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IoT World

Internet of Things from A to Z
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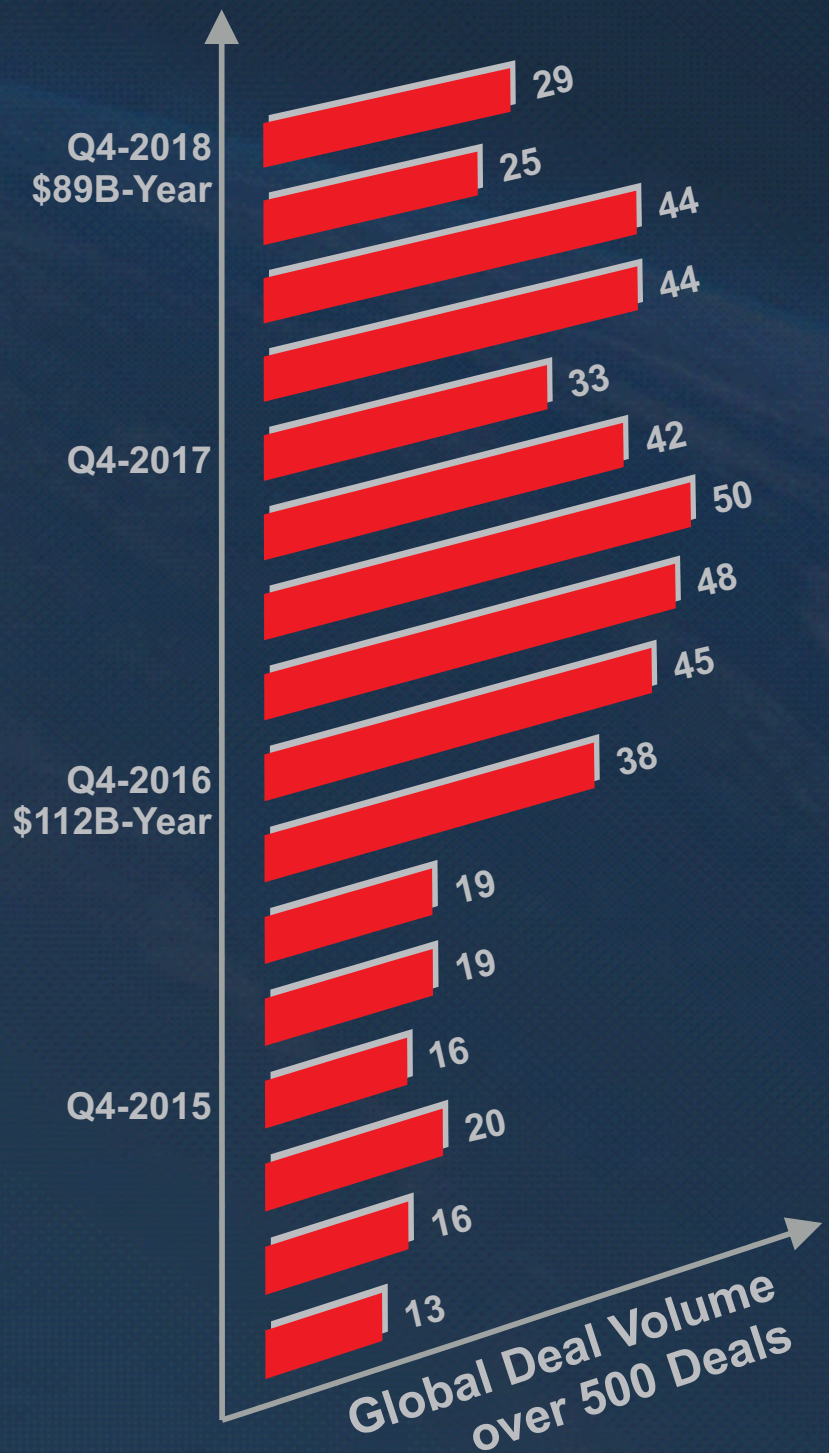
Software - WEB Services - Cloud - Service Providers
IoT & M2M Customer Applications - Market Worldwide

IoT World is a Global Publication of e2mos

Mar-Apr 2019

IoT M&A Activity enters death spiral
The land-grab is over

By: RIOT RESEARCH



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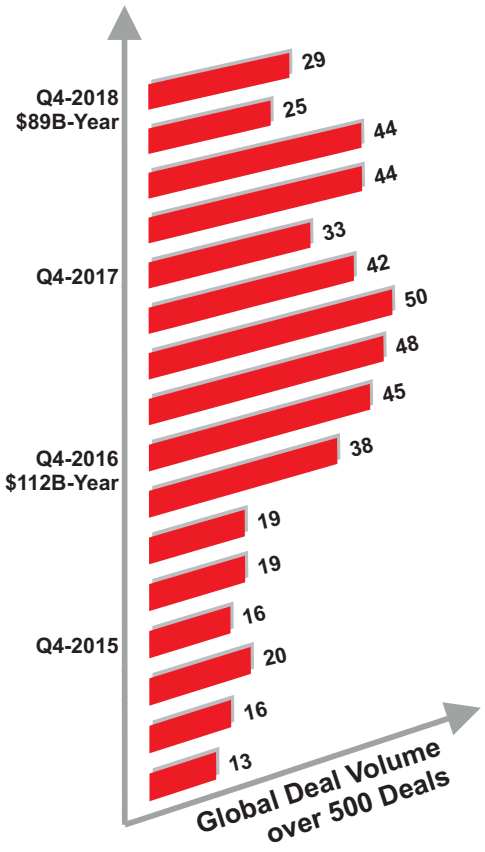

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Microsoft

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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 Partners with Google Cloud to Offer IoT Ready Solutions

Offerings enable intelligent decision-making with Edge Computing and real-time connectivity to Google Cloud

San Jose, California |07-Mar-2019

ADLINK Technology, a global provider of leading Edge Computing solutions, has partnered with Google Cloud to integrate ADLINK's hardware and software solutions with Google Cloud IoT offerings, providing customers with an easy path to added business value by harnessing and analyzing critical operational data.

"Companies are seeking hardware solutions that are pre-integrated with Google Cloud IoT," explained Mario Finocchiaro, Head of GTM, Google Cloud IoT. "Partnering with ADLINK gives our customers and partners options for IoT devices and data sources ready to use out of the box."

Google Cloud is a suite of cloud computing services that runs on the same infrastructure that Google uses internally for its end-user products. Customers can use insight from GCP analytics tools including advanced analytics, AI and machine learning to make informed decisions to optimize operations, enable predictive maintenance, minimize downtime, improve quality and enable the development of new business models and revenue streams.

ADLINK's contribution of integrated hardware and software also includes ADLINK Edge™ services to channel operational data and enable intelligent decision-making by streaming to Google Cloud for deeper insight. With no programming necessary, ADLINK Edge™ quickly connects previously unconnected operational equipment and sensors. By tapping into native communication protocols, data can be captured and streamed at the edge and securely between devices, databases and to GCP, enabling analysis and easy visualization to inform business decisions and optimize operations.

"Because our area of expertise is at the edge, it's important for us to work with cloud computing experts, such as Google Cloud, to provide the best end-to-end IoT solutions in the industry," said Lawrence Ross, GM of ADLINK Software and Solutions. "We're also excited to bring GCP's scale and best-in-class security to our Digital Experiment offering, which is essentially a starting point for a customer's IoT journey."

For more information on ADLINK's Edge IoT offerings with Google Cloud, visit https://www.adlinktech.com/en/Google-Cloud.aspx.

Paessler and Sigfox Announce Partnership to Accelerate Adoption of the Internet of Things

PRTG Network Monitor Provides Real-time Visibility of the IT Infrastructure Associated with Sigfox's Dedicated Network that Radically Decreases the Costs and Energy Consumption Associated with the Iot

Paessler AG, the innovative network monitoring specialist, and Sigfox, the world's leading provider of connectivity for the internet of things (IoT), today unveiled a partnership to help their customers more effectively monitor and manage their critical IT infrastructure and manifold further assets. As part of the partnership, Paessler delivered their PRTG Network Monitor for IoT solutions that will monitor and visualize the functionality and measurement data from Sigfox-enabled IT infrastructure sensors, as well as from other objects, devices and machines that are equipped with or have adaptive Sigfox connectivity.

Sigfox's network is designed to connect billions of devices to the Internet via its Low Power Wide Area Network (LPWAN) and its Sigfox Cloud services, while dramatically decreasing the cost and complexity of the systems involved. Using a unique approach to wireless connectivity that draws on a highly reliable and interference resistant Ultra-Narrow Band frequency to provide an exceptionally wide range while simultaneously requiring very little power, Sigfox has radically altered the economics associated with the internet of things.

The company's network ecosystem delivers the technology and protocols as well as the entire wireless network required for objects to share their information from anywhere in the world through inexpensive sensor connectivity that requires very little silicon and utilizes very little battery power – or alternatively no batteries at all – while harnessing low levels of energy generated by solar and wind power, as well as electromagnetic waves. Expected to be available in 60 countries by the end of 2018, the network reflects Sigfox's vision to 'make things come alive.'

"Our network solves the issues of cost, energy consumption and complexity that serve as barriers to the widespread adoption of the internet of things," said Vincent Sabot, CEO Sigfox Germany. "Our customers can virtually eliminate the overhead associated with connectivity, including the costs of the smart sensors and objects themselves. And with Paessler, our customers gain a single dashboard from which to monitor the connected devices and sensors that comprise their internet of things."

"Sigfox is enabling organizations across many industries, including those associated with supply chains, smart cities, manufacturing and automation of all kinds, to realize the promise of the internet of things.

As a result, the very notion of the network's edge has become fluid, while simultaneously making it more important than ever for sysadmins and IT to know what is happening at all times."

Christian Zeh, Senior Manager New Technologies and Markets

Available in both hosted and on premise versions, Paessler's PRTG Network Monitor is a highly flexible, all-in-one network monitoring solution that enables IT teams and system administrators, as well as IoT and IIoT teams and integrators, to see exactly what is happening in real time across their IT infrastructure, including networks, systems, hardware, applications and devices. The solution leverages two methods to initiate Sigfox messages to the PRTG Network Monitor about functionality or measurement data from sensors and devices: callback, where data is sent immediately to PRTG via push, and API, where PRTG requests data in predefined intervals from Sigfox connected devices. Highly customizable dashboards can be configured to show exactly what is important, from the overall health of the network, to granular details like the speed of fans in particular servers.

Relied on by more than 200,000 system administrators, PRTG generates alerts or notifications whenever any pre-determined performance thresholds of the user's choosing are met - ensuring that IT is always the first to know when a problem arises. This includes SMS and email messages, as well as the ability to automatically launch applications that provide a fix.

"Sigfox is enabling organizations across many industries, including those associated with supply chains, smart cities, manufacturing and automation of all kinds, to realize the promise of the internet of things," said Christian Zeh, senior manager new technologies and markets. "As a result, the very notion of the network's edge has become fluid, while simultaneously making it more important than ever for sysadmins and IT to know what is happening at all times."

As part of the collaboration between both companies, Paessler is also actively participating in the Sigfox Partner Network, while Sigfox is contributing to Paessler's Uptime Alliance, a partner program designed to help technology providers include network monitoring functionality in their offerings through their seamless integration with PRTG. In this way, vendors can provide their clients with a turnkey, out of the box way to prevent the downtime on IoT networks.

VISIT US: https://www.paessler.com/

expresslogic

Microsoft

Express Logic Joins Microsoft!!

San Diego, CA, APRIL 18, 2018

To our highly valued customers and partners,

Express Logic has spent the last 23 years providing Industrial Grade RTOS and middleware software solutions for embedded and IoT developers. Our solutions have been optimized to help our embedded and IoT customers get to market faster and more successfully. We believe in simplicity, safety, security, and world class customer and partner support. As a result, our ThreadX RTOS has achieved over 6.2 Billion embedded and IoT deployments and enjoys industry recognition as a premier solution for resource constrained environments, especially those that require safety and security.

Today, we are very excited to share that Express Logic has been acquired by Microsoft. Effective immediately, our ThreadX RTOS and supporting software technology, as well as our talented engineering staff join Microsoft. This complements Microsoft's existing premier security offering in the microcontroller space.

We are thankful and humbled by our customers' loyalty and support. The significant growth of the IoT provides exciting new opportunities for our customers and the embedded market overall. Now as part of Microsoft, we believe our customers will be even better positioned to unlock exciting new capabilities of the IoT.

For more on this news, you can read this post from Microsoft.

We look forward to continuing our efforts to help simplify embedded IoT development and continuing to build customer loyalty by helping our customers get to market quicker with solutions that are simple, safe, secure and that can take full advantage of the IoT.

Please reach out to me or your existing sales and support team at Express Logic in case of questions.

Warm regards,
William E. Lamie, CEO Express Logic

Express Logic's X-Ware IoT Platform™ Crypto Library Achieves FIPS 140-2 Certification

San Diego, CA — March 13, 2019 -- Express Logic today announced that thanks to its collaboration with one of the world's leading security labs, atsec information security, its industrial-grade X-Ware IoT Platform NetX™ Crypto library has achieved Federal Information Processing Standards (FIPS) 140-2 cryptographic certification. The certification authority for this effort, the National Institute of Standards and Technology (NIST), issued the FIPS 140 Publication Series in May 2001 to align the requirements and standards for cryptography modules that include both hardware and software components.

FIPS 140-2 was instituted to protect sensitive or valuable U.S. government data, and data from commercial industries such as financial and health-care institutions that is collected, stored, shared, and disseminated electronically.

With billions of devices expected to be on the IoT by 2020, security has become the primary concern of the embedded industry. To address this concern, Express Logic has established itself as the safety and security leader in the embedded IoT space with its industrial-grade approach, including pre-certification to SIL 4 and ASIL D safety standards and EAL4+ security common criteria certification for X-Ware IoT Secure Connectivity (SC), TLS/DTLS, and IPsec security protocols and standards. The FIPS 140-2 certification effort represents another significant step forward in focusing directly on IoT security needs of the embedded industry.

Industrial-Grade Performance, Connectivity, and More

The X-Ware IoT Platform powered by the popular ThreadX® RTOS, with over 6.2 billion deployments, is more than just an RTOS with connectivity capabilities. In addition to the ThreadX RTOS and NetX Duo™, the X-Ware IoT Platform includes the safety-certified FileX® embedded FAT-32/exFAT file system, the GUIX® GUI development and embedded runtime framework, and the USBX® embedded host/device USB stack. This enables embedded developers to leverage the entire X-Ware IoT Platform solution to solve IoT applications that need to do more than just communicate with other devices and/or networks.

"Security is a major concern in the embedded IoT community, and at the same time, securing the IoT is technically very challenging for embedded developers," said William E. Lamie, President, Express Logic. "This X-Ware IoT Platform FIPS 140-2 certification helps our customers meet stringent government security requirements, thus improving time-to-market and greatly improving the security profile of their device."

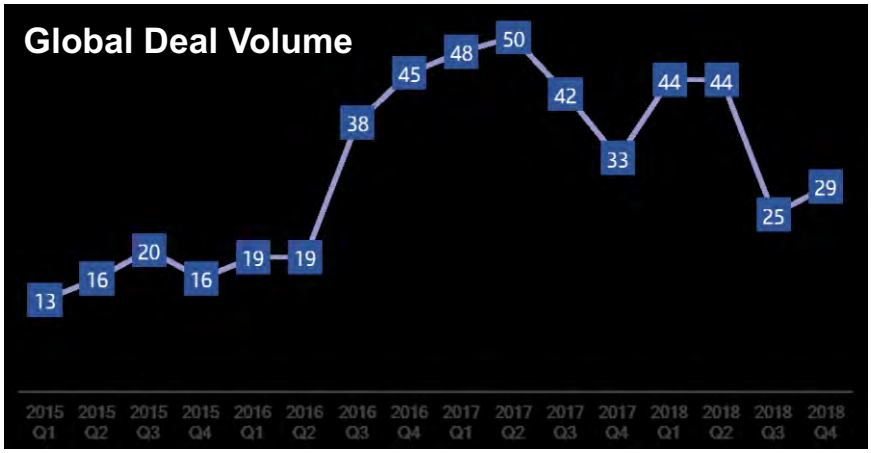
IoT M&A Activity begins death spiral as enterprise, industry, wakes up

M&A Activity in the IoT Marketplace - REPORT

A declining number of transactions, at lower prices, means that many IoT businesses have missed the boat if they are hell bent on mergers. If people were waiting for deal prices to fall, then perhaps the time to move is now.

During 2018 some $89 billion was spent on mergers in the IoT sector, down some $23 billion from the record breaking 2016 when deals worth $112.5 billion were completed. This is mostly because all the massive monster deals for semiconductor players, have already happened.

This is shown in our new Riot Report: "IoT M&A Activity enters death spiral. The land-grab is over" out this week from Rethink Technology Research's Riot (Rethink IoT). The entire service, including this report is available now starting at $1,850. This report includes a full spreadsheet with all 501 deal we have tracked since 2015, which relate to some aspect of IoT.



Companies mentioned in this report: ARM, AWS, BlackBerry, CB Insight, Clarion, Cloudera, Cylance, E.ON, Faurecia, Grab, Google, Hitachi, Hortonworks, IBM, IDT, Innogy, Microchip, Microsemi, Microsoft, Motorola Solutions, MuleSoft, Peugeot, PillPack, PwC, Red Hat, Renesas, Reuters, Ring, RWE, Salesforce, SoftBank, Uber

Report Executive Summary

Introduction

The past year saw just under $89bn spent on M&A in the IoT sector, a departure from the loft heights of 2016's $112.5bn and 2017's $102.4bn. The $13.5bn drop in spending shows that the era of monster purchases is over, and the smaller total number of deals reinforces this thesis. The land-grab is over, and the IoT trend is now settling into its growth curve, as the largest firms begin adopting technologies in their existing business practices.

This past year was only just saved from total disaster by a monstrous Q4 performance. Of 2018's total $88.9bn spend, $46.7bn of that came in Q4. While Q1 clocked in at a solid $28.5bn, Q2 ($3.8bn) and Q3 ($9.8bn) were distinct low points – with Q2 being the worst performance on record, despite posting 44 deals, which is around double the rate of 2015.

It appears that the industry is cooling off, losing enthusiasm for the pace of IoT acquisitions that fueled 2016 and 2017. This is perhaps because IoT reve-nues have grown more slowly than originally assumed, and the panic to get a placeholder in the market is less severe. We have not shrunk to 2015's vol-ume of transactions, but the industry seems to have woken up to the fact that it is very difficult to buy a winner in the IoT – as it is not a conventional market, and is more of a global trend.
There are a lot of deals being made by companies that you likely will never have heard of – often, we've not heard of them either, so that's not a cause for concern. With many companies in the IoT so reluctant to announce cus-tomer deals, the fruits of these acquisitions aren't always apparent in the fol-lowing quarters, but the IoT is collectively playing the long-game – so it's prudent to wait and see where the market takes these deals.

As a result, venture capital and private equity enthusiasm for the IoT is also waning. Reuters reports that global M&A has hit historic highs, driv-en by a number of media deals, hitting $2.5tn in the 12-months from June 2017 to June 2018. That's an increase of 64% over the previous year, and a height not seen since 2007. Media accounted for $322.5bn of that total, and corporate divestiture was pointed to as a driver. US M&A activity accounted for $1tn, up 82%, while Europe posted $767bn.

This success isn't shared across the IoT world, it appears, and similar trends are apparent in PwC and CB Insight's most recent funding report, and semiconductor M&A has declined again, according to IC Insights – which reports that 2018 activity totaled $23.2bn, down from $28.1bn in 2017, and way down from 2015's record-high $107.3bn.

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IoT M&A Activity begins death spiral as enterprise, industry, wakes up

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Understanding the IoT

The IoT is not so much an industry as it is a driving force for change and technological evolution. IoT technology allows businesses to actually de-ploy the sorts of concepts that were first envisioned decades ago, but now at price-points that make economic sense and can fit inside a business model.

An example of this would be smart metering, or Advanced Metering In-frastructure (AMI). The technical ability to read an electricity meter via radio waves has existed since the 1950s, but thanks to advances in silicon design, the RF and processing hardware required to carry out such a task can be affordably integrated inside a meter at a price that justifies the expenditure via the efficiency benefits it can introduce to the stack.

As such, there are likely going to be entries in this list that do not initially scream IoT, at first glance, but trust us, they are. Riot is the leading source of IoT news on the web, and we have used our experience in writing about the scene to influence what we include in this list.

This is, after all, a non-exhaustive list. We have tried to find and document as many IoT mergers and acquisitions as we can, but believe many will have taken place quietly and without fanfare. If you know of any that we have not included in this list, please let us know.

Similarly, due to the very varied sizes in businesses and divisions being acquired, trying to put a final value on the "entire IoT" is something of a fruitless endeavor. With each person's definition of the IoT differing, reaching a consensus isn't likely, so we haven't made that a priority here.

Just who should read this report and what will it do for them?

This report is aimed at senior management and financial management in among IoT businesses, both software and hardware, major enterprise IoT customers, and investors at the **C suite level, CEO, CFO and CMO and those in charge of mergers and acquisitions and corporate valuation.**

Valuing your own business is always tough, valuing a purchase is tough-er still. We would all buy other companies "for less than they are worth" in a heartbeat, but working out how a merger creates value when you pay full price, is another matter.

Many companies are still trying to adequately address the IoT, and buy-ing rivals is one way to get ahead. To do that you need to know the right price, the right timing and how the two businesses will be valued when they are together.

This report was published in February 2019 and will help you:

- Place a value on any type of IoT company
- See the prices that companies are changing hands for in your market
- Get the timing right for a consolidation move
- Drive merger insights into your management team
- Provide evidence for a transaction so you do not overpay

Mergers may be the right way for you to cover the IoT, but similarly it may be the wrong direction entirely and looking at the landscape in its entirety is the only way to be sure and make a case to your board.

About Rethink Technology Research www.rethinkresearch.biz

Rethink is a thought leader in quadruple play and emerging wireless and IoT technologies. It offers consulting, advisory services, research papers, plus three weekly research services; Wireless Watch, a major influence among wireless operators and equipment makers; Faultline, which tracks disruption in the video ecosystem, and OTT video. Riot Riot focuses on enterprise transformation and disruption, from the combination of IoT technologies with emerging cloud computing and AI applications.

Microsoft Azure

Azure Data Box family meets customers at the edge

Posted on March 26, 2019

Dean Paron, General Manager, Azure Data Box

Today I am pleased to announce the general availability of **Azure Data Box Edge** and the **Azure Data Box Gateway**. You can get these products today in the Azure portal.

Compute at the edge

We've heard your need to bring Azure compute power closer to you – a trend increasingly referred to as edge computing. **Data Box Edge** answers that call and is an on-premises anchor point for Azure. Data Box Edge can be racked alongside your existing enterprise hardware or live in non-traditional environments from factory floors to retail aisles. With Data Box Edge, there's no hardware to buy; you sign up and pay-as-you-go just like any other Azure service and the hardware is included.

This 1U rack-mountable appliance from Microsoft brings you the following:

● **Local Compute** – Run containerized applications at your location. Use these to interact with your local systems or to pre-process your data before it transfers to Azure.

● **Network Storage Gateway** – Automatically transfer data between the local appliance and your Azure Storage account. Data Box Edge caches the hottest data locally and speaks file and object protocols to your on-premises applications.

● **Azure Machine Learning utilizing an Intel Arria 10 FPGA** - Use the on-board Field Programmable Gate Array (FPGA) to accelerate inferencing of your data, then transfer it to the cloud to re-train and improve your models. Learn more about the Azure Machine Learning announcement.

● **Cloud managed** – Easily order your device and manage these capabilities for your fleet from the cloud using the Azure Portal.

Since announcing Preview at Ignite 2018 just a few months ago, it has been amazing to see how our customers across different industries are using Data Box Edge to unlock some innovative scenarios:

Sunrise Technology, a wholly owned division of The Kroger Co., plans to use Data Box Edge to enhance the Retail as a Service (RaaS) platform for Kroger and the retail industry to enable the features announced at NRF 2019: Retail's Big Show, including personalized, never-before-seen shopping experiences like at-shelf product recommendations, guided shopping and more. The live video analytics on Data Box Edge can help store employees identify and address out-of-stocks quickly and enhance their productivity. Such smart experiences will help retailers provide their customers with more personalized, rewarding experiences.

Esri, a leader in location intelligence, is exploring how Data Box Edge can help those responding to disasters in disconnected environments. Data Box Edge will allow teams in the field to collect imagery captured from the air or ground and turn it into actionable information that provides updated maps. The teams in the field can use updated maps to coordinate response efforts even when completely disconnected from the command center. This is critical in improving the response effectiveness in situations like wildfires and hurricanes.

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Microsoft Azure

Azure Data Box family meets customers at the edge

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Data Box Gateway – Hardware not required

Data Box Edge comes with a built-in storage gateway. If you don't need the Data Box Edge hardware or edge compute, then the Data Box Gateway is also available as a standalone virtual appliance that can be deployed anywhere within your infrastructure.

You can provision it in your hypervisor, using either Hyper-V or VMware, and manage it through the Azure Portal. Server message block (SMB) or network file system (NFS) shares will be set up on your local network. Data landing on these shares will automatically upload to your Azure Storage account, supporting Block Blob, Page Blob, or Azure Files. We'll handle the network retries and optimize network bandwidth for you. Multiple network interfaces mean the appliance can either sit on your local network or in a DMZ, giving your systems access to Azure Storage without having to open network connections to Azure.

Whether you use the storage gateway inside of Data Box Edge or deploy the Data Box Gateway virtual appliance, the storage gateway capabilities are the same.

More solutions from the Data Box family

In addition to Data Box Edge and Data Box Gateway, we also offer three sizes of Data Box for offline data transfer:

- Data Box – a ruggedized 100 TB transport appliance
- Data Box Disk – a smaller, more nimble transport option with individual 8 TB disks and up to 40 TB per order
- Data Box Heavy Preview - a bigger version of Data Box that can scale to 1 PB.

All Data Box offline transport products are available to order through the Azure Portal. We ship them to you and then you fill them up and ship them back to our data center for upload and processing. To make Data Box useful for even more customers, we're enabling partners to write directly to Data Box with little required change to their software via our new REST API feature which has just reached general availability – Blob Storage on Data Box!

Get started

Thank you for partnering with us on our journey to bring Azure to the edge. We are excited to see how you use these new products to harness the power of edge computing for your business. Here's how you can get started:

- Order Data Box Edge or the Data Box Gateway today via the Azure portal.
- Review server hardware specs on the Data Box Edge datasheet.

•Learn more about our family of Azure Data Box products.

Renesas restructures, establishes IoT business unit

March 28, 2019 //By Nick Flaherty
eeNEWS Europe

Renesas Electronics is planning a significant restructuring following the completion of its acquisition of IDT on Friday, combining its industrial and general purpose product groups to address the Internet of Things (IoT).

The move will see Dr. Sailesh Chittipeddi, IDT's Chief Technology Officer of IDT, take over as head of the new IoT and Infrastructure Business Unit (IIBU) that will start operation in July. This is being created from the merger of the current Industrial Solution Business Unit (IBU) and Broad-based Solution Business Unit (BBU). The only other product group in Renesas is the Automotive Solution Business Unit (ABU).

This follows the acquistion of Intersil in 2017 for key power management technology. The non-automotive products will be combined with the sensors, connectivity and wireless power expertise of IDT in IIBU. THis makes Dr Chittipeddi the only non-Japanese executive on the board of Renesas, and his remit is to accelerate the generation of synergies between digital and analog through consolidation of IBU and BBU as well as IDT's integration.

www.renesas.com

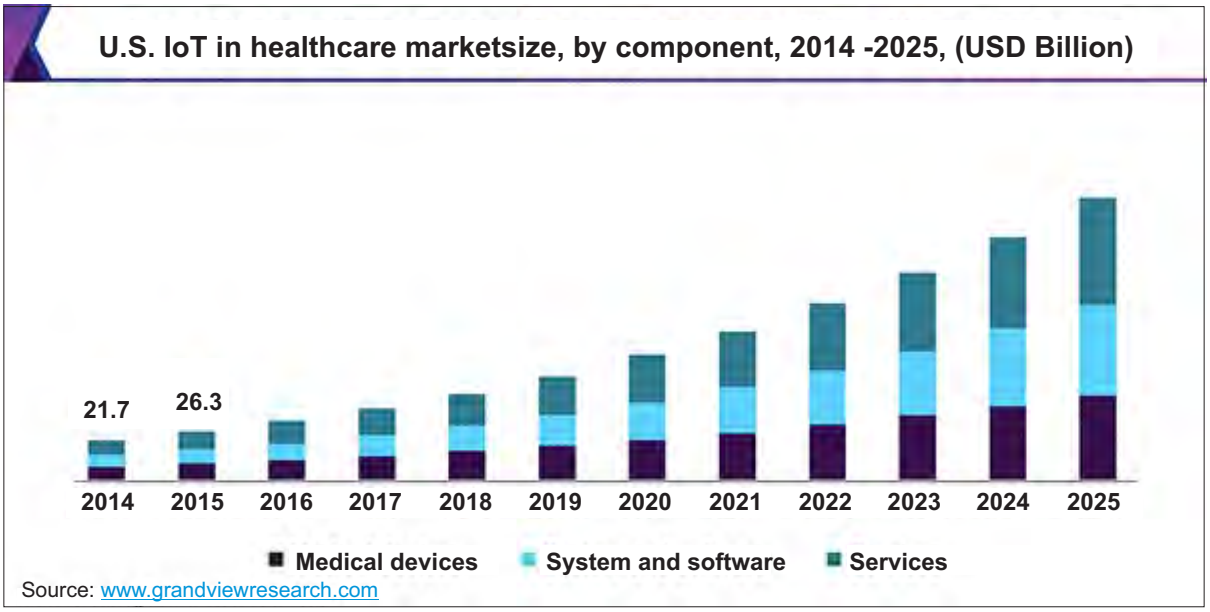
Internet of Things (IoT) in Healthcare Market Size, Share & Trends Analysis Report By Component (Service, System & Software), By Connectivity Technology (Satellite, Cellular), By End Use (CRO, Hospital & Clinic), By Application, And Segment Forecasts, 2019 – 2025

REPORT SUMMARY – Published March 2019

Industry Insights

The global Internet of Things in healthcare market size was valued at USD 147.1 billion in 2018 and is anticipated to witness a CAGR of 19.9% over the forecast period. Rising adoption of wearable technology, investments for implementing digital technologies in healthcare institutions, and emergence of connected care are the key factors boosting the industry growth. Technological advancements and growing geriatric population coupled with rising prevalence of chronic conditions are also positively impacting the market expansion.

According to a research conducted by a network provider company in Aruba, nearly 87% of the healthcare organizations across the globe will adopt IoT services by 2019. Researchers surveyed approximately 3,100 IT enterprises including healthcare and business decision-makers across 20 countries. This study concluded that healthcare institutions have introduced IoT for improving patient monitoring, fostering innovations, and reducing costs.



Source: www.grandviewresearch.com

Component Insights

Services segment held the largest market share of 45.0% in 2018. The segment is further segmented into system integration services, training, and education, support & maintenance, and consulting. Growing demand for uninterrupted data flows boost the efficiency of the medical systems, enhance security, and improve informed decision-making in real-time is the key factor driving the services segment. Medical devices is another major segment, in terms of revenue share.

With the emergence of IoT, dependency on connected medical devices, such as wearable, implantable, and stationary medical devices, for health monitoring has increased. Growing need for connected health services for critically ill patients, overall reduced cost of care, better treatment outcomes, and real-time disease management are some of the factors driving IoT-enabled medical devices market. System and software segment is expected to witness the highest CAGR of 21.2% during the forecast years.

This growth is attributed to technological advancements and increasing investments by the market participants for the development of innovative connected solutions for life science industry. Moreover, rising adoption of digital technologies & connected systems in the health centers will drive the segment further. In the developed economies, the need for managing medical records is rising, which is positively impacting the demand for software solutions.

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Connectivity Technology Insights

Cellular technology emerged as the largest segment. This technology allows to send huge amount of data over a long distance. Cellular networks are increasingly used for medical applications, such as remote patient monitoring as it enables data from devices to be collected and made available to healthcare professionals in real-time. Thus, it is regarded as safer, conducive, and faster connectivity solution for remote monitoring. It also enhances portability, usability, and versatility for connected medical devices.

All these factors help augment the segment growth. Technological advancements in communication and connectivity industry is also driving the connectivity technology segment. Satellite segment is anticipated to witness the fastest CAGR of 23.9% over the forecast period. Rising use of satellite technology in various life science applications, such as management of emergencies, interconnectivity of medical data, and facilitating patient mobility, is driving the segment. Provision of connectivity across the wide areas covering remote locations has further increased the demand for satellite connectivity for various applications, such as telemedicine.

End Use Insights

Hospitals and clinics accounted for the largest revenue share in 2018 and is projected to maintain the dominance in the coming years. Improved functional and operational efficiency gained by hospitals due to IoT is a key factor for its extensive usage. IoT solutions allow improved disease management, patient experience, and treatment outcomes, leading to enhanced care delivery. Moreover, these solutions also help hospitals in the management of inventory, billing, and medical records, real-time communication, medication compliance, and hospital workflows improving the overall operational efficiency.

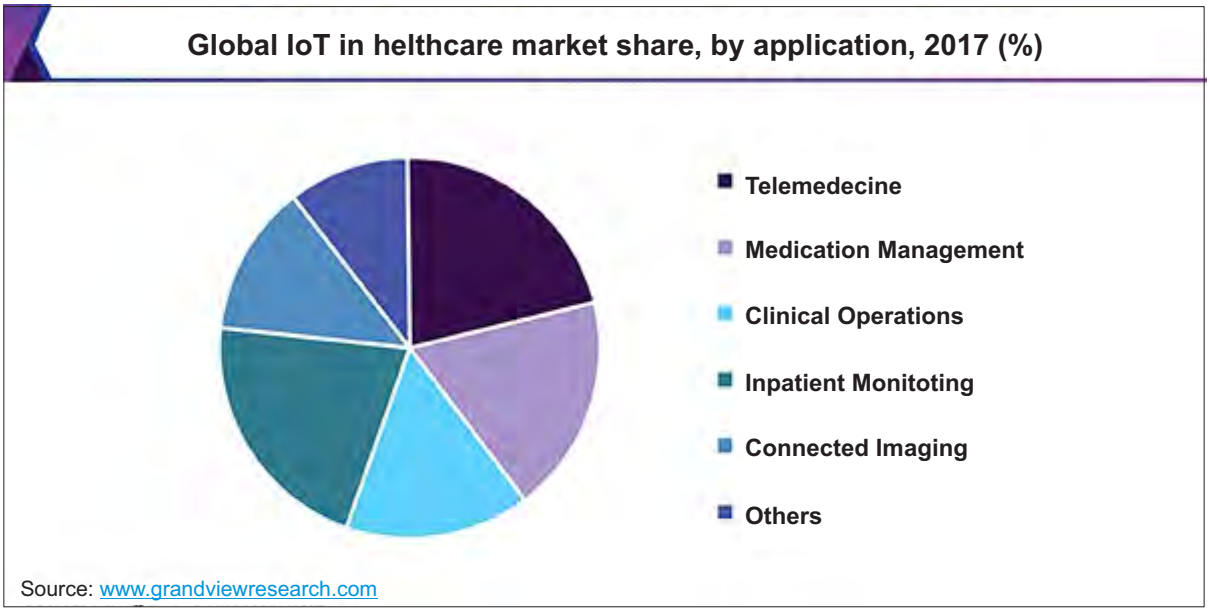
High investment by hospitals for accelerating the adoption of digital technology is also responsible for its largest revenue share. A shifting trend towards value-based care from fee for service in the developed economies is also likely to boost the adoption of IoT solutions in hospitals.

Clinical Research Organizations (CROs) segment is expected to register the highest CAGR of 20.5% over the forecast period. Growing adoption of IoT solutions for improving the accuracy of clinical research is a key factor driving the segment. Extensive usage of these solutions has increased by CROs for improving patient recruitment and retention process, which are the potential issues in clinical research, is also estimated to spur the segment development.

Application Insights

Telemedicine held the largest revenue share in 2018. Growing demand for patient monitoring and rising prevalence of chronic diseases are the factors responsible for the segment's largest revenue share. Recent advancements in telemedicine technology are further driving the demand for IoT solutions. Moreover, rising adoption of smart wearable devices for remote monitoring will contribute to the segment growth.

Key companies focus on the development of innovative telemedicine solutions or devices for enhancing healthcare system. For instance, CareClix provides a wide range of telemedicine and telehealth services through remote consultations and high-definition video examinations. Doctor On Demand; MyTelemedicine; Teladoc; The Bottom Line and iCliniq are some of the major providers of IoT solutions for telemedicine.



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Internet of Things (IoT) in Healthcare Market Size, Share & Trends Analysis Report

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Connectivity Technology Insights (from previous page)

Medication management is also expected to have a significant growth during the forecast years. Wide usage of healthcare information systems, rising need for reducing medication errors while improving patient safety, and increasing adoption of mHealth for medication management are the factors driving the segment. Focus of key firms on developing innovative solution in the area of medication management will boost the market further.

Regional Insight

North America led the market in 2018. The growth is attributed to rising adoption of healthcare IT solutions, presence of key companies, legislative initiatives, such as HITECH Law, 2009, and availability of sophisticated healthcare IT infrastructure in this region.

U.S. accounted for the largest revenue share in North America and is expected to maintain the dominance over the forecast period. Technological advancements and various government initiatives promoting the adoption of digital platforms in life science industry are the key factors contributing to the largest revenue share. There are various initiatives being undertaken for developing eHealth and clinical interoperability, which is also driving the market.

Asia Pacific is expected to emerge as the fastest-growing regional market. Improving health IT infrastructure, rising initiatives for promoting connected health services, and gradually increasing adoption of advanced technologies, such as smart wearables, are the key factors driving the region's growth. Growing investment by the medical device and pharmaceutical companies in this region is also expected to drive the demand for IoT technologies.

IoT in Healthcare Market Share Insights

Microsoft Corp.; Koninklijke Philips N.V.; Cisco Systems, Inc.; IBM Corp.; and Cerner Corp. are some of the major companies in this market. Investments in R&D, collaborations with other industry participants, and service differentiation are the key marketing strategies adopted by these companies. For instance, in 2016, IBM collaborated with Pfizer for developing a system to improve clinical research process for Parkinson's disease.

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