

Will IoT Business speed up in 2019

The World's First Top 50 Edge Computing Influencers and What They Do

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- MediaTek Named IoT Semiconductor Company of the Year
- CLOUD - FOG - EDGE Infographic

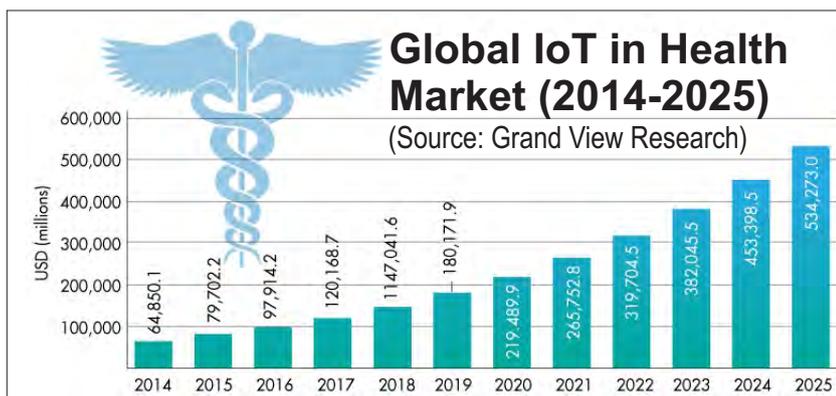
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Daniel Dierickx
CEO & co-Founder
at e2mos
Acting Chief Editor



Over 3 Decades
Semiconductors & Computer
Systems Market Expertise

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ADLINK demonstrates how IoT digital experiments can create business value

ADLINK Technology, Hannover Fair, in the Digital Factory zone

15-Feb-2019 -- Manheim, Germany Newcastle Upon Tyne, UK



ADLINK Technology will be showcasing its innovative IoT digital experiments at this year's Hannover Fair. Its 'Connect Stream Control' technology enables companies to test the business potential of IoT-applications.

During the show, ADLINK will be demonstrating its smart pallet solution, which is just one of a number of IoT implementations developed with customers globally that began initially as a digital experiment. The smart pallet solution uses the ADLINK Edge platform to deliver optimised operations, reduced losses and improved accuracy. Visitors to the ADLINK stand will be invited to take part in an interactive pallet-stacking game for a chance to win a prize by being the fastest and most accurate. Success will be determined by visitors' ability to use real time data to inform their decisions.

"The ADLINK Edge platform provides all the resources required to get IoT digital experiments up and running, allowing organisations to think big, start small and work fast," says Lawrence Ross, General Manger – Software & Solutions, ADLINK. "We believe strongly that digital experiments will form the basis of the next generation of business models and processes shaping industry landscapes."

Other demonstrations on show will highlight how ADLINK Edge can be used to deploy an IoT solution in an industrial environment by connecting assets, streaming data and controlling operations. ADLINK consultants will be available to advise on real-world proven practical applications that deliver predictive maintenance and operational efficiency, and open up opportunities for building new revenue streams. In addition, a selection of partners will be present to show how ADLINK adds value by enabling security, AI (Artificial Intelligence), analytics and machine learning at the Edge.

ADLINK's Edge platform provides businesses with all the benefits of digital experimentation, is vendor agnostic, and enables timely implementation of experiments without associated upfront costs. It bridges the IT and OT (operations) divide with a set of integrated services for end-point monitoring, device management, visualisation, analytics and security. These are integrated together to create intelligent devices that can react to change and the world around them. It makes IoT simple by guaranteeing that data is made available, where it needs to be, precisely when it needs to be there and in the correct format.

ADLINK approaches each project individually to determine which areas are likely to be affected by the solution, from ground level operations to admin and resource allocation. Each digital experiment is defined at the intersection of people, places and affected assets, where most value can be created.

To arrange a demo or meeting at the ADLINK booth (Hall 6 / Stand F18), please click here:
<http://go.adlinktech.com/Hannover-Messe.html>

What Are Smart Cities?

By: **CBINSIGHTS** -- January 9, 2019

Technology is powering the rise of smart cities, transforming everything from traffic management to waste collection. We dig into the digital revolution giving rise to cities that are more connected, sustainable, and efficient — and what the future of urbanization might look like.

Cities are evolving at a rapid pace.

Over half the world's population currently lives in urban areas. By 2050, that number is expected to jump to 70%.

Along with a growing population, new challenges are emerging as cities look to improve everything from infrastructure to connectivity. Many see this as a viable business opportunity, developing technology to help cities efficiently provide proper foundation, energy, transportation, resources, jobs, and services to their residents.

As a result, cities are undergoing a digital transformation — that is, they are turning into “smart” cities.

Get the 48-page smart cities report

Get a data-driven look at the startups and industry players developing smart city technologies – [CLICK HERE](#)

Smart cities are not merely a far off dream of the distant future. Thanks to innovative technology, smart cities are already a reality — and they continue to expand and become more refined. In fact, the global smart cities market size is projected to be worth \$1.4T within the next 6 years, according to CB Insights market sizing data.

Several players, from tech giants to telecom companies to governments, are working on initiatives to make cities smarter and more efficient. Sidewalk Labs (a subsidiary of Alphabet), for example, is working on creating a community that “combines the best in urban design with the latest in digital technology,” as part of a larger initiative in the city of Toronto.

In this analysis, we look at what smart cities are, the various components of the city that are becoming increasingly connected, players across the ecosystem, emerging challenges, and what the future holds.

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What is a smart city?

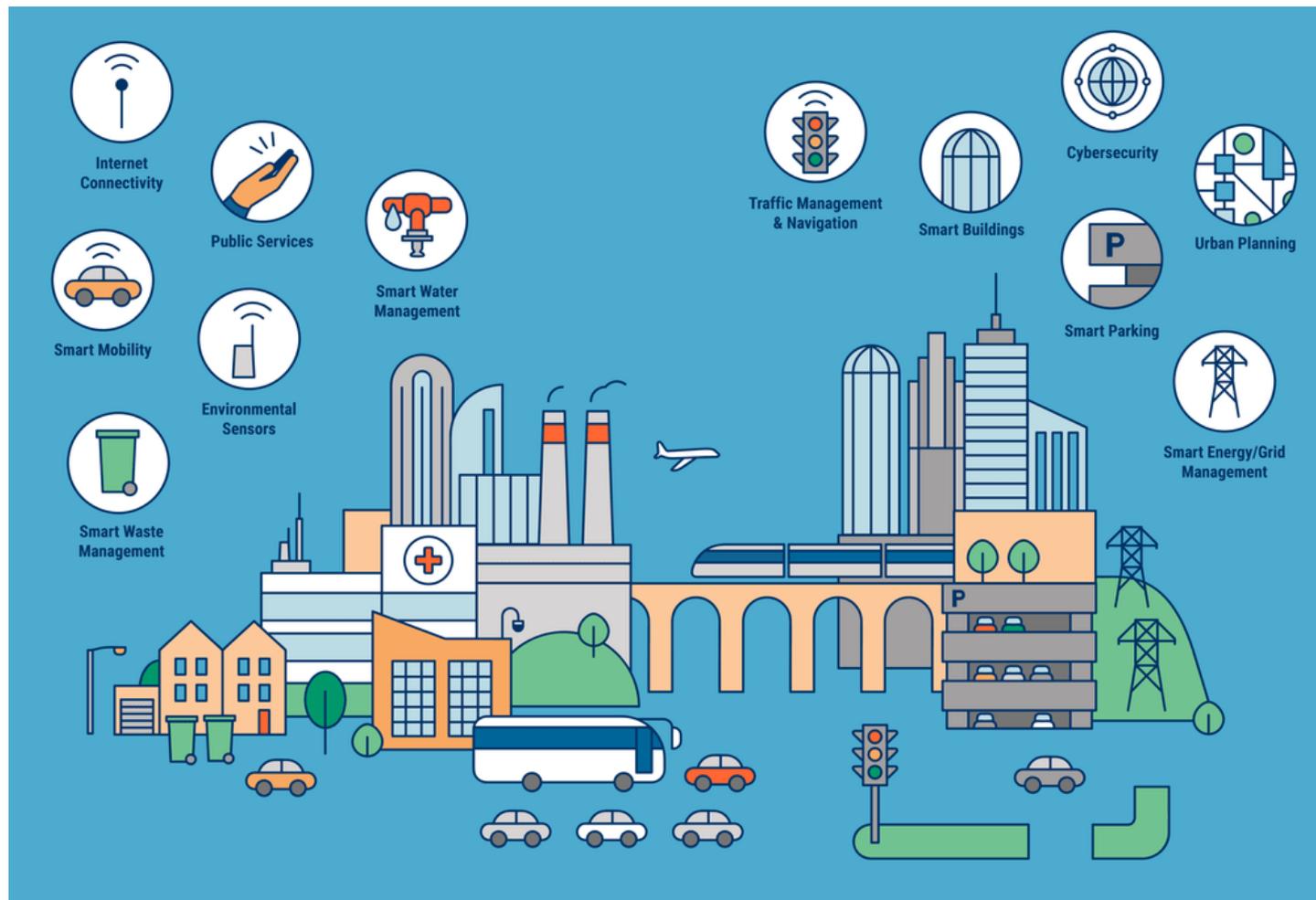
A city is considered to be “smart” when it can collect and analyze mass quantities of data from a wide variety of industries, from urban planning to garbage collection. In a smart city, a complex network of interconnected sensors, devices, and software must be built and maintained.

This should allow the city to become a more sustainable and efficient environment for its residents.

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Smart cities are supported by several types of technologies, including:

- Information and communications technology (ICT)
- Connected physical devices using the Internet of Things (IoT) network
- Geographical information systems (GIS)

Each works together to collect and contextualize massive amounts of data that can be used to improve the components and systems running within a city.

The ICT framework, for example, is made up of various machines and sensors that are all connected to the IoT network, and can instantly transmit data using wireless technology and the cloud. Traffic in a given area, for instance, can be monitored using sensors.

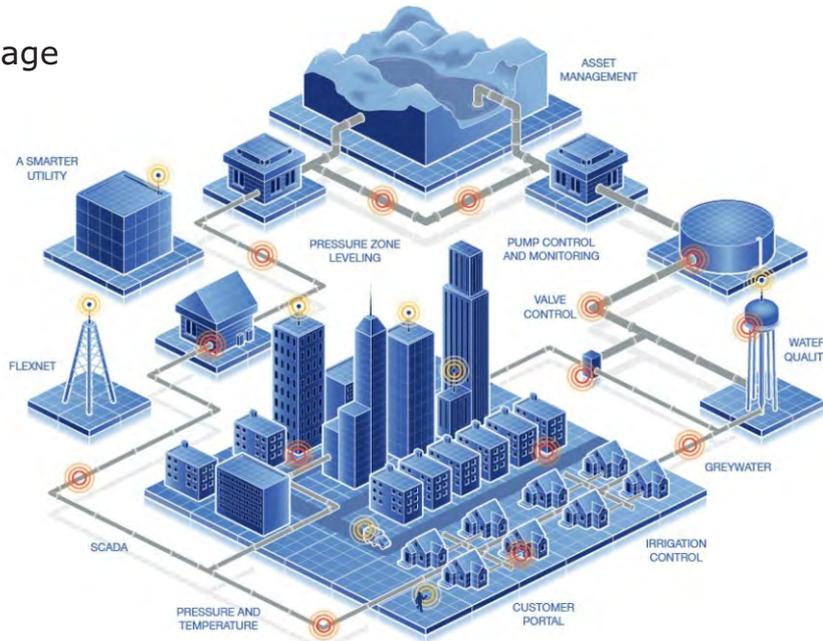
Cloud-based IoT applications can then receive, analyze, and manage that traffic data in real-time. This data can also be used to better understand and respond to a city's constantly changing needs over time, and can even be used to better optimize for safety.

Smart cities can also leverage GIS for planning and mapping purposes, as well as for improved development of cities. As a result, urban areas are able to better manage issues from water management to excessive energy consumption to insufficient waste management, and more.

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Using GIS for smart water management. Source: Ceinsys Tech

Smart cities may also utilize artificial intelligence and blockchain technology for certain systems. Some companies, for example, are working to make parking easier and more efficient using AI-directed facilities. Other companies allow city dwellers to buy and sell energy to their neighbors via blockchain technology.

These are just a handful of technologies working to support the emergence of smart cities. And over time, a successful smart city should in theory be able to respond to incoming data much like a single intelligent organism, seamlessly and efficiently providing itself with exactly what the city and its citizens need, without wasting any resources and without any human error.

Smart City startups

These 200+ companies are developing solutions and services for cities of the future, revolutionizing sectors like public safety, transportation, and utilities management. Stay up to date by looking for Smart Cities in the Collections tab.

Smart city breakdown

Several areas across the city are becoming "smarter," from traffic control to water management, with various companies working across the different components.

Smart City Rising

<p>Connectivity</p>	<p>Smart Mobility</p>	<p>Energy Grid Management</p>	
<p>Parking</p>		<p>Water Management</p>	
<p>Traffic And Navigation</p>		<p>Environmental Sensors</p>	<p>Public Safety</p>

MORE: [CLICK HERE](#)

Startup's Energy Harvesting Chips Run on Radio Frequencies

Electronic Design | James Morra | Jan 17, 2019

Wiliot, a startup developing Bluetooth chips that can be powered by ambient radio frequencies, has raised \$30 million in funding from **Qualcomm Ventures**, **Samsung Venture Investment**, **Avery Dennison** and **Amazon Web Services**, among others. The funding increases the company's total to \$50 million as it moves closer to entering production.

The chips can be slapped on tags as small as a fingernail, as thin as a sheet of paper and that incorporate sensors. According to Wiliot, the devices can broadcast data such as location, weight, and temperature over Bluetooth. Wiliot's technology lets them communicate with smartphones or other Bluetooth devices using energy harvested from WiFi, cellular and Bluetooth—no batteries required.



The sensors can be used in all sort of devices unconnected to the Internet of Things, ranging from spare parts in a manufacturing plant to the packaging around consumer goods. The sensors could be pasted on products during production to track them from the factory to the warehouse to the store. They could also replace clothing tags, giving customers the ability to scan for more details.

"Wiliot's strategy for battery-free Bluetooth transponders, which sense and communicate without needing specific action by consumers, is very relevant to Avery Dennison's intelligent label strategy," Francisco Melo, general manager of Avery Dennison's radio-frequency identification (RFID) unit, said in a statement. Avery Dennison is one of the largest RFID manufacturers in the world.

Wiliot, which has around 40 employees and is based in San Diego, California, is the second company founded by the team behind semiconductor startup **Wilocity**. The company raised roughly \$100 million in investment to build chips based on the next generation WiFi standard - more commonly called WiGig - targeting the personal computer and peripherals markets. Qualcomm bought it for around \$400 million in 2014.

"We believe that disposable electronics based on battery-free, low-cost systems are the foundation for future Internet of Things systems," chief executive and founder Ta Tarim said. "Recycling the radiation around us to power sticker-size sensors can enable new ways for consumers to interact with products that were previously not feasible," Tarim, a former vice president of product management at Qualcomm, added.

Wiliot, which has around 40 employees and was founded in 2017, is the latest company started by the founding team behind another startup, Wilocity. The company raised roughly \$100 million in investment to build chips based on the next generation WiFi standard - more commonly called WiGig - targeting the personal computer and peripherals markets. Qualcomm bought it for around \$400 million in 2014.

Other companies are operating in the energy harvesting chip market. **Atmosic Technologies**, which was founded by former engineering executives at **Qualcomm Atheros**, is building Bluetooth chips for consumer electronics such as wearables that are capable of running on radio frequencies directed at them from other Bluetooth devices. The company's chips are not dependent on ambient energy like Wiliot's. **MORE:** <https://www.wiliot.com/>

MediaTek Named IoT Semiconductor Company of the Year

9 Jan 7, 2019 - 8:30 AM - Corporate <https://www.mediatek.com/blog/product-news>

MediaTek has kicked-off 2019 on a high! It's been awarded the "IoT Semiconductor of the Year" award from IoT Breakthrough, an independent organization that rates best companies, technologies and products across the IoT market. With 3,500 submissions from global companies across 10 categories, the competition was fierce, however the organization noted that MediaTek's role in 5G as a crucial factor in its award:

"MediaTek has not only been a pioneering wireless and IoT chipset leader, they are spearheading the 5G wireless revolution and will play a critical role in the next phase of hyper-connected wireless devices on 5G," said James Johnson, managing director at IoT Breakthrough.

MediaTek is pioneering IoT solutions through its NB-IoT connected products; Smart TVs and voice assistant devices (VAD) at home; and we've created platforms for location intelligence, smart connected health and fitness wearables, and industrial M2M products. This year we're also bringing more intelligence into the home through Wi-Fi routers and appliances in order to create a more ubiquitously connected future.

IoT Breakthrough expects the IoT industry to generate 450 Billion in revenue by 2020, powered by 28 Billion connected devices worldwide by 2021, and by 2030 IoT will add 14.2 Trillion added to the global economy.

Advantech names new associate VP of embedded IoT Europe

Advantech has appointed Dirk Finstel as associate vice president embedded IoT Europe, effective from January 1st, 2019.



Dirk will lead the Embedded IoT sector in Europe, underlining the importance of the Embedded business in Europe to Advantech.

He has over 25 years of experience in the embedded computing sector, having had a successful career in both sales and technology. Dirk was previously CEO of sales & marketing for the embedded boards division and CTO and member of the management board of Kontron AG. Dirk also worked several years as CEO EMEA and EVP at ADLINK Technology. In his most recent role, Dirk worked as managing partner /CTO at eCOUNT embedded in Munich, Germany. **More:** www.advantech.com

ADLINK CTO Angelo Corsaro Named to Power 200 List of 'World's Most Influential Data Economy Leaders'

San Jose | 21-Feb-2019

Angelo Corsaro, Ph.D., [ADLINK Technology's](http://www.adlink.com) chief technology officer, has been recognized as one of the world's most influential data economy leaders in the data center, cloud and data sector. Dr. Corsaro was named to Data Economy's [Power 200](#) for attributes including innovative thinking, business acumen and entrepreneurial skill set.

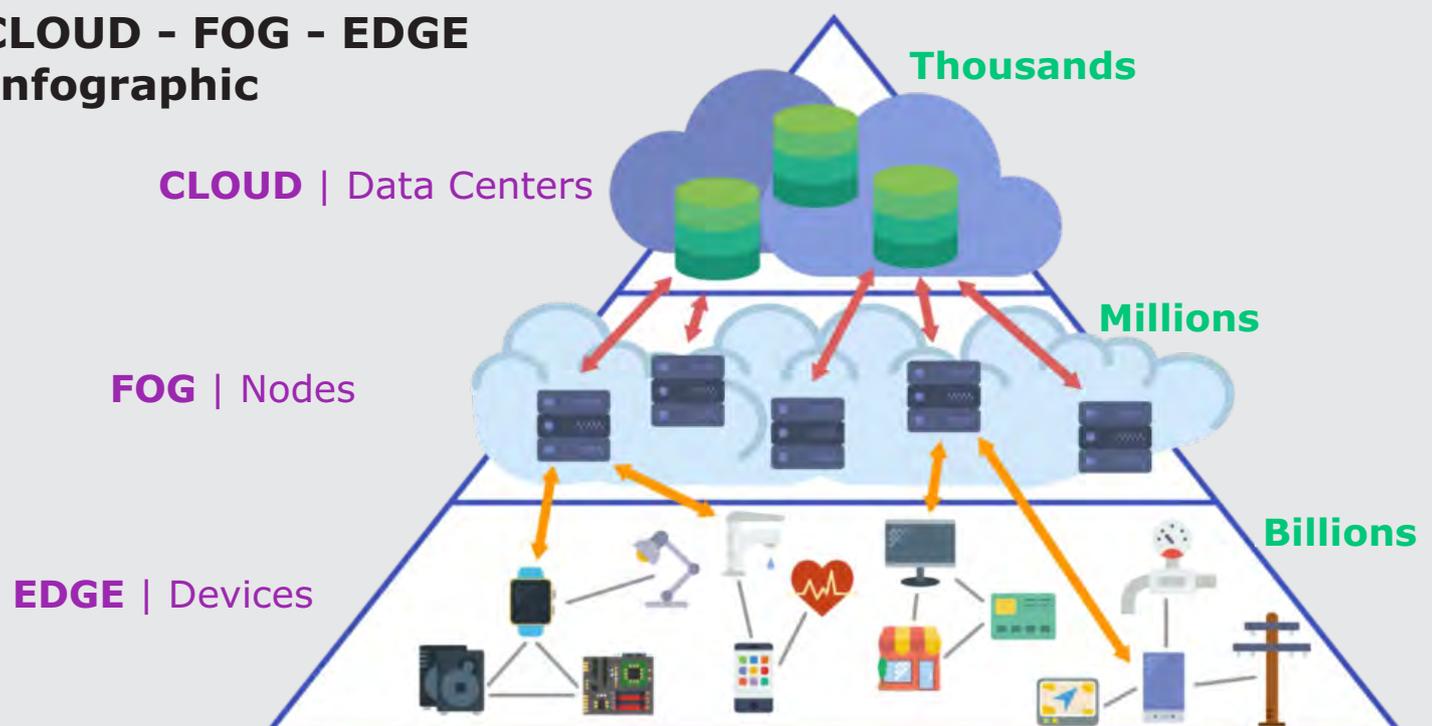


The Power 200 is a biannual global list showcasing the top 200 personalities around the world who have proven to be the most influential leaders in today's data economy.

"I'm very honored to be recognized for my work in fog, edge and IoT areas and to be named among the global leaders of the new data economy," said Dr. Corsaro. "Fog and [Edge Computing](#) will be at the foundation of the next wave of IoT and 5G, bringing better performance, scalability, and allowing data to be processed there where it is produced, greatly improving security and confidentiality. I am extremely glad to be part of some of the key people making this wave of innovation."

As ADLINK CTO, Dr. Corsaro leads the company's Advanced Technology Office and serves a leading role in the corporate technology and digital transformation strategy. He is a world's leading expert in Edge/Fog Computing and a well-known researcher in the area of high performance and large-scale distributed systems. Among his many recognitions, **Dr. Corsaro was previously named by Data Economy as one of the Top 5 Edge Computing leaders on the publication's list, "EDGE 50: The World's First Top 50 Edge Computing Influencers."** See List EDGE 50 on page 10.

CLOUD - FOG - EDGE Infographic



EDGE 50:

The world's first top 50 edge computing influencers

By: [João Marques Lima](#)

Data Economy is proud to run for the first time “#Edge50”, showcasing the 50 personalities who are leading edge computing through charting new innovations or technological breakthroughs, sheer investment or business acumen, or exceptional entrepreneurial skillsets.

#Edge50 is sponsored by EdgeConneX and CNet Training



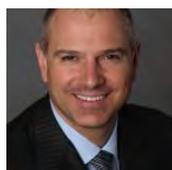
Alex Gellman
CEO & Co-Founder, Vertical Bridge

Gellman is one of the US' top executives and currently serves as CEO of Vertical Bridge, the largest owner and operator of wireless communication infrastructure in the country. He has taken the front row sit in leading the company's edge vision having invested into the segment as well as entering into a partnership with DataBank in one of the US' biggest edge deals to date.



Alfonso Carrillo Aspiazu
Chief Architect, OnLife, Telefonica

Madrid-based Aspiazu is Telefonica's secret weapon for the edge. He is responsible for the engineering of the company's OnLife solution, which seeks to decentralise data analytics and make it happen “on board” of devices, at the edge.



Andre Fuetsch
President AT&T Labs & CTO, AT&T

Fuetsch is responsible for delivering the architecture and design of AT&T's future networking evolution for edge applications. He leads a team of over 2,000 engineers and computer scientists working on programs encompassing both the business and mass market customer segments.



Angelo Corsaro
CTO, ADLINK Technology

Based in the French capital, Corsaro is an expert in high performance and large scale distributed systems crucial to the edge. He oversees ADLINK's Technology strategy and innovation for industrial IoT and is behind the company's Fog Computing Platform built for edge devices.



Cole Crawford
Founder & CEO, Vapor IO

With more than 20 years of activity in the telecom and data centre sector, Cole has built a solid portfolio of solutions and strategies that have now led to Vapor IO, one of the world's most robust edge data centre offerings. Cole is also the co-founder of the Open 19 Foundation, founding Executive Director of the Open Compute Project, former Chairman of the Open Data Center Alliance and co-founder of OpenStack.



Daniel Rodriguez
VP, Data Center Group; GM, Communications Infrastructure Division, Intel

Rodriguez is one of the Intel executives tasked with ensuring the company continues at the top and leads in the edge space. In the communications and infrastructure division, he leads the strategy and manages several business segments including wireless core, cable infrastructure, routers and switches, and network security.



David King
CEO, Flexenclosure

King is an international business leader with over 15 years experience in telecom and high-technology markets. He currently leads the work at Flexenclosure, a prefabricated data centre manufacturer which is deploying infrastructure across the world and allowing computing power closer to data sources both in city and rural areas.

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David Linthicum
Chief Cloud Strategy Officer, Deloitte Consulting

Linthicum is one of the world's leading cloud experts with 13 books published and more than 3,000 articles commenting on the most varied topics including emerging technologies. At Deloitte, which in 2017 turned over \$38bn in revenues, he is responsible for building innovative technologies that help clients operate more efficiently.



Eric Simone
Founder & CEO, ClearBlade

Austin-based Simone started at IBM back in 1988 and has since carved his name in the software development space. He founded edge computing company ClearBlade in 2007. The software company enables enterprises to rapidly engineer and run secure, realtime, scalable IoT applications. He is also the president and MD at investment company Compete Investments.



Flavio Bonomi
Founder/CEO, Nebbiolo Technologies

Bonomi is a serial entrepreneur, technologist and industry visionary, who helped define a new computing paradigm – "Fog computing". He founded Nebbiolo Technologies, which takes cloud-like functionality closer to data-producing sources and merges realtime capabilities to integrate IT and OT in a single platform.



George Tchapanian
President & CEO, EdgeCore

Tchapanian is a seasoned technology executive with more than 30 years of industry experience. He is the top chief at Edgecore Networks Corporation, a provider of traditional and open networking solutions for enterprise, data centre, and telecommunication service providers. He is also the Vice Chair of Open Compute Project in Taiwan.



Helder Antunes
Chairman, OpenFog Consortium

Antunes is Senior Director, Corporate Strategic Innovation Group at Cisco. At the OpenFog Consortium he ensures the group's goal remains on track to create an open reference architecture for fog computing, build operational models and testbeds, define and advance technology, educate the market and promote business development through a thriving OpenFog ecosystem. He is also a Cisco veteran with more than 28 years of experience in leading product and solution development.



Hugh Carspecken
CEO and Co-Founder, DartPoints Holdings

Although based in Dallas, Carspecken is one of Silicon Valley's most prominent edge technologists with over 20 years of cross-industry experience. At DartPoints, he heads one of the fastest expanding edge data centre companies in the world, which deploys and operates assets at the edge of the network including tower sites, interconnect sites and central offices.



Indranil Chakraborty
Product Manager, Google Cloud

Chakraborty has been with Google for over 10 years and is now one of the main names behind the company's edge play. He has helped to build Google Cloud IoT Core, a fully managed service on Google Cloud Platform (GCP) to help securely connect and manage IoT devices at scale in any edge environment.



Jeff Fedders
President, OpenFog Consortium

Fedders is a Chief Strategist for the IoT Group Strategy and Technology Office at Intel focused on Standards, Consortia, and Strategic Partnerships. In his role, he oversees Intel's IoT standards environment engagement, leads the development of their strategies, and directs the standards participation in IoT Standards and Consortia communities. He is a founder and the President of the OpenFog Consortium and also a founder and a Steering Committee representative for the Industrial Internet Consortium (IIC).

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Jen-Hsun Huang
Co-Founder, President & CEO, Nvidia

Huang founded NVIDIA in 1993 and has served since its inception as president, chief executive officer and a member of the board of directors. He is behind some of the world's leading developments in AI, including deep learning deployments, which will be crucial for the edge, from the data centre to the network's core and devices.



Jennifer Majernik Huffstetler
VP, GM, Datacenter Product Marketing, Product Mgmt & Storage, Intel

With Intel since 1999, Huffstetler has been a key figure within the group's data centre works. She's behind the company's most recent edge efforts, including the expansion of the Xeon processor family to cope with edge power requirements.



John Krafcik
CEO, Waymo

Krafcik is one of the brightest minds in the auto space and a key figure in the driverless car scene pushing for edge firms to come forward with new solutions to support its developments in the field. At Waymo, an Alphabet company, he is working with his team to build the world's most experienced driver: the car itself powered by onboard edge computing systems and surrounding infrastructure.



John Roese
CTO, Dell EMC & Chairman, CloudFoundry

Roese leads Dell EMC's hardware and platform engineering, telecom and xSP research and development as well as advanced innovation. He is also responsible for shaping the company's technology strategy across Cloud, Big Data and Trusted IT. At CloudFoundry, he oversees the works of thousands of developers worldwide, which while using open source are working on the building blocks of the edge economy.



Jonathan Mauck
Managing Director, Digital Bridge

Mauck has over 20 years of experience working as an entrepreneur, advisor and investor in the technology and communications infrastructure sectors. He serves as MD at edge-leading investor Digital Bridge and is also the Chief Investment Officer for the data centre platform. He is also a Board Member and Chief Investment Officer for DataBank, a provider of edge data centre solutions.



Josh Snowhorn
Founder & Chief Strategy Officer, EdgeMicro

With nearly 20 years of experience, Snowhorn has been one of the most influential names in the 'near-to-the-source' computing space. Former CyrusOne, he's the founder of mobile edge colocation company EdgeMicro and also a board member of the Global Peering Forum.



Karthik Suri
Chief Operating Officer Predix, GE Digital

Suri is an all-round executive who has worked at some of the world's leading brands including eBay, PayPal and Yahoo!. He is today one of the main revolutionisers at GE, helping to drive the company's edge computing portfolio forward with Predix, GE's cloud-based platform (PaaS) for Industrial Internet applications, which combines people, machines, big data and analytics. Suri is also a steering committee member of the Industrial Internet Consortium.



Kevin Brown
SVP Innovation and CTO, IT Division, Schneider Electric

Brown is responsible for driving innovation and managing the R&D portfolio for Schneider Electric's IT Division as well as driving the company's overall portfolio strategy for the data centre market. He is behind the brand's biggest push in edge data centres and is also an avid industry thought leader on the topic.

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Kim Polese
Chairman of the Board, CrowdSmart

Polese is one of Silicon Valley's top executives. She has built a strong career over the years in technology and is now chairwoman of the board at investment company CrowdSmart. The firm has invested in several startups led by Polese, including Syntiant, which combines deep semiconductor expertise with the latest machine learning advances to move machine learning from the cloud to the edge device.



Laila Worrell
COO, Aricent

New York-based Worrell is one of the key voices at Aricent, a design and engineering company in 5G, mobile access, core networks, edge computing and data centres. She is responsible for the company's strategy, technology, and operations. She previously served as Partner and Managing Director, Principal Investing and Private Equity, at the Boston Consulting Group.



Lee Hetherington
Edge Strategy, Facebook

Working for the world's largest social media platform with more than 2 billion users, Hetherington is a crucial team member of Facebook who is responsible for the company's Edge and Caching strategy in EMEA for the Global IP Network and CDN.



Lee Kok Sun
Chief Investment Officer, GIC Real Estate

GIC is a global long-term investor with well over \$100bn in assets. Sun has played an important role in taking the company into the edge computing space by helping to guide the creation of a \$2bn fund for the setting up of EdgeCore Internet Real Estate, LLC, in what has become one of the largest edge computing investments to date.



Lew Tucker
VP and CTO, Cloud Computing, Cisco

Tucker is responsible for helping to shape the future of cloud and enterprise software strategies on the global stage. He has more than 20 years of experience in the high-tech industry, ranging from distributed edge systems and AI to software development and systems architecture.



Lior Fite
CEO & Founder, Saguna Networks

With 25 years of experience, Fite has spent the last ten at the helm of Saguna Networks, a company he founded to speed up connectivity in multi-access edge computing using smart NFV software solutions. The firm has established itself as a leader in the edge computing market and has worked with both AWS and HPE on edge solutions.



Maggie Buggie
SVP, Global Head of SAP Leonardo Services, SAP

London-based Buggie leads SAP's efforts within the edge computing framework. The German software multinational's Edge Services and the edge platform component of the SAP Cloud Platform together make up SAP Leonardo IoT Edge, an end-to-end solution for IoT edge computing.



Marc Rouanne
President of Mobile Networks, Nokia

Rouanne has over 20 years of international management experience in the telecommunications industry, having held positions in R&D, customer operations and product management in the US, France and Finland. He today leads Nokia's investment in new technologies including deployments for edge environments.

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Martin Fink
CTO, Western Digital

Fink, a former HPE executive, leads Western Digital's technology innovation agenda as the company continues to transform its business and expand its capabilities and technology portfolio. He is one of the main revolutionaries in edge computing and open source technologies and bringing those movements into Western Digital.



Martin Olsen
VP global edge and integrated solutions, Vertiv

Olsen's focus is on strategy to deliver integrated physical infrastructure, deployment services, management and orchestration to support cloud computing at the edge of the network using Vertiv solutions. He has held leadership roles in infrastructure technology companies in the US, Germany, Singapore and Denmark.



Mike McBride
Sr Director of Innovation & Strategy, Huawei Technologies

Based in Orange County, California, McBride is a well-known name within the IoT space and has in recent years also become an important edge figure in the industry. Regular keynote speaker, he provides edge computing and future network research and standardisation within the IETF, IIC, and BBF.



Nitu Kaushal
Head of IoT UK Sales, Vodafone Global Enterprise

Kaushal is a strategic leader with over 16 years of Telecoms experience, specialising in Product Management for Cloud, Unified Communications, Connectivity, Managed Services and IoT based products. She has been with Vodafone since 2014 and has held different roles over the years, including heading IoT product management, transformation and cloud and hosting portfolio.



Phill Lawson-Shanks
Chief Innovation Officer, EdgeConneX

Lawson-Shanks has been at the forefront of designing and deploying industry leading solutions in both the UK and the US for over 25 years. At EdgeConneX, he is one of the company's main faces and has asserted his name on the global edge thought leadership page with unbeatable knowledge of the subject.



Rhonda Dirvin
Director, IoT and Embedded, ARM

Dirvin is an electronics-industry veteran and a fount of knowledge in edge computing. She is a board director of the OpenFog Consortium, assembled to promote the development and deployment of fog computing technologies in an open architecture fashion. At ARM, she has helped put the semiconductor company at heart of the edge computing movement through astute marketing and strategy.



Rick Clemmer
CEO, NXP Semiconductors

All-round executive Clemmer has worked in the semiconductor space for over 30 years. He is today leading NXP's efforts at the edge which include work around containers and EdgeScale, a unified and scalable device management solution for edge applications that enables OEMs and developers to leverage cloud compute frameworks like AWS Greengrass, Azure IoT and Aliyun on NXP's Layerscape devices.



Robert High
IBM Fellow, VP, CTO Watson, IBM Academy of Technology, IBM

High has 37 years of programming experience and has worked with distributed, object oriented, component-based transaction monitors for the last 26 years. At IBM, he has overall responsibility to drive Watson – a powerful AI tool that is also helping make sense of data at the edge – technical strategy and thought leadership.

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Satyen Yadav
GM – IoT Devices, Edge Computing, & Machine Learning at Edge Services, AWS

In his more than 20 years of experience, Yadav has led many business transformations with demonstrated success in identifying new opportunities, launching innovative products and services, and driving business growth. At AWS, he leads the global product, engineering, and P&L for the IoT, IIoT Devices and Edge Computing and Machine Learning at the Edge businesses.



Scott Guthrie
EVP, Microsoft Cloud & AI Group

Guthrie is one of key figures at Microsoft within its cloud business. He is responsible for the company's computing fabric (cloud and edge, including cloud infrastructure, server, database, CRM, ERP, management) and AI platform (infrastructure, runtimes, frameworks, tools and higher-level services around perception, knowledge and cognition).



Serge Willenegger
SVP, GM 4G/5G & Industrial IoT, Qualcomm

Connectivity power at the edge will be fundamental to its proliferation and Serge is one of the industry leaders making it happen. He leads Qualcomm's play in 4G and transition to 5G and the whole IOT ecosystem that comes with it. Serge has helped to launch Qualcomm's Wireless Edge Services designed to assist users in provisioning and managing massive amounts of connected devices.



Sharif Fotouh
Founder/CEO, Compass EdgePoint

Data centre and telecommunications expert, Fotouh, and ex-Gogler, is a well known name within the sector for his knowledge and experience which spans more than ten years. More recently he has founded edge computing company EdgePoint, which was acquired by Compass Datacenters in February 2018.



Tobias Knaup
Co-Founder & CTO, Mesosphere

From San Francisco to the world, Knaup has helped to build Mesosphere, a platform designed to unify public and private clouds into a single pool of resources which helps in making edge frameworks clearer and easier to manage. He is an experienced Software Engineer focusing on large scale systems and machine learning. Knaup also helped scale Airbnb to millions of users worldwide as technical lead.



Tom Ray
Chairman & CEO, EdgeCore Internet Real Estate

Denver-based Ray is a co-founder of EdgeCore and has experience in institutional real estate exceeding \$10bn in value, including over \$5bn in the data centre industry. Ray has helped set up the company to answer demand for hosting power closer to the user.



Toshihisa Adachi
President & CEO, Global IoT Technology Ventures

Operating in the finance and investment space, Adachi has more than 15 years of experience as venture capital partner, with expertise in IT and software services. He has been involved in the works of funding edge computing companies worldwide, including AI deep learning Japanese startup LeapMind.



Trent Vichie
Co-Founder & Co-CEO, Stonepeak Infrastructure Partners

New York-based Vichie has 20 years of experience investing in infrastructure. He has led investments in North American edge players including Vertical Bridge, Cologix and euNetworks. Vichie presently also sits on the boards of the Carlsbad Desalination Project, Cologix, euNetworks, Extenet Systems and Vertical Bridge.

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EDGE 50 ...from previous page



Vlad Friedman
CTO, DataBank

Friedman is a seasoned IT veteran with over 25 years of mission-critical IT experience. He joined DataBank as CTO in September 2017 with the acquisition of Edge Hosting. In his role as DataBank's CTO, Friedman guides the direction for development, implementation and management of the company's overall technology strategies.



Willem Hendrickx
CEO & Co-Founder, GiG Tech

Living in Antwerp, Hendrickx has over 20 years of experience in executive roles at global ICT firms. He has created the world's first company – GIG Tech – that builds a private, neutral and green Internet based on its edge computing operating system and software architecture.



Yuval Bachar
Principal Engineer, Data Center Architecture, LinkedIn & President and Chairman of the Board, Open19 Foundation

San Francisco-based Bachar has 30 years of experience in helping build the internet, data centres and edge industries. He is the chairman of the board at the Open19 Foundation, a non-profit hardware and software sharing community for data centre and edge solutions which has helped deliver many of the breakthrough technologies being used in the edge field.

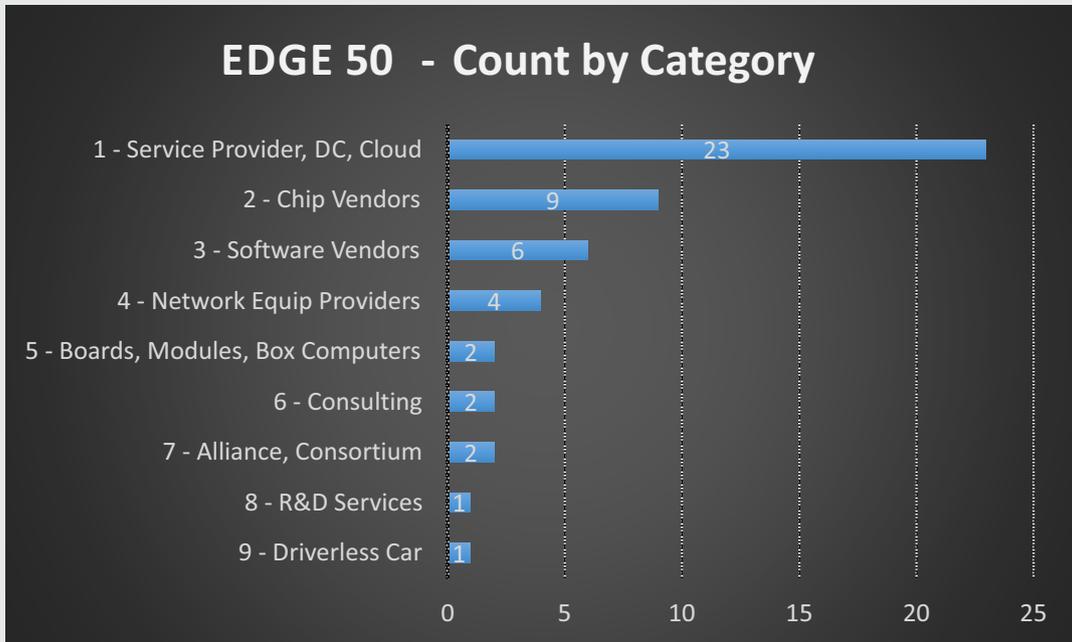
Editor Note
What are those EDGE 50 doing?

By: Daniel Dierickx, e2mos www.e2mos.com



What is the activity and market segment of those world's first top 50 edge computing influencers?

We have tried to make a list of expertise categories based-on the profile of those influencers, just as a simple approach, anyhow fact.



Conclusions

Please be careful with your conclusions and remember this is for Edge Computing, categories may be a little bit relative and the ranking is not always a direct relation of the total business of the category, of course. It could be very different in years to come.

Here some observations:

- Service Providers and related (1) dominates
- Chip Vendors (2) very strong number 2, not a surprise to me (I have 30+ years Semiconductor Business Expertise)
- Out of the only two native Boards Vendor is Angelo Corsaro CTO **ADLINK Technology** (see page 10)

More about ADLINK Technology: Click Here <https://www.adlinktech.com/en/index.aspx>

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The IoT Ushers in a Healthcare Industry Revolution

Introducing IoT as a platform and concept has redefined the machine-to-human (M2H) interaction for efficient healthcare facilities—and increased the vulnerability to hackers.

Ananya Bhandari | Jan 23, 2019

As we all know, the Internet of Things (IoT) is a connected network of devices, wherein the devices are connected to each other and to the internet with the help of wireless technology. These devices are rooted with sensors, actuators, electronics, and software solutions, which enables these connected devices to deliver experience in real time.

When we talk about IoT, people often get confused with the term machine-to-machine (M2M) communication. M2M communication and IoT is essentially based on the same concept, i.e., communicating or exchanging data with another machine/device without any human intervention/interfaces. Technically, though, IoT and M2M are two different concepts.

The most important element that the companies should focus on before implementing IoT or M2M concerns their business model, specifically the need to provide add-on value to its customer. Before investing in any such technologies, the companies should think about its effectiveness in its business.

Comparing IoT and M2M		
Factors	IoT	M2M
Communication	Machines/devices communicate among them through an IP network, including various communication protocols	Machines/devices communicate among them using point-to-point communication embedded within the hardware at the site
Data delivery	Data delivery through a middle layer hosted in the cloud	Data delivery relies heavily on cellular or wired networks
Connectivity	Machines/devices rely heavily on an active internet connectivity	Machines/devices don't necessarily rely on internet connectivity

The Impact of IoT in Smart Devices

The rate of IoT implementation is growing exponentially. Based on the estimates from Intel research, it's expected that nearly 200 billion devices will be connected by 2020, up from 15 billion in 2015—nearly a 1233% increase. On a global scale, 200 billion connected devices approximately equate to 26 smart devices per person. The surge in adoption of smartphones or any smart devices is one of the key factors depicting the level of awareness regarding connected applications.

- According to statistics published in industry journals, over 25.3% of the global population was reported to use smartphones in 2015, which rose to 33.3% in 2017.
- According to the industry estimates in 2014, the number of mHealth apps on the two leading operating platforms, Android and iOS, had reportedly reached over 100,000 in last 2.5 years.
- Based on the industry data, it's reported that Western Europe, North America, and the Middle East and Africa have a smartphone penetration rate of over 65%, 64%, and 13.6% of their total population, respectively.

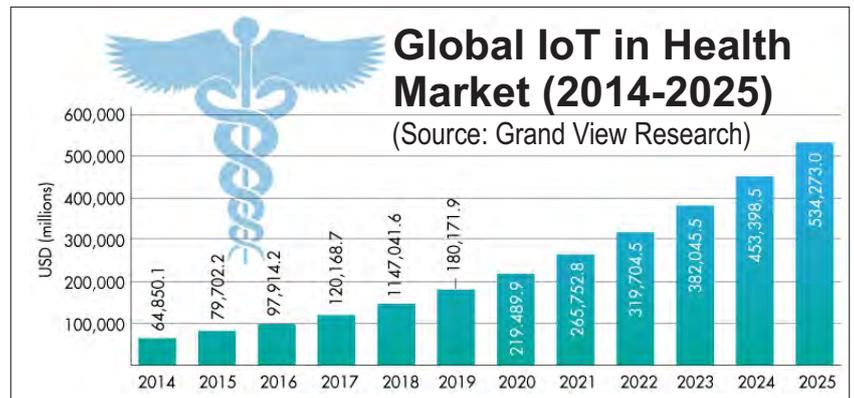
IoT Technology Trends for Healthcare

Growing demand for connected health services to improve the quality of care and surge in adoption of connected medical devices and smartphones are a few factors that have significantly contributed to the technological advances in IoT healthcare. The penetration of these technologies, such as remote disease management, telemedicine, and Health Management Information Systems (HMIS), is expected to expand the scope of IoT in the healthcare industry. In addition, demand for the first-generation smart devices is impacting IoT's penetration into the healthcare industry.

According to Grand View Research estimates, the IoT in the healthcare market was valued at approximately \$98 billion (USD) in 2016. IoT in healthcare involves wireless communication systems of devices and applications to connect patients and healthcare providers to track, diagnose, monitor, and store the vital statistics and medical information.

Chart global healthcare market

Increasing demand for immediate medical attention during medical emergencies and natural disasters, which has boosted the adoption of wearable medical devices, drives the demand for real-time medical intervention. Furthermore, IoT in healthcare is also used to constantly monitor clinical measurements such as blood pressure and glucose, as well as track any movements, medication doses, and real-time home-care treatment.



Various top IT players operating in this space have entered the IoT healthcare market through acquisitions and collaborations with healthcare companies. For instance, IBM collaborated with Medtronic PLC to provide IoT services. Such technologies that are used to monitor and track the quality of care are key factors expected to impact the use of these products.

According to Grand View Research analysis, the market is oligopolistic in nature with **few participants dominating the IoT in the healthcare market**, namely Microsoft, Philips, Cisco, Cerner, and IBM. These companies have adopted various strategies to gain larger market share: acquire a smaller firm with technical expertise, increase R&D investments, and boost collaborative research initiatives. IBM announced an investment of \$3 billion (USD) in IoT in 2015. In April 2018, Microsoft announced it will invest \$5 billion (USD) in IoT over the coming four years.

Ongoing IoT Developments for Healthcare Industry

IoT implementation in hospitals can significantly reduce the wait times in emergency rooms. For instance, Mt. Sinai Medical Center in New York City partnered with GE Healthcare in 2013 to develop IoT-driven software called AutoBed. This software can process up to 80 bed requests, track occupancy for 1,200 beds, and track basic patient information, such as nurse proximity. This development had reduced the wait time by 50% in the emergency department of Mt. Sinai Medical Center. Similarly, in 2015, TeleTracking Technologies Inc. also announced a collaboration with GE Healthcare to design an integrated operational platform to reduce waste, improve care delivery, and optimize hospital operations.

Moreover, Philips developed an IoT-driven solution, called e-Alert, in collaboration with OpenMarket, to ensure the accessibility and availability of critical medical hardware. In 2017, Philips received a "most innovative IoT solution" award for its e-Alert system. In 2010, the company also introduced a medical alert service, called Lifeline with AutoAlert, targeting independent living senior citizens to detect patient fall. Other developments include closed-loop insulin delivery (OpenAPS), an implantable long-term continuous glucose monitoring (CGM) system, activity trackers, connected inhalers, ingestible sensors, connected contact lenses, the Apple watch app for fighting depression, and Arthritis—Apple's ResearchKit software.

Cognitive IoT: The Next Leap for the Healthcare Industry

What is cognitive computing?

The term cognitive is essentially defined as "thinking." Of course, we're aware of the fact that computers/machines don't yet have the capability to think like human being. However, in this case, we're referring to three terms—understanding, reasoning, and learning.

By understanding, it means the ability to take both structured and unstructured data in its system and establish a model of relationship, concepts, and entities out of it. By reasoning, it means without separately programming for each problem, we can derive a solution from the established model. Similarly, by learning, it means the ability to infer new knowledge from the stored data, both structured and unstructured.

What's the significance of cognitive computing in IoT?

- Applying machine learning is important for scaling the data derived from the connected devices/machine. The huge amount of data generated from these connected devices can easily overwhelm a human's ability to analyze and derive patterns out of it.
- This enables us to move beyond machine interface paradigms, which requires a human to learn specialized interface programs to interact with the device/machine. Cognitive computing enables humans to interact with the IoT using its natural language.
- Integration of multiple data sources and types.

The IoT Ushers in a Healthcare Industry Revolution ... from previous page

In December 2015, IBM announced the opening of global Watson IoT headquarters in Munich, Germany. The company also announced the launch of several new capabilities, offerings, and a different ecosystem of partners to expand the power of cognitive computing to a wide range of connected devices, systems, and sensors. IBM Watson and Microsoft Cognitive Services are among the popular cognitive-computing platforms out there. According to the estimates made by Grand View Research, the global healthcare cognitive-computing market was valued at nearly \$738.5 million (USD) in 2014.

Is the IoT a Threat or Opportunity to the Healthcare Industry?

Capturing patient-generated health data is one of the vital parts of patient records. IoT in healthcare is expected to involve mass participation of end users, which may lead to a variety of new potential risks concerning data privacy and security issues. The escalation in incidences of data privacy and security issues is one of the key factors expected to hinder the growth of IoT in healthcare market.

According to the office of Civil Rights in HHS, there were approximately 199 protected health information (PHI) breaches affecting over 7 million patient records in 2013. Moreover, despite the huge benefits of Electronic Health Records (EHRs), public acceptance of EHR technology has been inhibited due to the risks involving the privacy and security of PHI.

For example, in February 2015, the Anthem company was hacked, and the attack exposed over 80 million patients' PHI. According to various reports, the cases of data breach in the U.S. have increased from approximately 13 in 2008 to over 256 in 2013. As a result, incidences of privacy breaches increased from around 0.5 million to over 9 million in 2014.

However, growing government intervention against healthcare cyberattacks or crimes is one factor that's looked at as helping to boost the adoption of IoT in various healthcare applications. Other potentially key growth factors for IoT healthcare include the presence of designed information security, privacy, and data-protection authority.

Since 2006, the U.S. government has spent over 100 billion on the development of cybersecurity infrastructure. Furthermore, for the fiscal year 2016, the President's budget proposed \$14 billion (USD) to fund cybersecurity research and critical initiatives. The budget was allocated as follows:

- Securing federal networks: \$582 million for the U.S. Department of Homeland Security (DHS) to implement the Continuous Diagnostics & Mitigation (CDM) program.
- Outreach to private sector: \$149 million to support R&D at civilian agencies for innovative cybersecurity technologies.
- National security and cyber threats: \$514 million for the Department of Justice to investigate cyber intrusions that pose serious threats to national security and economic stability, as well as to prosecute the offenders.
- \$160 million for information technology and cybersecurity of the weapons program at the Energy Department's National Nuclear Security Administration.
- Supporting long-term cyber investments: The budget also provided for long-term structural investments in cybersecurity that include:
 - \$227 million to fund the Federal Civilian Cyber Campus. The campus will bring together the operational cyber missions of the FBI and DHSW to improve collaboration among them as well as enhance the ability to collaborate with the private industry and external partners.
 - The U.S. government formed the Cyber Threat Intelligence Integration Center in 2015 and allocated a budget of \$35 million to respond against cybersecurity threats.

Cybersecurity Management and IoT Innovations Must Run Hand in Hand

Organizations in a state of readiness regarding cybercrime activities would enable them to act in a way the cybercriminal would never expect. It's impossible to predict any such attack, but it's possible to reduce its attractiveness as a target.

Designing cyber-threat intelligence strategies, using forensic data analytics and data-threat intelligence for each business activity, and extend cybersecurity ecosystems to suppliers, partners, and business networks are some of the factors that can expand an organization's capabilities to deal with these cyberattacks. Following the leading cybersecurity approaches and aligning them with business objectives can help impede cybercrime activities, too. Organizations should start positioning security as a business enabler, not as an obligatory cost. Such a step could ultimately make the IoT ecosystem risk-free for each and every organization.



About the Author

Ananya Bhandari is Research Analyst, Medical Devices and Healthcare IT, at [Grand View Research](#)

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