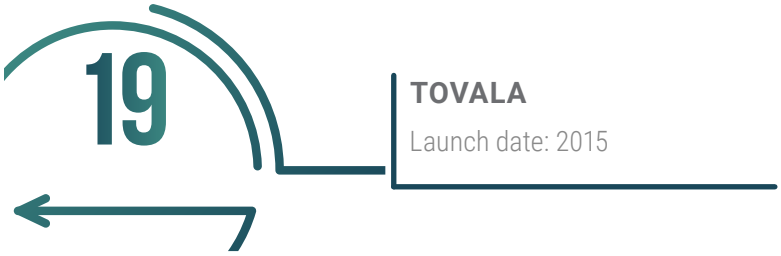
Teletrac Navman offers GPS-based fleet management and optimization products and services, including real-time vehicle tracking, electronic logging, communications and analytics designed to enable companies to monitor, measure and improve operational costs and efficiencies.

Teradata develops a range of solutions that apply to the internet of things industry, with options like Teradata Unified Data Architecture, which allows businesses to organize and leverage data, or Teradata Aster Analytics, which allows for data visualization and analytics.

Tile provides devices, a network and mobile app that use Bluetooth technology to assist users in locating keys, wallets, phones and other items.

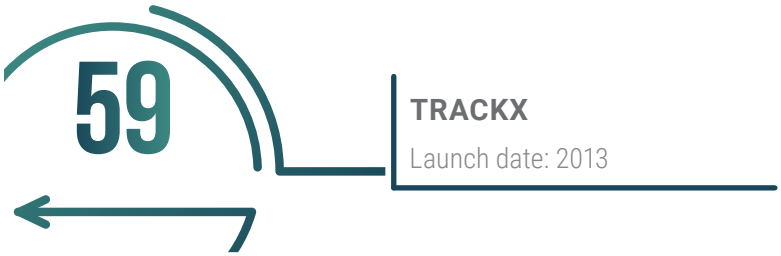
Token offers a biometric-based wearable ring designed to make payments and provide authentication in place of ID credentials, internet passwords or at physical locations. Its product also can be used with specialized company-made locks to unlock home or compatible car doors.

TomTom designs and develops navigation and mapping products for cars, motorcycles, scooters and trucks and provides fleet management solutions. The company also offers GPS smartwatches and accessories for running, fitness, golf and other activities.



Tovala has designed a smart oven that can steam, bake, broil and heat prepackaged meals that come with scannable codes to indicate how they should be cooked. The oven can also connect to users' phones through its own app, which allows for tracking of the cooking time.

Japanese car manufacturer Toyota has integrated internet of things technology into its automobiles. Entune, the service the company developed for connecting mobile devices with cars, allows drivers to access their playlists or use voice recognition commands. Toyota also delivers security-connected solutions that can assist in cases of collisions, needing emergency assistance or locating stolen vehicles.



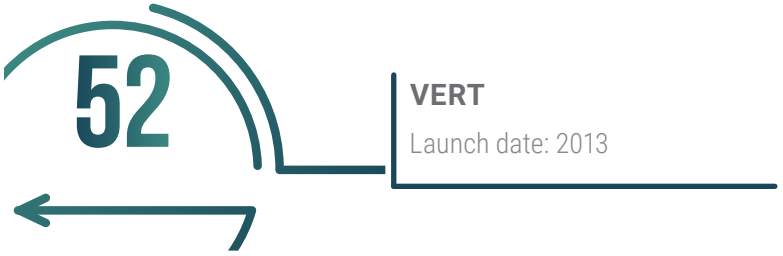
TrackX is a software solutions provider focused on asset tracking, inventory management and supply chain solutions, all using a cloud-based asset tracking platform, GPS, RFID and sensors.

TritonWear develops wearables that allow coaches and their athletes to track performance through their mobile devices in real time.

Trustonic is a device security company that provides security for connected devices, associated services and applications.

Ubigreen is a technology company that develops turnkey solutions with offerings that include web apps to monitor and control energy use or other operations in a building or other site.

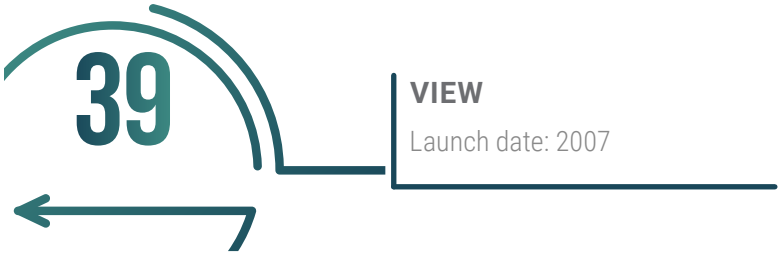
Under Armour products include apparel developed for controlling body heat, and intelligent items concentrated on tracking users' performances The company's interest in internet of things applications pushed the acquisitions of fitness apps such as MapMyFitness and MyFitnessPal.



VERT offers wearable solutions that utilize the cloud and internet of things technology to connect user data to social platforms.

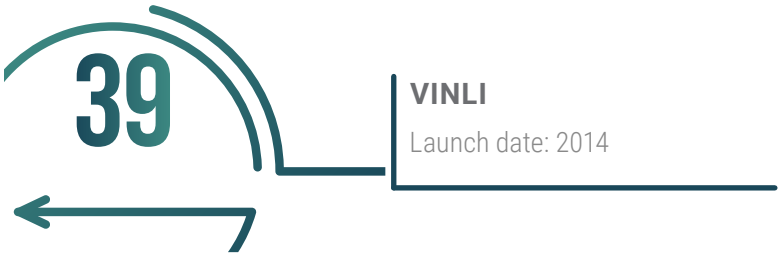
New!

Very was founded in 2011 and helps companies with product development and software design inside of the internet of things. The company will create bespoke software solutions for clients to help integrate the internet of things into their offerings.

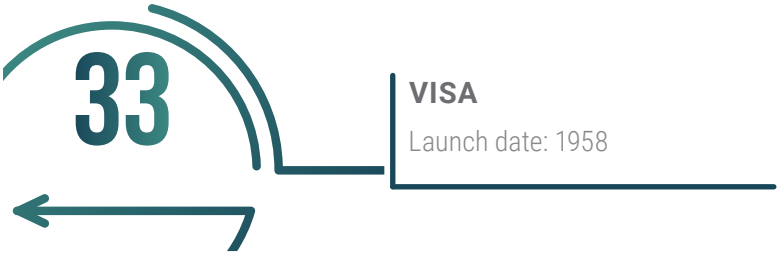


View Dynamic Glass' window tint tech helps to control the temperature inside rooms to save energy and improve comfort. The device can automatically adjust to the time of the day, the angle of the sun and weather conditions, taking into account the geolocation of the building and its architectural design. The solution also provides data for users to track energy efficiency.

VIMOC Technologies is a platform provider for Landscape-Computing, enabling the deployment of solutions for the internet of things and smart city implementations. The platform is provided through a scalable API that facilitates sensory data access with built-in statistical analysis and a workloads distribution framework.



Vinli is a small device that can be connected to vehicles to boost connectivity and app usage. Using a 4G LTE network, its device can also be used as a Wi-Fi hotspot to allow passengers to stream movies or download games. The company also offers apps covering security, social engagement and other utilities, such as sending notifications if a collision occurs.



Visa is an American multinational financial services company focused on the transfer of electronic funds. Its portfolio includes Visa-branded credit, debit, commercial, prepaid, mobile and money transfer. VisaNet is the technology behind the company's payment processing solution, which provides its services worldwide.

Vivint is a smart home services provider focused on connected home automation and home security cameras and devices, all controllable by an app.

Webroot works on endpoint security and threat intelligence services, providing solutions for businesses and individuals. The company has developed its own internet of things cybersecurity tool, and also produces its BrightCloud Threat Intelligence for IoT Gateways.

WESTERN DIGITAL

Launch date: 1970

Western Digital is a data storage company using both the cloud and data center storage, providing clients with software as well as hardware like hard drives and storage devices.

WHISTLE LABS

Launch date: 2012

Whistle Labs is an intelligent device manufacturer offering pet owners smart GPS tracker offerings to monitor pets' locations, activity levels and rest cycles. The Whistle app also sends users notifications when pets leave designated "safe spaces."

WISEKEY

Launch date: 1999

WISeKey is an information security and identity management company that works on data protection and identification, and authentication of people and objects over physical infrastructures, networks and the internet. The company focuses on the internet of things industry and developed a security platform covering identity management, transaction assurance and process integration.

XIAOMI

Launch date: 2011

Xiaomi manufactures and develops hardware, software and internet services, offering a range of internet-connected devices including smartphones, TVs, notebooks, wearables, drones, earphones and more. In addition, the firm develops mobile applications such as MiTalk and an operating system called MIUI.

X LAB

Launch date: 2016

X Lab is the company behind Spendwallet, an electronic wallet that can store the users' credit, debit and gift cards. The device can also be synchronized with users' phones.

XPED LIMITED

Launch date: 2008

Xped Limited is an internet of things technology business. Among others services, the company has developed the Auto Discovery Remote Control platform, which is designed to enable users to connect, control, monitor and manage their devices and appliances from a single app.

Yokogawa's portfolio of solutions includes cloud-based data sharing services for data collaboration for supply-chain management and optimization. It also offers cybersecurity solutions.

Zebra Technologies develops tracking technology and solutions that allow companies to know where and in what conditions things are. Zebra products cover a wide range of devices and software, from mobile computers and printers to location solutions and RFID bands. Zebra's technology can also be used in different industries like health care, manufacturing and retail.

Aclara Technologies LLC provides smart infrastructure solutions for water, gas and electric utilities worldwide, including meters and various communications networks.

Actility's ThingPark is an internet of things-enabler platform for the deployment and management of low-power wide-area networks. The software solution allows communication service providers, device manufacturers and application suppliers to develop internet of things applications in vertical markets such as smart cities, energy and utilities or industries.

Advantech provides embedded machine-to-machine/internet of things module integration services and wireless solutions for machine-to-machine communication including Bluetooth, Wi-Fi, 3G/LTE and GPS modules.

Aeris Communications is a technology provider and cellular network operator delivering comprehensive internet of things/machine-to-machine services to the automotive, energy, transportation, retail and healthcare industries. Aeris offers a complete technology stack, from an online management portal to an application enablement platform and cellular connectivity networks.

Aerohive Networks, together with its subsidiaries, designs and develops cloud networking and enterprise Wi-Fi solutions. These include hardware, software-as-a-service subscriptions and tiered maintenance and support services.

Afero offers an internet of things platform-as-a-service solution that allows for the development and deployment of connected devices. The system is powered by Afero Cloud, which provides services for the development and operation of connected things. The company also helps developers with processes like monitoring, management and prototyping.

AgilityIO offers software solutions to translate ideas and products into digital and internet of things products. The company handles software development, user exchange and user interface design and product management through the process of idea conception to retail.

AGT International distributes internet of things solutions. The company focuses on integrated logistics support for public safety and security.

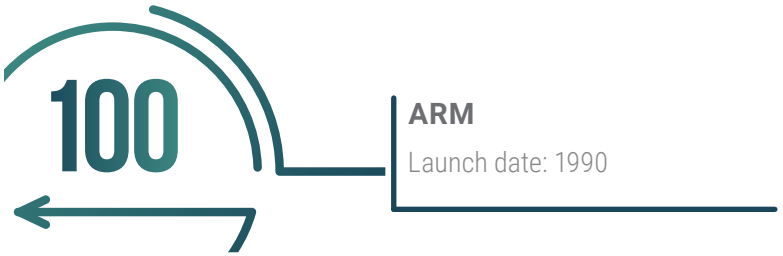
AlertMedia provides enterprise customers with monitoring services and a communications platform for regular and emergency messaging.

Altoros is a software and open-source development company providing hardware, software and guidance to clients. It uses Java, .NET and Ruby architecture to create cloud-native internet of things applications for companies, and offers smart baggage tracking software for private customers.

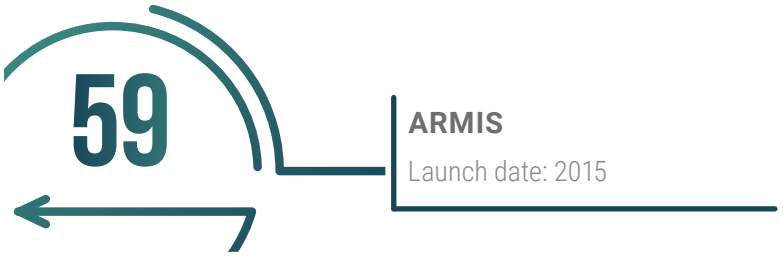
Amazon Web Services has developed a cloud-computing platform providing services such as application hosting, databases and content delivery. The company's internet of things consists of a cloud platform that allows businesses to connect devices to Amazon services as well as to other devices, secure and process data, and enable applications to interact with those devices.

Amdocs provides software and services to communications and media companies via solutions to enable digital and network transformation. The company offers a suit of internet of things solutions, including Amdocs Connected Home, a cloud-based solution delivering monitored smart home security services. In addition, Amdocs IoT Services Enablement Platform enables internet of things ecosystem players to offer integrated and easy-to-activate global consumer and industrial internet of things services.

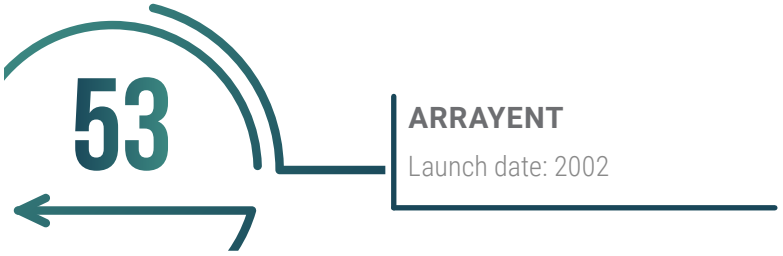
Antmicro is an embedded software company working with emerging technologies, prototyping and feasibility studies.



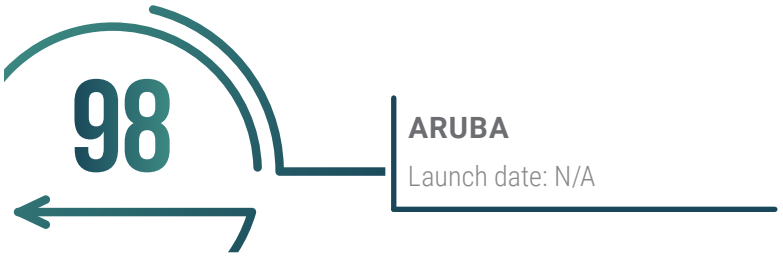
ARM designs energy-efficient processors and related technologies for digital electronic products ranging from sensors to servers. The company has developed the ARM Mbed IoT Device Platform, a solution that provides open standards based on a common platform and an ecosystem for internet of things development and connectivity to make internet of things offerings work at scale, from device to cloud.



Armis Security is an agentless internet of things security solution that allows enterprises to see and control any device or network.



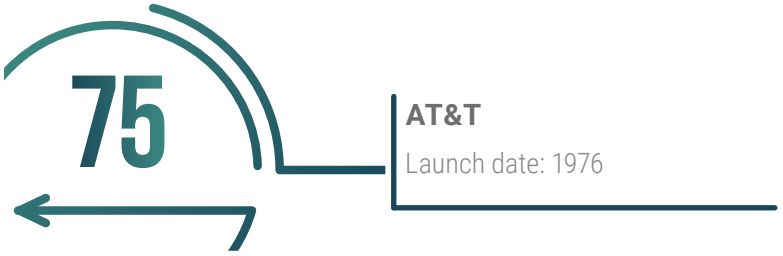
Arrayent offers an internet of things platform that enables manufacturers to transform traditional products into connected devices, offering an end-to-end solution that provides secure access to customer and product data.



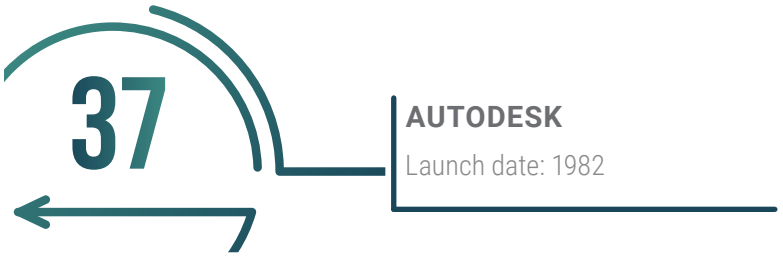
Aruba Networks develops operating systems for both wired and wireless network infrastructure, provides remote access services and offers data security solutions.

Arviem is an independent global cargo tracking and monitoring service provider. Its internet of things monitoring device mounts on cargo containers and communicates via phone or satellite networks.

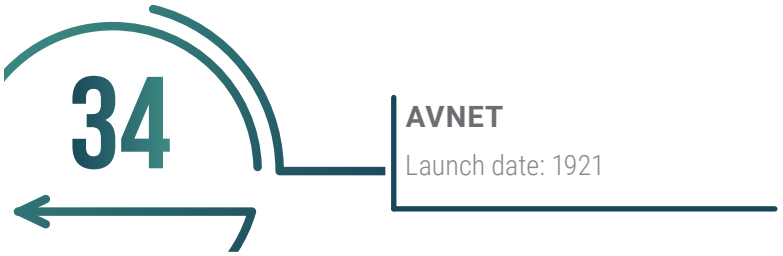
Enablers Scorecard – Suppliers are listed in alphabetical order.



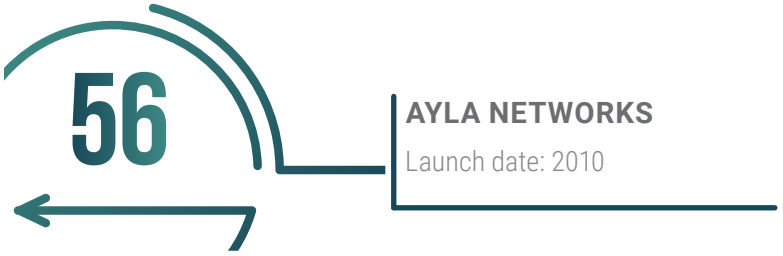
AT&T provides a wide range of internet of things solutions, including connectivity of devices and development platforms that can be applied to industries from vehicles and smart cities to health care and machinery.



Software developer Autodesk offers Fusion Connect, an internet of things cloud service that connects, analyzes and manages remote products, providing its customers analytics and insight automatically extracted from their devices, enabling them to highlight products' performances and failures.



Avnet provides organizations with internet of things component and services solutions. It helps companies in deploying internet of things technologies and adding new functionalities, such as security and connectivity. Avnet offers components for industries such as automotive, home automation, energy, industrial and wearables, among others.



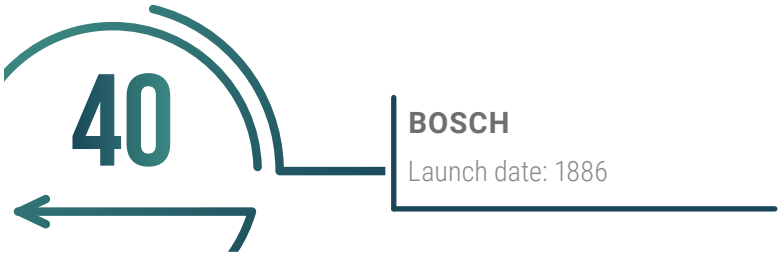
Ayla Networks is an internet of things platform provider whose solution comprises three elements: Ayla Embedded Agents, Ayla Cloud Services and Ayla Applications Libraries. These processes work together to connect to the cloud and applications while providing tools to manage, provision and analyze internet of things deployments.

Bastille offers an enterprise security solution designed to include full-spectrum scanning of corporate airspace, working to detect wireless risks and use machine learning and behavioral analytics to offer companies a more informed view of wireless environments, complementing Wi-Fi and traditional security architectures.

Belden manufactures and sells a portfolio of cable, connectivity and networking products for the transmission of signals for data, sound and video applications. Its products are designed for a variety of markets including industrial, enterprise, broadcast, transportation, energy and consumer electronics.

Belkin offers internet networking products including Ethernet and wireless adapters and routers. In addition to developing connectivity solutions, the company has created WeMo, a Wi-Fi-based home automation network that includes smart lighting systems, Wi-Fi-connected cameras, smart plugs and light switches.

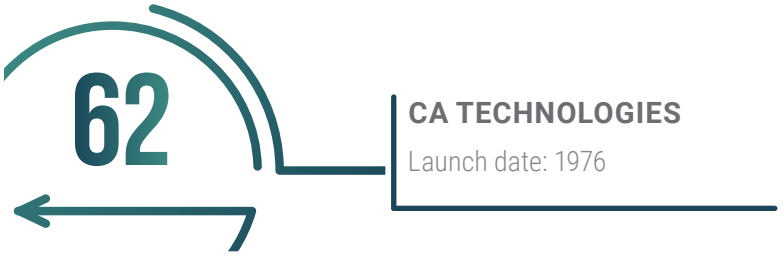
Bitreactive offers a visual programming tool enabling Java developers to program embedded software for internet of things devices. The firm serves clients in logistics, telematics, automotive, oil and gas, home automation, smart energy, smart cities and building control industries.



Robert Bosch GmbH is an engineering and technology company with four business segments: mobility, consumer goods, industrial technology and energy and building technology. Its products include well-known brands like Dremel, Dynacord and Siemens.

Enablers Scorecard – Suppliers are listed in alphabetical order.

Broadcom is a semiconductor technology provider primarily focused on wired infrastructure, wireless communications, enterprise storage and industrial markets.



CA Technologies supports companies' transitions to use smart technology and monitors, manages and secures clients' information technology infrastructure and applications.

CalAmp provides communications devices, cloud platforms and software applications. Its internet of things cloud enables companies to collect, monitor and report data and intelligence from remote assets.

Cambium Networks

67

CAMBIUM NETWORKS

Launch date: 2011

Cambium Networks is a provider of wireless broadband point-to-point and point-to-multipoint platforms, offering sustainable communication networks for companies, enterprises, governmental and military agencies, and the firm's services also include network monitoring, measurements and analytics.

CENTRI
Advanced Security for IoT

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CENTRI

Launch date: N/A

CENTRI focuses on internet of things technology designed to integrate into organizations' exiting applications and services in the cloud, data centers, connected devices and products to secure data. Its solution offers tools including encryption and the establishment of trusted devices.

CHRONICLED

36

CHRONICLED

Launch date: N/A

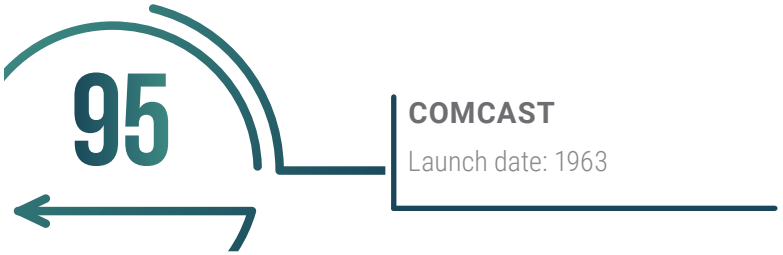
Chronicled is a technology company using blockchain and the internet of things for supply chain solutions. It offers a decentralized protocol and network, and serves the pharmaceutical, commodities and precious metal and mineral verticals.

Cisco develops internet protocol–based networking technologies. Their products include routing and switching devices, home networking technology, IP telephony, optical networking, security, storage area networking, and wireless technology. Cisco also provides technologies covering connectivity, security, software and data management.

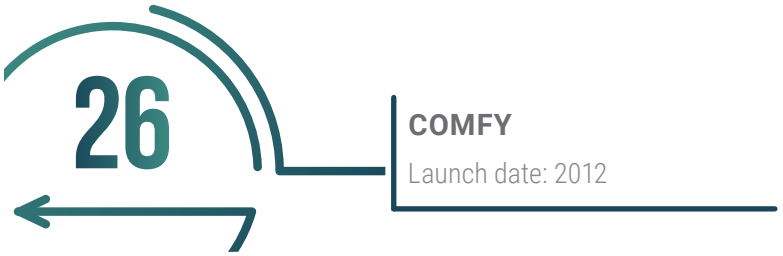
ClearBlade is a platform for the industrial internet of things that enables developers to engineer and run real-time, scalable internet of things applications. ClearBlade is deployable in any vendor cloud, on-premise or in hybrid environments, allowing companies to build enterprise internet of things solutions that make streaming data actionable by combining business rules and machine learning with visualizations and integrations to existing business systems.

ClearScale delivers cloud systems integration, application development and managed services. The company provides internet of things platform design and automation services, builds infrastructure for connected devices and more.

Cloudera provides end-to-end data management services including a data storage and analysis platform. It offers and supports Apache Hadoop-based software to businesses.



Comcast is a media and technology company that provides customers with video, high-speed internet and phone services under the name of Xfinity. The company also offers Xfinity Home, a platform that integrates users' smart home devices into one personalized platform.



Building Robotics is the developer of Comfy, a service that allows office workers to change their workplace ambiances by personalizing temperature, lighting, window tint and more. Changes can also be applied in specific areas, allowing each worker to adjust his or her working conditions without bothering others.

Commscope designs, builds and manages wired and wireless networks. Their services include incrementing bandwidth and existing capacity, improving network performance, increasing energy efficiency and the simplification of technology migration.

Convisint is a cloud platform for the development of identity and internet of things applications that enables customers to identify, authenticate and connect networks of people, processes, systems and things.

Crate.io is an open-source database allowing real-time, integrated storing and analysis of internet of things and machine learning data for Structured Query Language developers.

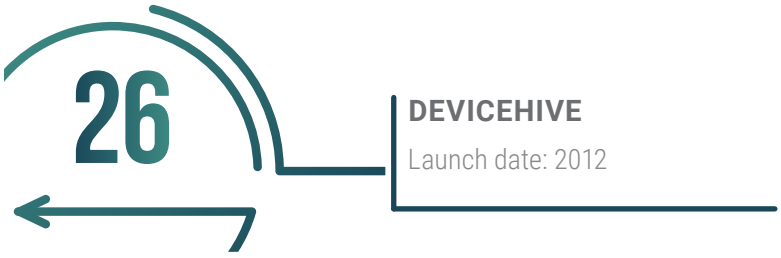
CrowdOptic provides middleware that allows enterprises to manage wearable computing devices in the field from a single platform.

Cypress manufactures semiconductors and electronic products for the automotive, industrial and consumer markets. Among other products, the company develops programmable system-on-chip solutions, capacitive touch-sensing controllers, Bluetooth Low Energy and USB connectivity solutions.

DataStax Inc. Provides database software and data management via solutions including a distributed cloud database built on Apache Cassandra architecture and designed for hybrid cloud. The company's offerings aim to support management and analysis of large amounts of time- and sensor-based information.

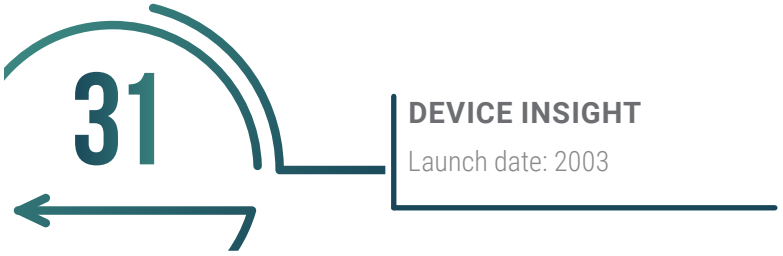
Davra provides organizations with an application enablement platform for the development of internet of things applications. The platform has been designed to control all elements of the IoT Edge Gateway.

Dev Technosys is an Indian Internet of Things application development company with presences in Ireland, New Zealand, the United Arab Emirates, the United Kingdom and the United States. It has created and delivered over 1,500 products for clients in more than 30 countries.

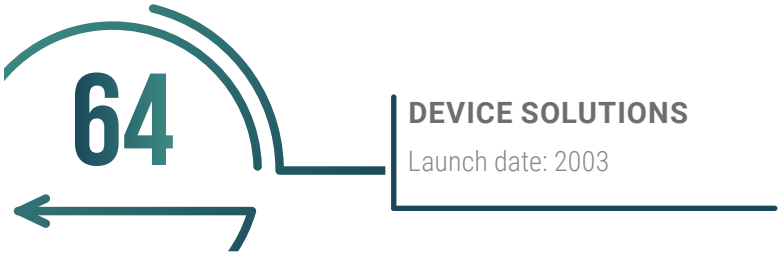


DeviceHive is an internet of things data platform that enables device integration and offers services to connect smart devices to public and private clouds. The solution collects and analyzes data from devices such as sensor networks, smart meters, security systems, telemetry, industrial or smart home devices.

Enablers Scorecard – Suppliers are listed in alphabetical order.



Device Insight has developed a internet of things platform solution called Centersight that offers tools to monitor internet of things and machine-to-machine devices, providing operating data insights and analytics, error reports, machine configuration features, alarming and more. It can be used in the industry and automation, connected products, telematics and fleet management and energy and smart city markets.



Device Solutions provides solutions for the areas of engineering consultancy, testing and certifications of products for network providers and its own service, Cellio. Cellio is an end-to-end solution that connects, computes and communicates information from the internet of things. It is made from sensors, a cellular communication gateway and cloud-based software.

DGLogik provides innovative software solutions that enable and visualize the internet of things

Digi International develops machine-to-machine and internet of things connectivity products such as embedded modules, gateways, routers and USB and serial connectivity devices. The firm offers remote device managing solutions and wireless design services. Digi International's products are designed for energy, smart cities, medical, industrial, retail and transportation markets, among other industries.

D-Link offers networking solutions as well as smart home ecosystems. Their products include surveillance cameras and recording devices, networking tools including routers and extenders as well as automation solutions.

Drayson Technologies Group is an artificial intelligence and machine learning solutions provider based in London. It supports smart sensor networks using its internet of things platform, which relies on wireless charging technology.

Enablers Scorecard – Suppliers are listed in alphabetical order.

ELECTRIC IMP

Launch date: 2011

Electric Imp offers an internet of things platform that securely connects devices with cloud computing services, helping manufacturers to manage and quickly scale their connected products and services to millions of users.

ELEMENT ANALYTICS

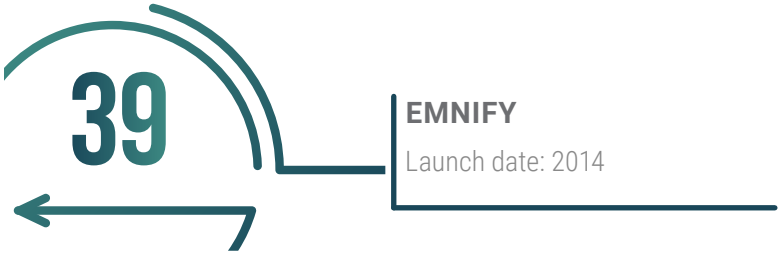
Launch date: 2015

Element Analytics creates industrial analytics software to help organizations improve their operational performances. The platform prepares time-series data, gives it relevant context and uses machine learning to analyze it and provide surface reliability, productivity and sustainability insights.

ELINEXT

Launch date: 1997

Elinext offers big data and IoT products to companies across Asia, Europe and the U.S. It has currently supported more than 200 IoT-connected projects.



EMnify offers a connectivity, control and management platform for internet of things and machine-to-machine devices.

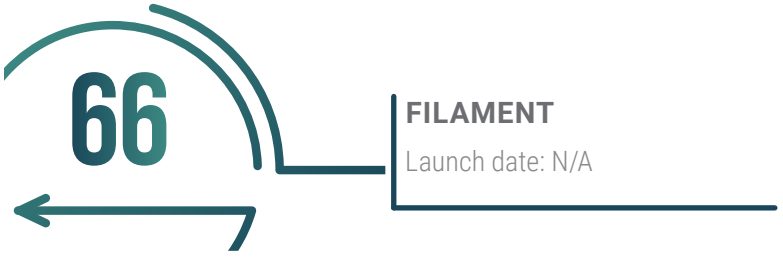
Ericsson's internet of things solutions cover a wide range of capabilities and functions including service enablement, data analytics and billing, data connectivity, and standardized APIs. Its products include its Smart Metering as a Service, an end-to-end automatic meter and data management solution.

Eseye is a global provider of machine-to-machine cellular connectivity for the internet of things. It aims to simplify enterprises' global device deployments.

Enablers Scorecard – Suppliers are listed in alphabetical order.

Etisalat is a telecommunications company offering coverage of 3G and 4G mobile technologies, and is currently working with 5G services. The firm offers machine-to-machine solutions and controlling and monitoring services for both government and enterprises.

Eurotech researches and develops connected hardware, supplying products such as computer boards, modules, computer devices and systems, and offers software to create machine-to-machine and internet of things applications.

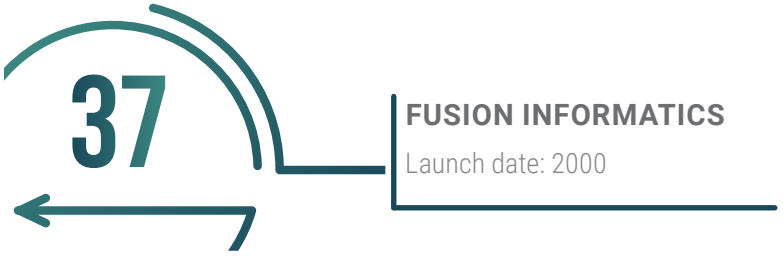


Filament provides blockchain hardware and software solutions for enterprise and industrial internet of things. The solutions enable secure connections, allowing devices and machines to safely interact and transact value.

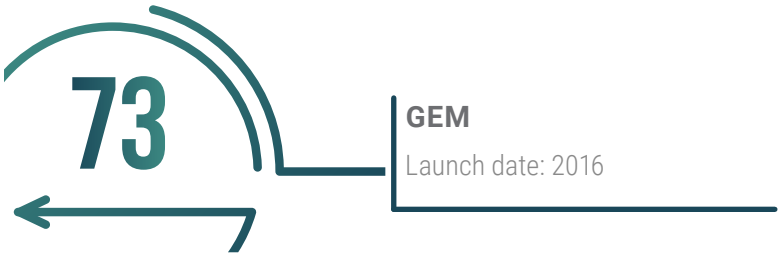
Flexera Software develops software licensing, compliance, cybersecurity and installation solutions to help application producers and enterprises manage application usage and increase security. The company's FlexNet Producer Suite for intelligent device manufacturers is a part of a strategic solution for application usage management.

Flex designs, manufactures and distributes internet of things products and offers a range of aftermarket services, including prototyping, design, manufacture and logistics distribution, as well as its retirement of the market. The company also offers its expertise in a range of products from sensors and connectivity to security and software.

FogHorn Systems is a multi-tier internet of things application deployment platform that bridges information technology.



Fusion Informatics was established in 2000 and offers internet of things support for 31 disparate industries, including banking, electronics, manufacturing, retail, security and utilities.



GEM provides platform-as-a-service and platform-as-a-product offerings to improve productivity, quality, security and experiences for enterprises and individuals.

General Electric is rolling out internet of things tools for industries including automotive, aviation, chemical, food and beverage, healthcare, oil and gas. Predix, one of the company's main internet of things solutions, is an operating system and platform for building applications that connect to industrial assets, collect and analyze data, and deliver real-time insights.

Glassbeam provides a software-as-a-service-based solution for product analytics based on machine log data.

Globetouch provides connectivity, management and deployment services for machine-to-machine and internet of things solutions. The company offers GConnect, a platform enabling internet of things connectivity through CloudSIM technology, and the firm's GControl platform provides connectivity management tools to launch and manage its services.

Designed for residential, commercial, retail, hospitality and industrial applications, Gooee has developed an enterprise scale internet of things lighting ecosystem that provides sensing, control and communication components enabled to integrate with an enterprise scale cloud platform for lighting manufacturers to connect to the internet of things.

Enablers Scorecard – Suppliers are listed in alphabetical order.

Google Inc. develops a family of technology products that go from the known search system, desktop tools and operating systems to communication hardware, payment solutions and wearable devices.

Grundfos provides pump systems and water technology that is connected to the internet of things. The company works with family homes, commercial buildings and industrial complexes.

New!

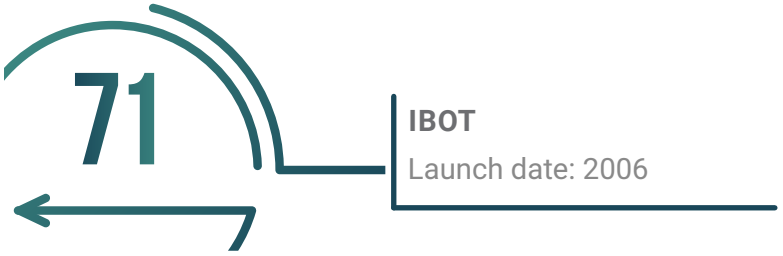
The GSMA is a trade body that represents more than 750 mobile operators worldwide, including device makers, internet companies and software providers. It is also connected with nearly 400 additional companies that are associate members in the body. GSMA seeks to provide more clarity on how the internet of things world will intersect with mobile and telecommunications.

Hologram is a platform for building internet of things products with a focus on cellular. The cloud-friendly Hologram Cellular Platform enables users to connect devices to the internet, and the company also offers software that allows users to talk to their devices, route incoming and outgoing messages, and open up secure purchasing power parity sessions via a secure application programming interface.

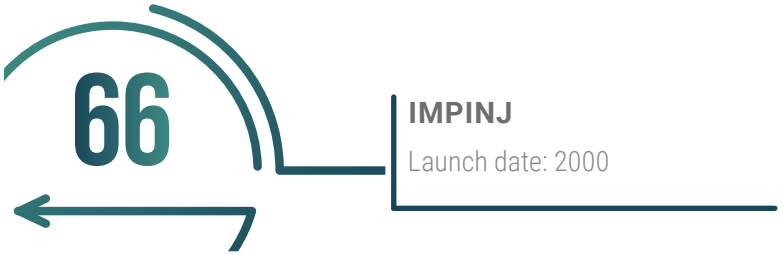
HQSoftware is a full-stack Internet of Things, augmented reality and virtual reality development agency, offering a range of IoT services, platforms, frameworks and protocols. The team provides analytical, mobile and prototyping services as well as software integration and web services. Its portfolio includes 450 successfully delivered and launched projects for clients worldwide.

IBM develops an array of solutions among industries such as analytics, commerce, security, cloud and mobile, and its Watson internet of things platform extends the power of cognitive computing by enabling the connection of devices and the application of cloud- based services like device management, predictive and real-time data analytics or information management.

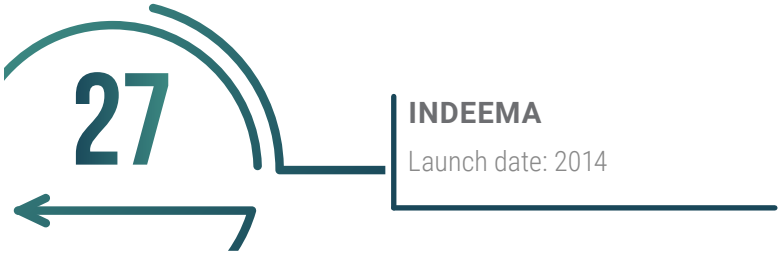
Enablers Scorecard – Suppliers are listed in alphabetical order.



iBot Control Systems is a research and development company providing a platform and other software intended to help manufacturers and other businesses use the internet of things.

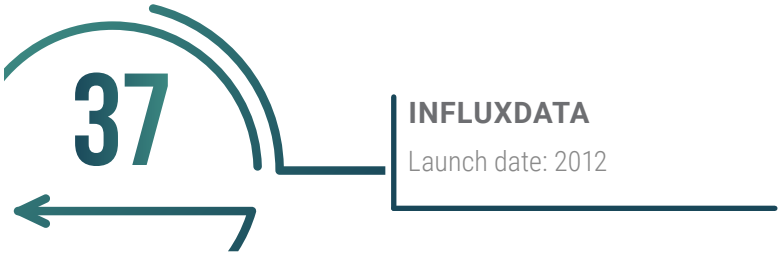


Impinj has developed a platform comprised of hardware and software using advanced intelligence network radio frequency identification to wirelessly connect to the internet of things. The platform provides businesses with real-time insights about their connected devices, and the company also offers gateways and reader chips.



Indeema Software is a software solutions development company specializing in Internet of Things technology integration. It operates in web development, industrial IoT and mobile development.

Infinera Corp. provides optical transport networking solutions, equipment and software and services worldwide.



InfluxData is the creator of open source time-series database InfluxDB. The company's technology handles massive volumes of time-stamped data produced by internet of things devices, applications, networks, containers and computers. It helps developers and organizations store and analyze real-time data to more quickly build and scale monitoring, analytics and internet of things applications.

Ingenu enables long-range, low-power connectivity for internet of things and machine-to-machine communication. Its wireless network serves industries including smart cities, fleet management, smart agriculture, usage-based insurance and connected cars.

Intel offers companies end-to-end platform of IoT solutions, and its platform provides reference models and a portfolio of products based on foundational technologies that let companies connect, secure and manage data from existing business assets that were previously unconnected from new smart and connected things.

InterDigital provides wireless technologies for mobile devices, networks and services. The company has developed solutions used in digital cellular and wireless products and networks, including 2G, 3G, 4G and IEEE 802-related products and networks.

IoTium is a computer infrastructure and network security services firm providing solutions to manage industrial internet of things network infrastructure.

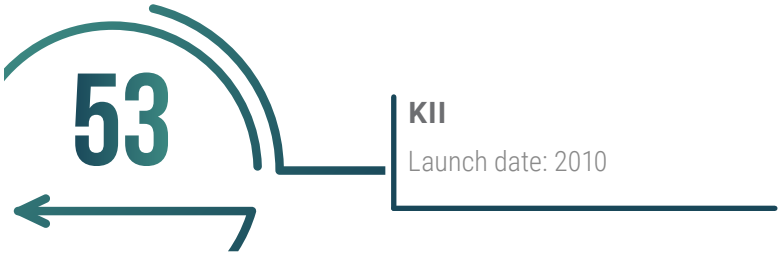
Iridium is a mobile satellite service company offering global coverage via cross-linked satellites, providing voice and data services for areas not served by terrestrial communication networks.

Itron provides end-to-end solutions to measure, manage and analyze worldwide energy and water usage. These include smart electricity, gas and water meters, smart network technologies and meter data management software.

Jasper, formerly Inoventive Technologies, provides an artificial intelligence-powered recruiter bot that uses machine learning and natural language processing to innovate the engineer recruiting space.

Enablers Scorecard – Suppliers are listed in alphabetical order.

Karamba develops security solutions for connected cars, offering endpoint security for vehicles' externally connected electronic control units that allow only explicitly permitted code to run through them. Karamba also provides early detection of droppers and malware protection services.



Kii's platform enables the building and development of internet of things programs to help connect devices to the cloud and allow users to monitor and manage them. The service also provides analytic insights and app development tools and support features such as geolocation, user and data management and A/B testing.

KORE is an internet of things and machine-to-machine service provider and network connectivity solutions developer, offering global coverage through Global System for Mobile, code-division multiple access and satellite data services.

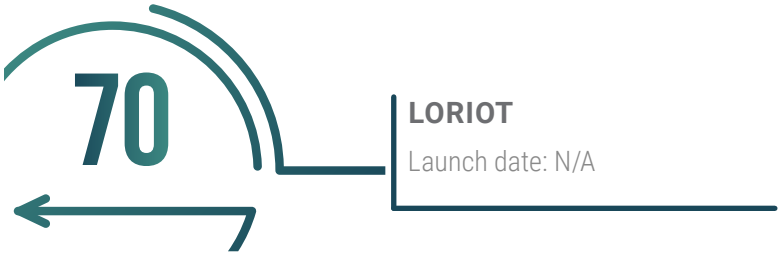
KPN is a telecommunications provider of network services such as IP-VPN, E-Line, E-LAN, corporate internet, managed video-conferencing, international private line, wavelength, IP transit and dark fiber. The company also offers device management and network analysis reporting.

KYOCERA Corp. is an electronic technology provider manufacturing multiple mobile devices. The company offers multiband modules supporting LTE, UMTS and Global System for Mobile, and are designed for automotive and various machine-to-machine applications.

Lantronix is a provider of secure data access, connectivity and management solutions for internet of things and information technology assets.

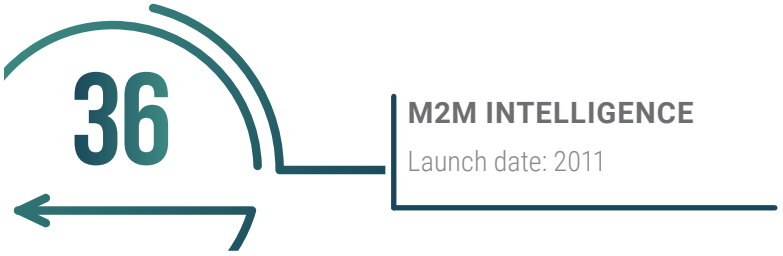
Enablers Scorecard – Suppliers are listed in alphabetical order.

Link Labs offers low-power, wide-area network technologies for the internet of things. Its Symphony Link solution connects enterprise or industrial internet of things devices to the cloud. The company also offers an end-device-certified LTE Cat-M1 modem for battery-powered application.

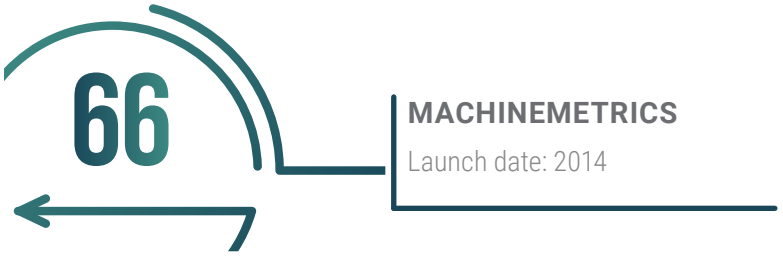


LORIOT AG develops enterprise software for LoRaWAN and end-to-end applications, serving businesses, cities, municipalities and wireless network operators.

LPRS provides low-power radio frequency solutions for original equipment manufacturers. It manufactures and supplies radio modules, antennas and sensors for the industrial, scientific and medical markets.

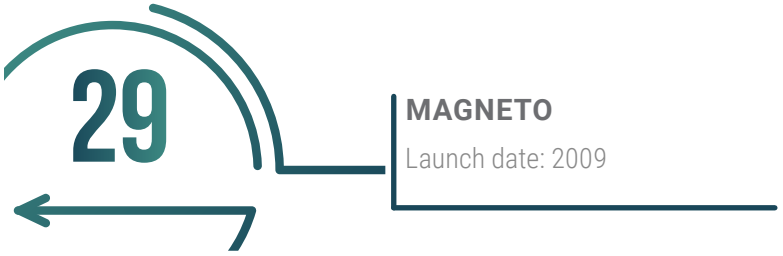


M2M Intelligence offers multinetwork subscriber identity modules letting users connect their internet of things devices. The subscriber identity modules are designed to maximize the area from which the devices can connect, enabling them to reach better alternative networks. The firm has also deployed the M2M Insight, a portal allowing users to manage the performance of every device's subscriber identity module on a one-page dashboard.



MachineMetrics provides a fully automated manufacturing analytics solution, visualizations of real-time manufacturing production data, predictive notifications and historical analytics that allow workers to make more informed decisions based on real-time data.

MagicCube is a device-independent internet of things security platform that protects against on-device, cloud and network attacks. Its solution secures digital transactions on all devices, in transit and in the cloud, without the complexity and costs associated with many hardware deployments.



Magneto IT Solutions creates mobile applications for internet of things devices to help clients enhance their usability and it also offers security solutions and simplified user experience design.

Magora develops software for companies that includes support for internet of things-enabled devices. It also creates custom software solutions for its clients.

Microchip provides microcontroller, analog, field-programmable gate array, connectivity and power management semiconductors.

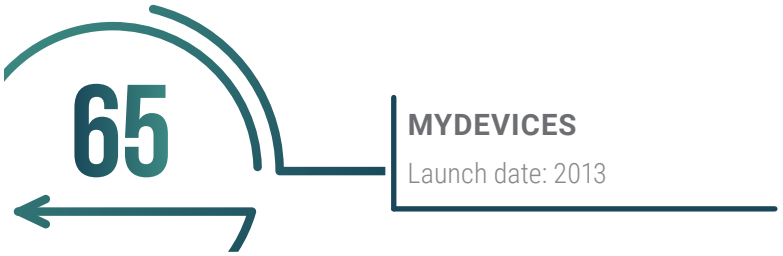
Mindinventory is a web development company that offers IoT app development services. The company, established in 2011, provides access to more than 130 IoT technologies and partners, including Amazon Web Services and Google Cloud.

Mnubo provides Big Data and analytics to the internet of things and machine-to-machine space. The company assists with the development of "smart objects" and works with clients in the wearables, home, automotive, industrial and health care spaces.

Mobiquity is a mobile computing professional services firm that helps clients design, develop and deploy custom solutions.

MongoDB offers a document database solution to help businesses in a variety of industries leverage data to create new security applications and improvements.

Movidius develops vision processor chips, software and development tools, and its products can be applied in different industries like robotics or smart security.



myDevices develops a white-label internet of things platform providing a range of services, including device installation, activation, communication and management. The solution allows for data management capabilities, including real-time streaming and analytics and visualization capabilities. The service also includes features like subscription management and back-office tools.

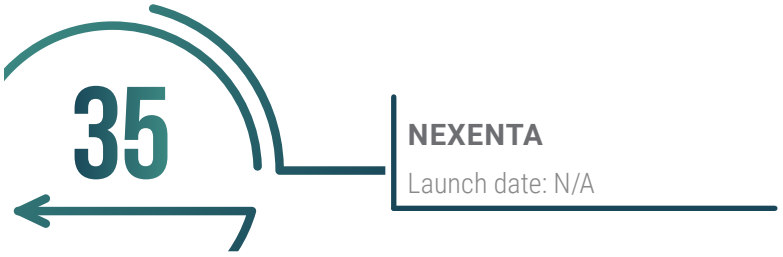
Enablers Scorecard – Suppliers are listed in alphabetical order.

Myriota is an Australian company that provides low-cost access to high-value small data in remote locations.

NetBurner offers development kits for internet of things devices, enabling developers to create or modify the devices. NetBurner also offers Ethernet servers and core modules for network enabling.

Neura is an internet of things data management company that protects users' privacy by establishing digital identities for them which they alone can manage. It allows users to connect their accounts to exchange personal data for services.

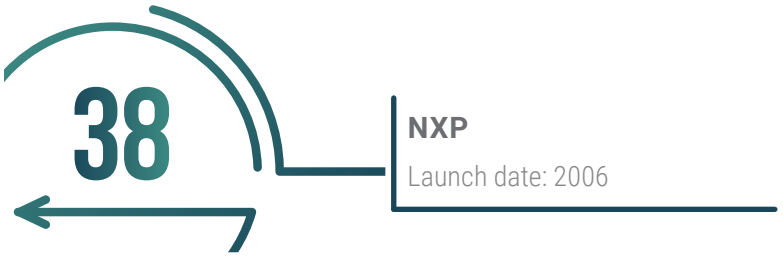
NEXCOM is an intelligent solutions provider focusing on the internet of things, intelligent platforms and services, internet of things automation solutions, intelligent digital security, mobile computing solutions and network communication solutions.



Nexenta provides open-source, software-based enterprise storage solutions including cloud and virtualization-optimized storage management and plugins.

Novelti is a Big Data software company that designs middleware for data scientists and developers.

Nutanix Inc. develops and provides enterprise cloud operating system software including infrastructure, data protection, Big Data and other solutions for the education, energy and utilities, financial services, healthcare, retail, service provider, state and local governments and the U.S. government.



NXP focuses on the development and deployment of automotive semiconductor solutions and general purpose microcontroller products.

Nwave is leveraging its low-power, wide-area wireless network, parking space sensor, analytics and payment technologies to disrupt the transportation market by acquisition, analysis and real-time provisioning of vehicle parking data.

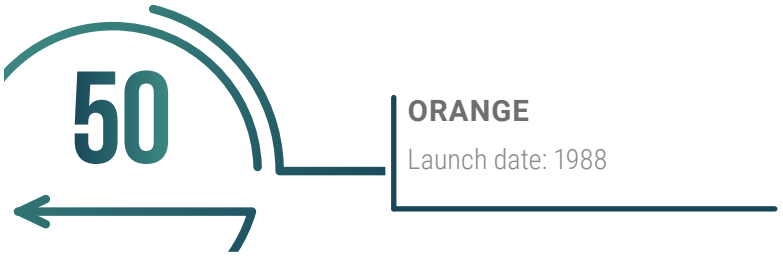
OPTION WIRELESS TECHNOLOGY

Option offers wireless solutions enabling machine-to-machine communication. The offerings also provide security, processing and management services designed for the retail, transportation, smart building, smart city, smart energy and smart home markets.

ORACLE®

Oracle develops and offers cloud applications, platform services and engineered systems. The company's internet of things solutions allow businesses to connect data from devices, perform real-time data and predictive analytics, and allow enterprise and mobile applications to control devices. Oracle IoT cloud services also allow for different features including endpoint management and integration standardization.

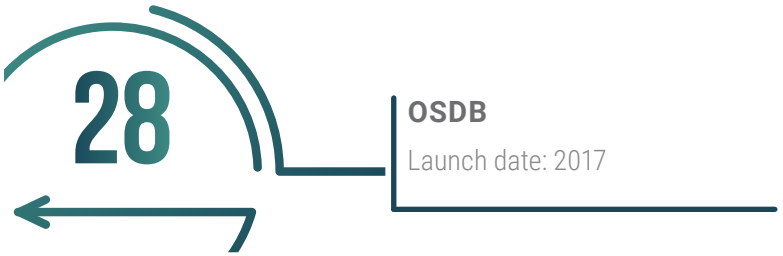
orange™



Orange is a Spanish telecommunications corporation that offers machine-to-machine connectivity solutions. The company has rolled out a range of complementary long-range, wide-area solutions as well as LTE-M technology across its 4G networks in Europe.

Enablers Scorecard – Suppliers are listed in alphabetical order.

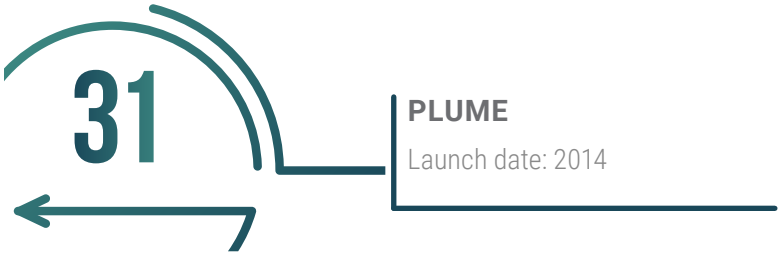
ORBCOMM is a machine-to-machine communications solutions developer that operates a commercial satellite network dedicated to machine-to-machine management operations. The company's services include global satellites, cellular and dual-mode network connectivity, hardware, web reporting applications and software. The solutions are focused on the tracking, monitoring and controlling fixed and mobile assets in industries including transportation, oil and gas, heavy equipment and government.



OSDB builds internet of things web applications, including via Java and Javascript. Its solutions help clients to better and more easily control their smart home devices and other technologies.

Particle is an IoT device platform that enables businesses to build, connect and manage their connected solutions in an easy way. Particle securely connects devices to web and mobile apps so that users can securely control and collect data from their devices. Their portfolio of products includes the Particle Cloud, a cellular internet of things subscriber identity module card and data plan, and cloud-connected microcontrollers.

PixelCrayons is an Indian mobile and web app software development company that offers scalable solutions leveraging artificial intelligence, augmented and virtual reality, blockchain, Internet of Things and machine learning.



Plume offers Plume Adaptive Wi-Fi, a self-optimizing network powered by a cloud that adapts to users' homes in real time so that every room and device receives optimized internet connectivity.

Progress Software offers platform and tools for the development of business applications, enabling the deployment of interfaces for different types of devices and offering Big Data connectivity capabilities.

Prosegur provides comprehensive security services for homes and businesses.

PTC is an American software company that works within the internet of things, augmented reality and application life cycle management industries, among others. The company's internet of things solutions include the ThingWorx Platform, which allows businesses to develop applications; the Axeda Machine Cloud, a cloud-based service for managing connected products; and Coldlight, the company's analytics platform.

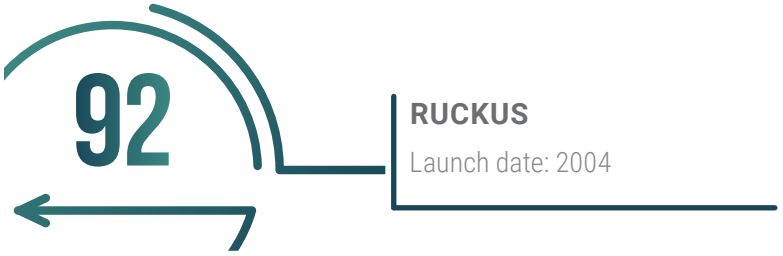
PubNub offers developers the ability to connect, scale and manage real-time applications and internet of things devices, and its Data Stream Network enables simultaneous device connections into a single network.

Qorvo Inc. provides radio frequency solutions and technologies for mobile devices, infrastructure and defense and aerospace applications.

Qualcomm designs and markets wireless telecommunications products and services, developing a wide portfolio of connectivity-based products, enabling connections and interactions across a variety of networks. Its technologies are designed for most of the internet of things markets.

Software provider R-Style Lab specializes in internet of things solutions, covering mobile, wearable and more traditional web applications in the connected economy.

Enablers Scorecard – Suppliers are listed in alphabetical order.

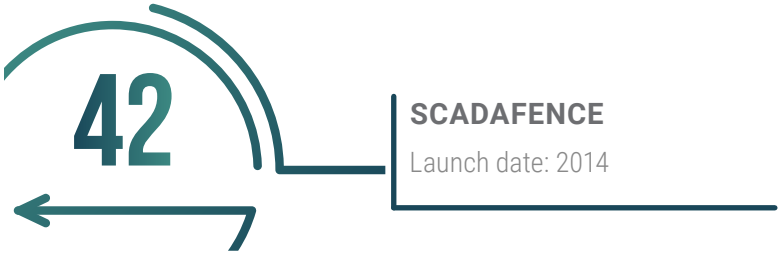


Ruckus Wireless provides wireless systems for the internet infrastructure market, having developed a wide range of smart Wi-Fi products for both indoor and outdoor usage. The Ruckus Wireless Wi-Fi platform offers various capabilities, including location analytics and engagement technology.

Salesforce is a developer of cloud computing services for sales, service, marketing, community, analytics, apps and the internet of things. The Salesforce IoT cloud enables users to connect data from every device, sensor, website and interaction and take smarter, more personalized actions by getting better insights and real-time customer actions.

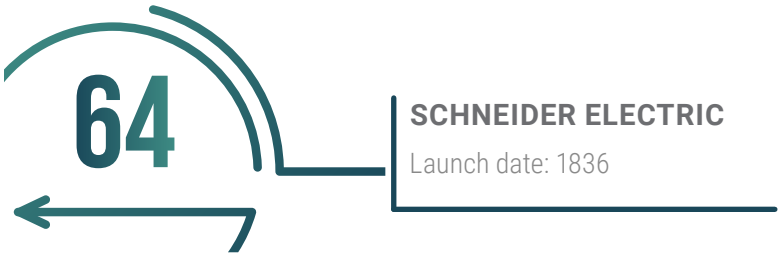
SAP develops a range of products, including a cloud platform that allows users to manage and monitor remote devices, create machine-to-machine apps and develop internet of things solutions. The company covers many industries, including consumer products and retail, energy and natural resources, and financial and public services.

SCADAfence



SCADAfence offers cybersecurity solutions that ensure the operational continuity of industrial controls system (ICS)/supervisory control and data acquisition (SCADA) networks. The company focuses on smart manufacturing sectors, such as pharmaceutical, chemical, food and beverage and automotive, that are adopting industrial internet of things and industry 4.0 technologies.

Schneider Electric



Schneider Electric has developed a software infrastructure for smart cities that enables devices, systems and people to connect. The company also offers a real-time condition management solution that collects data from sensors to the cloud, analyzes and converts it into meaningful insights.

ScienceSoft
Professional Software Development

ScienceSoft is headquartered in the U.S. and provides information technology consulting and custom software development services for more than 550 IT professionals located internationally. It serves customers such as Baxter, eBay, IBM, M&T Bank, NASA JPL, Nestle, T-Mobile, Walmart and others.

SEMTECH CORPORATION

Launch date: 1960

Semtech Corp. develops analog and mixed-signal semiconductor products, and created the LoRa radio frequency platform, a two-way wireless solution that works as a complement for machine-to-machine cellular or Wi-Fi infrastructure. It provides a way to connect battery-operated and mobile devices to the network infrastructure or endpoint. The company's products also include power management, video broadcasting and circuit protection between others.

SEQUANS COMMUNICATIONS

Launch date: 2003

Sequans Communications is a 4G chipmaker, offering WiMAX and LTE chips designed for internet of things devices. The company develops LTE chips for devices such as wearables, smart utility meters, industrial sensors, vehicle telematics, alarm panels and retail kiosks.

SEQUOIADB

Launch date: 2011

SequoiaDB develops and provides commercial support for open source database SequoiaDB, a document-oriented NewSQL database that supports JavaScript Object Notation transaction processing and SQL query. The database can act as a standalone product that interfaces with applications that provide horizontally scalable data storage and processing functions, or serve as the front end for Hadoop and Spark, enabling both real-time query and data analysis.

SIEMENS

Siemens is a technology company offering electronics and electrical engineering services for the automation industry, energy and health care markets. The company offers applications of internet of things technologies focusing on electrification, automation and digitalization, including wind turbines connected with sensors, smart factories and internet of things security solutions.

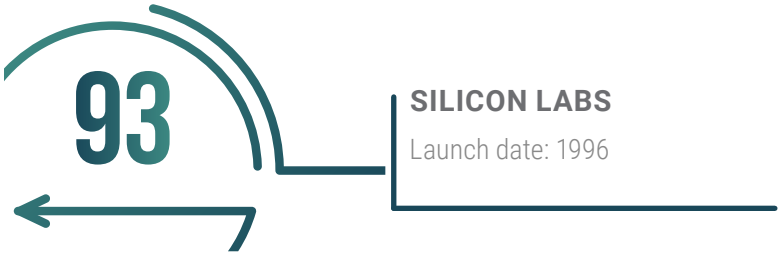
SIERRA WIRELESS

Sierra Wireless offers wireless solutions and has developed a portfolio of 2G, 3G and 4G embedded and networking solutions (routers and gateways), integrating with their secure cloud and connectivity services and management solutions. Its networking solutions provide connectivity, location-based services and remote monitoring.

sigfox

Sigfox is wireless network provider with networks designed to connect low-energy devices and enable low-energy consumption, device-to-cloud connectivity and a system to collect data from sensors and devices.

Sight Machine provides an analytics platform that helps address enterprises' quality and productivity challenges.



Silicon Labs is a provider of silicon, software and tools for the IoT, internet infrastructure, industrial automation, consumer and automotive markets. Among others, the firm offers microcontrollers, wireless system-on-a-chip services and sensors for the internet of things as well as advanced timing and power management chips for internet infrastructure and industrial automation.

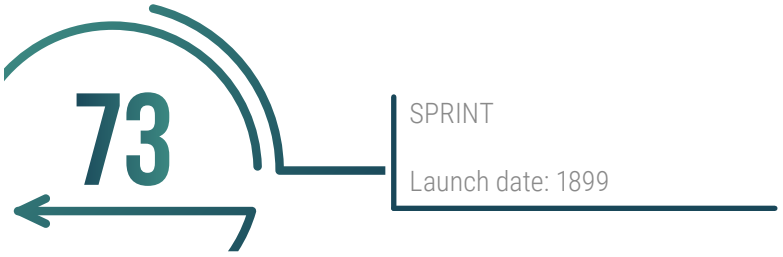
SilverSpring Networks offers a comprehensive suite of internet of things networking solutions for critical infrastructure. The SilverLink Network offers cities and utilities worldwide with solutions for smart electricity, gas, water and city services.

Skyworks wirelessly provides analog semiconductors to connect people, places and things across applications within the automotive, broadband, cellular infrastructure, connected home, industrial, medical, military, smartphone, tablet and wearable markets. Its internet of things product portfolio includes amplifiers, attenuators, front-end modules, power management and switches.

Softeq develops of web applications, embedded software and wearables that can connect to the internet of things.

Soracom is a platform enabling data transmission and connectivity for the internet of things and machine-to-machine markets. The firm offers mobile data transmission using LTE/3G lines as a means of communication. The platform also allows users to manage and monitor the internet of things devices.

SORBA provides platforms and services with offerings designed to gather and analyze data from sensors, and include industrial data collection, machine learning and predictive analytics.



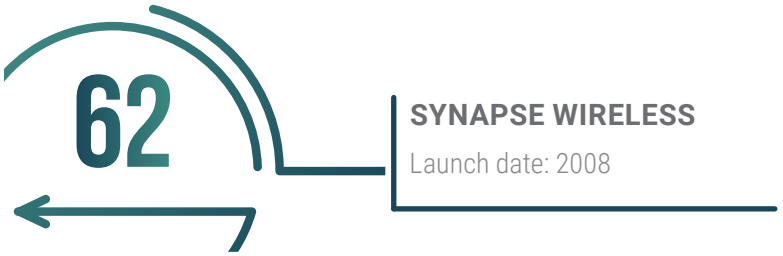
Sprint provides wireless and wireline telecommunication services to consumer, business and government users. Through its various subsidiary companies, Sprint also offers wireless voice, messaging and broadband services.

STMicroelectronics is a semiconductors producer for several industries, including micro- electro-mechanical systems and sensors, power discrete, advanced analog products, and embedded processing solutions. It also has an automotive products portfolio including elements going from powertrain, safety and car body to infotainment.

Enablers Scorecard – Suppliers are listed in alphabetical order.

StorMagic provides a digital storage area network. Its offering can be used IoT projects that require small IT footprints.

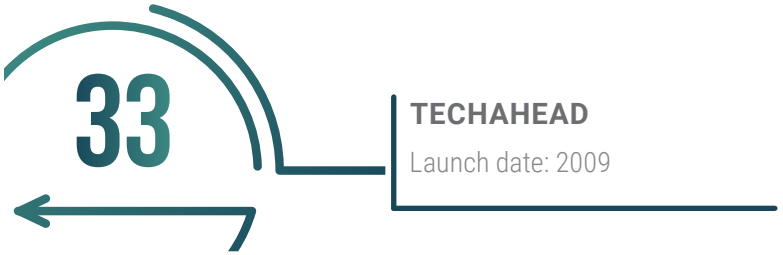
Swim.Ai Inc. develops real-time analytics software marketed to IoT developers, manufacturers, municipalities and vendors. Its flagship product is its SWIM EDX, which is designed to make predictions based on streaming edge data.



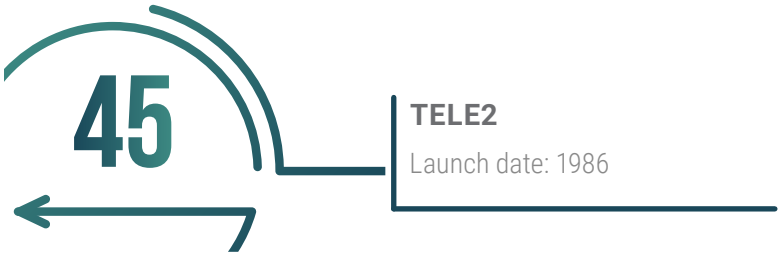
Synapse Wireless provides software, hardware, and networking solutions to develop, deploy and manage connected devices. Its SNAP solution is designed to help businesses develop, connect, control and manage networks of "Things" (devices and gateways), securely. SNAP enables the integration between the Things of IoT with Cloud-based IoT Platforms. Synapse also offers a range of hardware products including modules and wireless lighting controls.

Enablers Scorecard – Suppliers are listed in alphabetical order.

Taoglas is a provider of external, embedded and base station antenna solutions for M2M applications. The firm enables wireless device manufacturers with telematics and automotive, smart-grid, metering and telemetry, home automation, remote monitoring and medical applications.



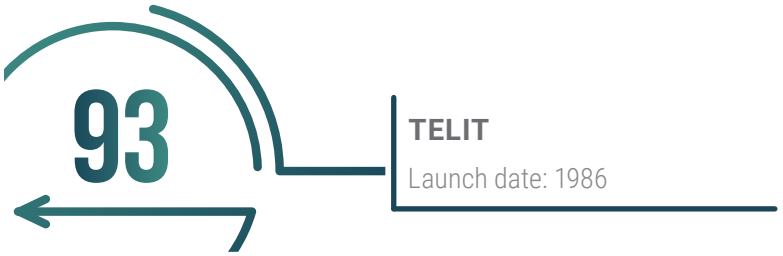
TechAhead provides app development solutions to companies in the agriculture, eCommerce, FinTech, healthcare and smart home development industries.



Tele2 is a telecom operator offering mobile services, fixed broadband and telephony, data network services, cable TV, and content services. The company delivers connectivity and enables management of the IoT connections.

Telefonica is a platform provider enabling an automated communication process between machines. The company offers connectivity services to a range of industries including automotive, utilities, vending machines, e-health and consumer electronics, among others. Telefonica´s platforms boast features like smart device control, business and fleet management as well as connected car and tracking intelligent solutions.

Telecommunications company Telenor offers voice, data, Internet, and content services. Telenor Connexion is a Telenor´s dedicated IoT company which offers: a global Managed Connectivity solution that automates the delivery and management of mobile services to connected devices; Telenor Cloud Connect, an end-to-end solution allowing users to add digital services to their products and Telenor ARTS, a data analytics solution especially designed for IoT devices that enables customers to collect data and insights.



Telit's portfolio of IoT products includes cellular communication modules, GNSS, short-to-long range wireless applications and IoT connectivity plans. The firm also offers IoT platform services, a suite of management tools enabling connectivity, device and data control. Telit's solutions are used by the smart transportation, agriculture, retail, health care, automotive, oil and gas, smart manufacturing, smart energy and smart buildings industries.

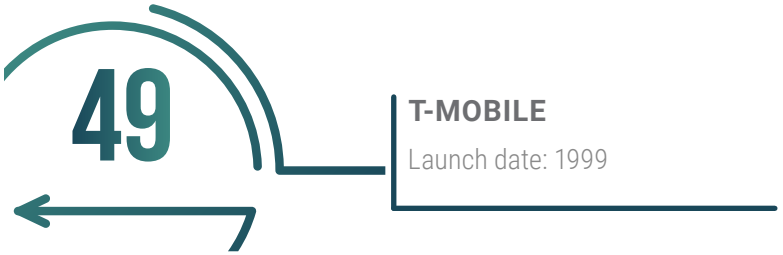
Telstra offers telecommunications service and information service technologies. The company provides internet solutions for mobile phones, tablets and smart homes. It has also developed a kit of smart home devices including energy automation (with smart plugs and sensors) and a monitoring system (with cameras and sensors).

TempoIQ is real-time IoT analytics platform which offers storage, analysis and insights of data from connected applications. Besides, the service enables users to create alerts and monitor the stream of IoT data and analytics, warning them of any change or critical condition.

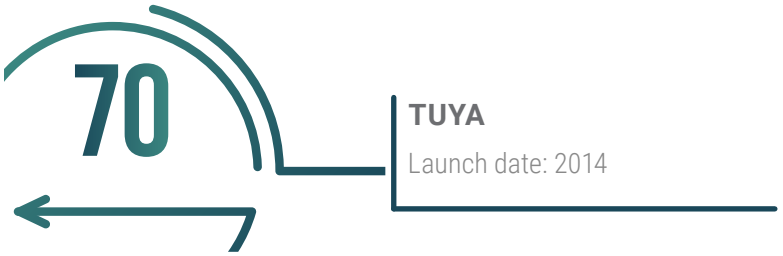
Texas Instruments (TI) develops and commercializes semiconductors, wireless connectivity technologies, microcontrollers, processors and analog solutions. The company offers IoT solutions for multiple industries, including wearables, smart manufacturing, health care, automotive, smart cities and home automation.

Enablers Scorecard – Suppliers are listed in alphabetical order.

ThroughTek is a solution provider for cloud connection platform. Their main product is the Kalay Platform, an end-to-end IoT solution and software service, enabling solution providers and device manufacturers to easily create their own IoT ecosystems.



T-Mobile´s 4G LTE network delivers wireless experiences to customers. The company offers the M2M Hub, a solution that provides businesses with an online tool to deliver and manage IoT connectivity. T-Mobile also manufactures modules and chipsets to enable connectivity.



Tuya is an IoT solutions provider best known for its signature Tuya Smart platform. The product consists of several embedded modules to seamlessly connect lights, switches, sensors, plugs, cameras and appliances to an IoT hub.

Ubiquiti Networks manufactures wireless data communication products for enterprise and wireless broadband. Ubiquiti products range from connectivity software, wireless radios, routing and switching products to Wi-Fi-connected video cameras and intelligent phones.

UnaBiz is the exclusive operator of Sigfox low-power wide-area networks (LPWAN) in Singapore, Taiwan, designed to support IoT products. The company also provides energy-efficient IoT wireless infrastructure and devices.

Uptake Technologies is a predictive analytics platform developer with customers in the construction, healthcare, insurance and manufacturing industries, among others.

New!

Vates was founded in 1991 as an information technology provider and now develops internet of things-enabled software solutions for its clients. It is based in Argentina and supports services for clients in several international markets, including Chile.

VDOO provides IoT security solutions, including automation, certification, embedded device research and malware control. Its customers consist of private corporations as well as government intelligence and defense agencies.

Verizon Enterprise offers networking products, security solutions and cloud and IT infrastructure services. The company also offers ThingSpace Develop, an IoT platform that allows the users to develop, simulate and test creations.

Launched in 2004, VironIT offers IoT software development, maintenance, updates and support for applications and clients within Eastern Europe.

Vodafone is a communications company that offers business, mobile, hosting and cloud services. The company also works in the machine-to- machine industry, developing M2M terminals, asset tracking, energy data management and retail solutions between others.

New!

W•SENSE is a research and development team grown out of Rome's Sapienza University in 2012. It focuses on communication systems that utilize the internet of things, particularly the internet of underwater things and their potential applications.

New!

Xage Security seeks to create internet of things-enabled security solutions for industrial automation. One thousand global companies currently use its industrial internet of things offerings.

Zebra designs and manufactures barcode printing and real-time locating systems, including printers, radio-frequency identification software and other supplies.

ZTE Enterprise develops connectivity products. Its offering includes smartphones, routers and cloud-based management systems. The company also develops railway communication solutions and provides technical consulting services in the energy sector.

ABOUT

About the Tracker

The PYMNTS IoT Tracker brings you the latest news, developments and insights from the biggest players across the IoT ecosystem. Each month, we look at what companies are doing across the ecosystem and in terms of bringing greater connectivity to everyday items and expanding connected networks.

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