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This report includes research from the ISG Provider Lens™ program, ongoing ISG Research programs, interviews with ISG advisors, briefings with services providers, and analysis of publicly available market information from multiple sources. The data collected for this report represents information that was current as of November 30, 2017. ISG recognizes that mergers and acquisitions have taken place since that time; those changes are not reflected in this report.

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EXECUTIVE SUMMARY

Overall IoT Services

- **Internet of Things (IoT)** is the core of connectivity across networks, systems, data and objects. From industrial assets to everyday things to people, IoT can bring much of the physical world into a connected ecosystem. The key to a successful IoT implementation are setting the right objectives, managing the flow of large amounts of data and capturing the data points necessary for deriving benefits and insights.

- The IoT market has been evolving fast while the adoption rate has been moving at a steady pace. From standalone point solutions to overall end-to-end offerings both for technology providers and business buyers, the IoT market has grown substantially but not as fast as some expectations.

- **Businesses are understanding the potential that an IoT ecosystem can offer.** Companies are becoming more competitive by using different ways to drive business improvement. From improved client experience to better business outcomes, the benefits of IoT are obvious.

- **Businesses are expecting more synoptic potential from an IoT ecosystem but are not conceding security and functionality.** Specific industry-related IoT has been more favorable and profitable as compared to general business solutions that are targeting business transformation.

- **Cost efficiency is important for both the service provider and the buyer when starting an IoT implementation discussion.** The biggest challenge that slows down IoT adoption growth is that program outcomes often have not matched the investments for implementing and adopting an IoT ecosystem.

- **Strong value cases have emerged in some verticals.** The difficulty of generating positive return on investment (ROI) from IoT investments varies by industry. IoT has shown its value in the manufacturing, energy and utility industries. Some of the areas where manufacturers have benefited most include operational process optimization and improved predictive maintenance through planning and an understanding of work patterns. Other key focus areas include connected and smart factories, inventory management and supply chain optimization.

- **More industries and use cases continue to develop.** Other verticals and use cases where IoT has been progressing include healthcare, transportation, smart cities and smart offices. Consumer-connected areas including retail, hospitality, smart homes, and connected vehicles have also seen IoT progression. Some IoT applications fit both the industrial and consumer markets and are often referred to as cross-industry use cases.
An agile approach enables IoT progress. Applying agile principles for product development at different levels of the IoT ecosystem gives developers more innovation time and helps improve project management; it also lowers cost. Product quality improves with agile product development, which helps to reduce overall costs by lowering service costs.

Experts around the world believe that there will be more than a trillion devices connected by 2020 which has made IoT a focus area for most organizations. As growth occurs, it will be important for enterprises to determine the right proportion between the cost and outcome of adopting the IoT ecosystem and the ease of maintaining and securing any IoT infrastructure adoption.

Solution providers have been continuously trying to add value to their client organizations’ IoT implementations. Starting with the early point solutions, big data analytics and predictive maintenance, solution providers helped enterprises to understand IoT and to determine how to use it to maximize their investment returns. The following are key perspectives for an end-to-end IoT implementation journey that solution providers should consider.

Clients need consulting help to plan and ideate the business problem and to address it to reach business benefits. IoT implementations might create business benefits by reducing costs, increasing efficiency, creating a better customer experience or making other improvements. Thus, to make an IoT adoption successful, clients should consult service providers to plan strategies, develop a business case and establish the processes for IoT use cases.

System integration and implementation is the next step in collecting the data. Devices and sensors are available for monitoring different types of activities and conditions. The parameters to monitor are different in each business case. They vary considerably and can include tracking temperature, location, speed, pulse and other characteristics.

Big data and analytics are closely related to IoT. The huge amount of data flowing from different sensors and other devices needs proper management. Collected data needs proper analysis to derive insights for business functions. Data also needs to be continuously available to generate regular benefits. Using dashboards can improve visualization and help top management to make decisions on mobile devices and in real-time.

Platform adoption is a key step in the IoT infrastructure journey. ISG defines an IoT platform as: an array of components that helps in providing the interface to initiate data and device management within a defined infrastructure in association with communication protocols and security management. Platforms are the critical enablers that bridge gaps and bind the IoT ecosystem.
Network and communication can take many forms. Creating the right communication structure depends on the needs for range, transmission capacity, usage, isochronous connectivity, compatibility and – most importantly – security.

Scalability and flexibility are needed in software and applications. The number of connected devices increases every hour. This thereby increases the need for good software behind every IoT product and service. Organizations have problems integrating dynamic software capability. Developers now need to marry software components and Internet connectivity for a secure, efficient and reliable operation. Software developers are constantly updating software and applications based on the needs of IoT use cases.

Security starts with design. Security is one of the biggest inhibitors of IoT expansion and acceptance. Therefore, service providers need to address security at every step in an IoT ecosystem – from the design phase to implementation – and must also cover the connected device and all network levels.

Managed services are available for different operational aspects. Enterprises have different options to consider for IoT managed services. One option is for service providers to manage the IoT infrastructure after implementation. This approach can relieve the enterprise customer from involvement in the complexities of the implemented ecosystem.

Digital transformation and digital reinvention is the journey an organization takes to achieve optimization in all areas – process, systems, culture and transformation of the entire business model and ecosystem. Internet of Things is one of the core pillars of the digitization and transformation journey that organizations undertake. IoT can help organizations achieve operational efficiencies, create new business value and enhance customer experiences through the help of smart and connected products, solutions and ecosystems.
**IoT in Healthcare**

Internet of Things has the potential to transform healthcare. Several successful IoT applications already exist in the healthcare sector, covering patient monitoring and treatment and hospital management. Remote monitoring of patients is a key focus area for high investment because of the expected improved outcomes. IoT has the potential to help patients and their doctors be more effective at managing chronic diseases, which is a growing imperative across the healthcare system.

- Remote patient monitoring is expanding. It supports more passive, real-time and intuitive ways of managing chronic diseases. Biosensor use is high; the technology is helping in diagnosing and monitoring various health conditions.

- The market is also expanding for connected machine-to-machine (M2M) systems that support bedside tracking for patients who are at home and who require long-term care.

- Hospital deployments of intelligent facility management systems have seen big growth. Systems for inventory management, real-time asset tracking, operating room optimization and emergency infrastructure are all part of the connected healthcare ecosystem.

- Telemedicine and telehealth sites where patients can remotely interact with care providers for consultations, diagnoses and treatments are also gaining momentum globally.

- The spectrum of healthcare-related IoT technologies includes wearables, mHealth (mobile) and other health tracking applications and smart pills for intestinal and digestive tract treatments. These technologies and techniques can aid patient care by expanding access, providing timely, accurate data and reducing costs.

- Medical records systems in hospitals are becoming better organized. Large proportions of paperwork are being removed due to the growing use of digital health records. Electronic health records can make patient information more easily accessible to care providers and can improve care coordination in a connected healthcare ecosystem.

- Data security and patient privacy are important issues that service providers must consider while conceptualizing solutions for connected healthcare. Solutions must satisfy privacy and security regulations that are specific to different countries and patient populations.
Healthcare is one of the largest market opportunities for IoT service providers. Healthcare IoT services have been on the rise in the U.S., Europe, the Asia-Pacific and in some areas of the developing world. The cost of healthcare has been continually increasing which has led providers to pursue connected healthcare approaches. Rising costs also have motivated software and hardware companies to create more solutions to try to reduce the cost of care. These companies also aim to improve remote monitoring to support the aging population and patients with chronic diseases that require constant monitoring and treatment.

Some North American, European and Asia-Pacific governments are supporting research into connected ecosystems and IoT for healthcare. Government support for service providers that bring beneficial changes to patients and providers could change the market equation for healthcare IoT services by incentivizing new services.

**IoT in Connected Cars**

IoT has been a game-changer in the connected cars market. It has taken the consumer experience to a new level by providing the ability to interact with a connected ecosystem. Remote operations, tracking and emergency and other safety features have improved with connectivity. Automated driving is another area where Original Equipment Manufacturers (OEMs) and service providers are developing capabilities and making great strides.

- The connected car has become a reality as OEMs and service providers have collaborated to create new experiences.

- Connected infotainment systems that work with smartphones can improve the human interface of automotive systems. Now consumers can take advantage of voice-activated features to get directions, send emails, play music and make phone calls. To enhance both the safety for the driver and the entertainment quotient, efforts are being made to make the vehicle-driver interface more consumer-focused and interactive. Efforts such as Apple CarPlay and Google Android Auto aim to make the driving experience more customer-focused and easy-to-communicate.
Connected car features span across various services, including navigation, safety, entertainment and more. Road and traffic conditions, accident alerts and parking guidance are some of the key features that can be provided as part of a connected car package. Some of the safety features that have been integrated into offerings include speed limit advice and breakdown assistance. Some entertainment package features included within infotainment systems are auto-play of the driver’s choice of music and social networking notifications.

Remote maintenance alerts and the ability to lock and unlock vehicles remotely are already important components of connected car offerings.

Insurance-related services are also emerging. These services use links to vehicles to track driver behavior and to adjust driver pricing based on recorded data.

Technology providers are ready to develop new services and technology for OEMs to help connected cars interact with drivers and their physical surroundings. Partnerships among service providers and OEMs are helping to shape the connected cars market and facilitate new paid services and consumer offerings.

The global market for connected cars has been developing well; both end customers and service providers are receptive of the new technology. Consumers and commercial fleet operators alike have been adopting connected car features.

Electric cars could provide opportunities for future connected car services. For example, new offerings could guide drivers to the nearest charging station, book a charging slot and estimate the distance to be covered with the present charge.

Many OEMs offer connected car packages that come with either a subscription model or with limited free, built-in features.

The market’s premium and luxury car OEMs include Audi, BMW, Mercedes-Benz and Tesla. These OEMS offer their connected car packages alongside their new cars. Now there is a focus on making connected car services more affordable and available to a broader consumer market.

Third-party providers have made progress in making the connected car experience affordable. New players entering the connected car space are trying to change the dimensions of the auto industry. These include technology startups and companies with experience in other industries that are entering the automotive market.
New partnerships are emerging in the automotive space to exchange ideas and technology and to accelerate innovation for a better-connected experience.

The connected cars market is expanding as consumers want to be able to use their smartphones to make more connections and access more services while on the go. Vehicle infotainment has gone beyond music; now, efforts are being made to enhance the full driving experience.

Apart from offering different connected car features, the automotive industry has a growing need for managed services for both application and infrastructure management. These services are offered with add-on fees by the automotive providers. Security is another growing opportunity. With the rise of the connected cars, there is a corresponding rise in cybersecurity threats. Service providers and OEMs must integrate a security framework into their systems.

IoT in Retail

With the growing dominance of online retailers, physical stores increasingly are threatened by squeezed margins, rising operational costs and a more challenging environment for attracting and engaging customers. Traditional brick-and-mortar retailers are heavily investing in technology to counter the threat posed by e-commerce. IoT use cases for the retail sector span supply chain improvements, operational efficiencies, customer service and omnichannel marketing.

- With real-time data and analytics, retailers can optimize their logistics and supply chains. Companies use radio frequency identification (RFID) technology to track inventory in both stores and warehouses. Retailers analyze data collected by RFID readers and other sensors to improve replenishment operations for fast-moving consumer goods and other products; this ensures that stores are never out of stock.

- Many retailers use short-range sensors such as beacons to track shopper behavior and to develop marketing and promotion plans based on past purchases. Many also use NFC and QR codes to engage with customers via mobile phones and to create a more personalized shopping experience.
Retail companies are increasingly looking to reduce operating costs, of which employee expense is a huge component. Retailers use analytics to assess store traffic by hours, days and weeks; they then assign employees based on occupancy in various sections of the store. Companies are also tracking shopping carts as a proxy for customer location.

Many retailers are installing help buttons in their mobile apps to allow customers to summon help instead of setting up information desks or requiring employees to track the customers in various sections. The buttons also help retailers in tracking the employee utilization on the retail floor in various sections of the store at any given time. Various in-store tracking technologies are also helping retailers understand customer shopping patterns.

The entry of companies like Amazon, Apple and Google in the electronics and home improvement markets is creating new opportunities for retailers in areas like sales service support for smart home products. Some retailers are also becoming order-fulfillment vendors for automated grocery orders which are generated by smart home applications.

Retailers are increasing their use of digital signage. IoT allows them to run personalized in-store campaigns. As soon as a customer picks up a product, an IoT-driven digital sign can display an advertisement or other content that is related to the product and personalized to the shopper.

Retailers are using IoT in many innovative ways to optimize store space and provide more services in a smaller area. Solutions such as virtual closets, smart shelves and smart mirrors allow customers to browse merchandise virtually. Self-checkouts and contactless checkouts are helping to make the checkout process more efficient and reduce employee overhead.

IoT service adoption is increasing in the retail industry, especially as retailers are leveraging technology to overhaul their entire business operation. However, retailers are facing many internal IT challenges that are forcing them to adopt these new solutions slower than expected. As IoT service providers and other vendors enhance their offerings for the sector and take a more consultative approach, retailers are more willing to take the plunge.
IoT Platforms

- **An IoT platform connects** different devices to the cloud and the various devices relative to the IoT ecosystem.

- **There are different** kinds of IoT platforms that are used by providers for IoT ecosystem implementations. Platforms may be either specific to hardware, connectivity or IaaS related.

- **The IoT market has been growing** and therefore there is an important need for an appropriate platform that can connect the right things to the right network for an IoT implementation.

- **Platforms are differentiated by various parameters.** Usability, scalability, data security options, integration and interoperability are some of the main components of an IoT platform.

- **Building an IoT ecosystem from the start** helps you to choose the IoT platform for your requirements and makes integration easier, rather than fitting a platform into an existing system and then make enhancements.

- **The market is flooded with platform options** and you should be able to choose an appropriate one based on your requirements and development options. Key requirements for selecting a platform should be its ability to adapt to the implementation use case and existing infrastructure.

- **Data and device management** are initial hurdles that the platform vendor must counter when managing the large amount of data in an IoT ecosystem. Understanding the data and driving meaningful insights for decision making are key for organizations.

- **Infrastructure and application management** are important because the platform needs to suit and adjust to the existing infrastructure or applications, including ERP systems. The platform’s adaptability to new applications while implementing the IoT ecosystem is important.

- **The platform should be scalable** and have the adaptability to resize and scale as needed for different data sets in the IoT implementation scenario.

- **Security is an essential component** for the IoT platform because large amounts of and multiple data sets are handled. Enterprise security and privacy standards must be at the core of the IoT platforms.
- **Connectivity of the devices and data** is the point where data gets normalized under various protocols and standards.

- **Predictive and cognitive analytics** help decision making and provide an overview of the data that has been captured from various sensors and other sources.

- **The platform’s flexibility to support** the existing infrastructure is important. The enterprise ERP, CRM, PLM and other systems need to be aligned with the connected ecosystem that is being implemented. Thus, it is important that the IoT platform are able to support the legacy systems to avoid changes, additional development and integration costs and other recurring issues that may crop up during deployment.

- **IoT platform and feature selection will depend on** the IoT implementation scale. The platform selected needs to provide the immediate desired support and be able to scale up in due course.

- **Features and cost both should be considered** while selecting an IoT platform. Some platforms may seem initially costly but have more features that will reduce the feature extensions that need to be added later and can reduce the timeframe to complete the implementation.

- **Platform costs must be considered closely** because there could be subscription models, licensing fees and other costs for the different platforms in the market.

- **Some service providers opt for their in-house platforms** when deploying IoT solutions for clients, because the application development would better support their implementation ecosystem.

IoT is the future for enterprises, and platform is the key for all connected systems going forward. A platform provides the integration for the IoT implementation and should cover data management, flexibility, scalability, analytics, connectivity and security options. There is a swarm of offerings in this market. Key considerations for platform choice are cost, features and scalability. The right choice will complement the enterprise IoT deployment.
Introduction

Definition

Internet of Things (IoT) services are defined as the conglomeration of functions such as consulting and implementation (planning, cost analysis and business case development), technology integration and execution (device, platform, analytics, application and security) and overall IoT ecosystem management (managed services).

Our research studies are intended to anticipate the investigation efforts and buying decisions of typical enterprise clients. When contemplating a significant strategy transformation, implementing agile practices or incorporating automation into their environment, an enterprise client will benefit from a study that examines an entire ecosystem for the service line it is examining. Whether that service line is application development and maintenance (ADM),
workplace services, contact center services or data center or IoT services, each of these focus areas is typically made up of consulting and advisory services and system integration, development and support. Therefore, ISG studies will be comprised of multiple quadrants’ analyses which cover the variety of services that an enterprise client requires. Vendors are classified into one of five quadrants, but there are other areas included in this report.

This study about IoT includes five quadrants that represent IoT platforms, overall IoT services and industry verticals. These verticals show the increasing adoption of IoT and use of IoT platforms and their implementations in areas like healthcare, connected cars and retail. The quadrants are defined below as:

- **Overall IoT Services**: Overall IoT services are defined as the conglomeration of functions like consulting and implementation (planning, cost analysis and development of business case), technology integration and execution (device, platform, analytics, application and security) and overall IoT ecosystem management (managed services). It includes all the end-to-end services that a service provider may provide with respect to the overall IoT solutions offerings.

- **IoT in Healthcare**: Healthcare IoT provides technology that helps in patient care, remote monitoring and hospital infrastructure management, thereby improving the doctor efficiency and patient satisfaction. All healthcare IoT offerings, from wearables, sensors for remote tracking of patients, wireless medical devices in hospitals and RFID in inventory management to hospital management systems, add to workflow optimization and different aspects of patient care.

- **IoT in Connected Cars**: IoT services in connected cars are defined by the connectivity of the car with its own ecosystem and/or the outside world, including infrastructure, networks or other devices. The connected car best fits into categories such as safety, navigation, infotainment and payments. Voice recognition features and autonomous driving capabilities are highly important.
IoT in Retail: IoT services in the retail sector include end-to-end solutions – from design and build to ongoing management – which help retailers enhance customer experience, improve supply chains and develop new channels and revenue streams. These solutions help to integrate retail stores to a 24x7 anytime/anywhere selling environment. The solutions also help retailers to improve asset and inventory management and demand planning and to create personalized shopping experiences for customers.

IoT Platforms: An IoT platform is an array of components that helps in providing the interface to initiate data and device management within a defined infrastructure in association with communication protocols and security management. Platforms are an integral part of the entire IoT deployment and we consider those players who are using their own platform technology.
The ISG Provider Lens™ quadrants were created using an evaluation matrix containing four segments, where the providers are positioned accordingly.

**Leader**

The “leaders” among the vendors/providers have a highly attractive product and service offering and a very strong market and competitive position; they fulfill all requirements for successful market cultivation. They can be regarded as opinion leaders, providing strategic impulses to the market. They also ensure innovative strength and stability.

**Product Challenger**

The “product challengers” offer a product and service portfolio that provides an above-average coverage of corporate requirements, but are not able to provide the same resources and strengths as the leaders regarding the individual market cultivation categories. Often, this is due to the respective vendor’s size or their weak footprint within the respective target segment.

**Market Challenger**

“Market challengers” are also very competitive, but there is still significant portfolio potential and they clearly lag behind the “leaders”. Often, the market challengers are established vendors that are somewhat slow to address new trends, due to their size and company structure, and have therefore still some potential to optimize their portfolio and increase their attractiveness.

**Contender**

“Contenders” are still lacking mature products and services or sufficient depth and breadth of their offering, while also showing some strengths and improvement potentials in their market cultivation efforts. These vendors are often generalists or niche players.
Rising Star

Rising Stars are mostly product challengers with high future potential. When receiving the “Rising Star” award, such companies have a promising portfolio, including the required roadmap and an adequate focus on key market trends and customer requirements. Also, the “Rising Star” has an excellent management and understanding of the local market. This award is only given to vendors or service providers that have made extreme progress towards their goals within the last 12 months and are on a good way to reach the leader quadrant within the next 12-24 months, due to their above-average impact and innovative strength.

Not In

This service provider or vendor was not included in this quadrant as ISG could not obtain enough information to position them. This omission does not imply that the service provider or vendor does not provide this service.
# Internet of Things Cross-Quadrant Provider Listing 1 of 3

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Internet of Things Quadrants
OVERALL IoT SERVICES

Definition

Overall, IoT services are defined as a conglomeration of functions, including consulting and implementation (planning, cost analysis and business case development), technology integration and execution (device, platform, analytics, application and security) and overall IoT ecosystem management (managed services).

Observations

- Accenture and HCL lead the market, leveraging their strong consulting and digital experience. HCL’s strong engineering services background helps it apply expertise to grow in the IoT solution development and services market, while Accenture’s core digital focus program and market presence help position the company well in the market.

- Cognizant’s stable U.S. presence provides it with a strong lineup of clients while Tech Mahindra’s (TechM’s) blend of design, engineering and industrial IoT focus keep it ahead in the game.

Source: ISG Research 2018
OVERALL IoT SERVICES

Observations (cont.)

- Capgemini’s deep domain expertise and industry-leading frameworks put it ahead of many companies. Wipro has matured as an end-to-end solutions provider and has expertise in different industry verticals.

- With an expertise in core engineering services, Infosys has grown from providing M2M solutions to overall services. Harman's software services and IoT-led solutions have positioned the company to be one of the key players in the IoT market. TCS brings its expertise in business-transforming, end-to-end solution development to enterprises in various industry verticals.

- Keeping aligned to its core focus areas and vertical expertise, Mindtree emerges as a Rising Star in providing end-to-end IoT solutions to clients. Virtusa makes innovation the core of its solution offering, which has helped it also become a Rising Star in the IoT market. The company binds its connected experience (IoT) with innovative ideas to provide a new experience to clients.
**Overview**

Accenture started by providing M2M and connected vehicle services and expanded to IoT services. In 2014, mobility, which included IoT, formally became a practice area under Accenture Digital. The company’s IoT strategy is part of its Industry X.0 program, which it defines as the digital reinvention of industry. Accenture’s IoT services are estimated to have double-digit growth and have evolved from point solutions to end-to-end service offerings.

**Strengths**

**Dedicated IoT consulting resources:** Accenture’s dedicated Strategy & Consulting Group helps to transform business functions by implementing IoT technologies. The Ignite Strategy methodology helps organizations to understand business needs and to implement IoT solutions that assist in redefining the business.

**Cross-industry reach:** Accenture’s clients are spread across several industries, including manufacturing, media and telecom, travel and hospitality, energy and utilities, transportation and logistics, financial services and others. Accenture has numerous case studies related to different areas of digital and connected infrastructure, which suggest that the company has exposure to a complete view of the IoT ecosystem.

**Innovation-led architecture:** Accenture offers end-to-end IoT services, including strategy, solution design, implementation and execution. Innovation has been the core of its client relationships. Accenture has been able to address and redefine innovation needs across all layers of client organizations.

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**Caution**

Accenture does not have an especially strong presence in more consumer-focused and upcoming IoT areas of retail and healthcare.

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**2018 ISG Provider Lens™ Leader**

Accenture’s presence across geographies enhances its mix of experiences and market exposure. The company’s digital focus, including its INDUSTRY X.0 program, make it adroit in supporting clients’ digital transformation and make it a powerful presence in the market.
Capgemini's IoT program started in 2005; it has since delivered more than 300 projects. Working in the U.S., Europe and the Asia Pacific, Capgemini has been completing end-to-end service and solution engagements across several geographies and verticals.

**Strengths**

**Presence across industry verticals:** Capgemini's client base for IoT solutions is a diverse mix that includes engagements in manufacturing, retail, healthcare, connected cars, energy, utility and transportation. The company also has a footprint in smart homes and smart cities.

**Geographical omnipresence:** Its strong presence in the U.S. and European markets has helped Capgemini tap a wide client base for IoT projects. The company also has a reasonable presence in the Asia-Pacific region, which is the looming market for IoT solutions.

**Client satisfaction program:** Capgemini's OTACE (On Time, Above Client Expectations) program is used as a key performance indicator that helps it build strong client relationships and measure project delivery to client satisfaction.

**Overview**

Key partnerships particularly GE, PTC, Microsoft and IBM have helped Capgemini drive digital industrial growth. Its many programs, including multiple experience labs, customer satisfaction labs and the Applied Innovation Exchange (which also leverages the startup ecosystem), have provided Capgemini's clients with cutting-edge technologies, thereby reducing risks and investment costs.

**Caution**

Capgemini has a relatively higher percentage of point-solution clients than other major IoT services providers. It should improve its conversions to more end-to-end solutions.
Overview
Cognizant’s IoT journey started in 2014. Since then, the company has been ubiquitous across verticals. With a strong presence in the U.S. and Western Europe, it is ramping up to create a strong presence throughout Europe and parts of the Asia-Pacific region.

Strengths

Experience and digital labs: The company operates more than 10 labs that help in product ideation, simulate solutions for customers to experience and enhance partner collaboration. It has specific labs for IoT, big data, analytics, applied AI and cloud dedicated to developing various outcome-based solutions across the digital journey.

Investment in cross-industry solutions: Cognizant has been making purposeful investments in business and technology service offerings to expand capabilities in regions and create cross-industry solutions and frameworks.

Key consulting services: Cognizant’s IoT consulting services offerings range from setting the strategy, prototyping and readiness evaluation and platform selection to making the build vs. buy decision. Cognizant’s consulting-led services have been the key behind many successful client relationships. Flexible customer service and price delivery have been pivotal in achieving customer satisfaction.

Caution
Cognizant’s IoT market reach is mostly in the U.S., where it gets the lion’s share of its IoT business. More penetration in the European and Asian market would enable it to expand its business, especially since IoT has matured well in Europe.

2018 ISG Provider Lens™ Leader
Cognizant’s package of consulting, delivery and managed services has been pivotal in its IoT journey and has won it a varied client base spread across verticals. The company’s IoT reach is slowly expanding to different geographies.
HCL TECHNOLOGIES

Overview
HCL began its IoT Works program in 2015 with core offerings around predictive analytics, remote monitoring and track and trace. It has since expanded into an end-to-end service offering. HCL has a strong presence in manufacturing, healthcare and connected cars segments. It targets healthy growth in the coming year.

Strengths

HCL’s IoT COLLABS: HCL’s incubation labs provide clients with use case-driven consulting. This helps clients understand the product/solution roadmap for the entire service offering journey. HCL’s two labs are run in partnerships with IBM and Microsoft, which help it to showcase its IoT capabilities to clients.

Global market outreach: HCL’s participation in various market awareness programs showcases its solution capabilities across geographies and industries.

Security-first approach: HCL has a comprehensive security framework that helps secure IoT systems at all layers of the technological bundle.

HCL’s DEFINE offerings: HCL’s consulting offerings in partnership with KPMG and Rocketspace have driven client interactions related to specified business requirements.

Caution
HCL’s limited geographic presence outside the U.S. is an inhibitor in its IoT market reach. Europe and the Asia-Pacific region are likely as the next areas of focus for IoT market penetration.

2018 ISG Provider Lens™ Leader
HCL’s “RUN,” a next-generation IoT managed services organization, is providing an edge in its IoT services offering to clients. HCL has been able to leverage its DRYiCE framework and experience in infrastructure management services to enable orchestration and autonmics.
HARMAN CONNECTED SERVICES

Overview

Harman introduced its IoT offerings approximately three years ago and has since expanded its businesses across connected cars, connected products, connected workspaces and connected industries. With its focus on customer experience and its high valuing of networks, Harman delivers end-to-end solutions across geographies.

Strengths

Varied industry vertical experience: From solutions for manufacturing, connected cars, retail and healthcare to smart homes, asset tracking and safety monitoring, Harman has been serving clients in a variety of industry verticals.

Experience in managed services: Harman provides managed services at different operational levels, such as at a team level, program level and portfolio level. Some of Harman’s core work in managed services includes cloud transformation solutions, infrastructure management, application performance monitoring and IT and application management.

Key partnerships: A strong partnership ecosystem is one of the key pillars of Harman’s IoT strategy. Partnerships for devices, platforms, networks, applications and security help Harman to deliver end-to-end, market-ready solutions.

Caution

Harman could consider increasing in-house capabilities and partnerships to build a stronger competency and to be more market-ready.

2018 ISG Provider Lens™ Leader

Harman Connected Services was acquired by Samsung in March of 2017. The combined company has a very competitive offering of IoT solutions. Industry presence and geographical reach have both been pivotal for Harman to build a successful client base and gain experience with connected services over the years.
Overview

Infosys became involved in IoT services in 2014, aligning them with its engineering services business unit the following year. With a background in engineering services for more than 25 years, Infosys is using its expertise to establish an extensive IoT ecosystem for helping clients in their digital transformation journeys.

Strengths

Robust training and delivery approach: Infosys has trained more than 10,000 engineers on IoT programs. Its staff has received hands-on training on hardware like Raspberry, Arduino, cloud platforms and several others. More than 700 engineers were certified on partner platforms like Azure IoT, AWS IoT and ThingWorx.

Strong geographic footprint: Infosys has a strong presence in the U.S. and a significant reach in Australia, New Zealand, other areas of the Asia-Pacific region and Europe. It has strengthened its IoT go-to-market ability in these geographies by setting up exclusive sales, pre-sales and consulting teams.

Collaboration with academia, startups and consortiums: Infosys established connections with universities in China and Australia to position its capabilities and penetrate industrial segments. Its startup acquisitions are also strengthening its IoT expertise.

Caution

Infosys’ IoT penetration has mostly been across verticals the top being manufacturing, automotive, energy/utility and mining/oil and gas segment. Building on that experience in other key and consumer-focused verticals would help grow its market strength.

2018 ISG Provider Lens™ Leader

Infosys’ client engagement outreach, including satisfaction surveys, periodic engagement feedback, its Zero Distance program and other efforts, has helped it to build strong client relationships with established trust for future work together.
Overview

TCS initiated its IoT investments over the past five years. Its independent IoT unit was established in 2017 and started functioning as a separate wing.

Strengths

Core consulting and advisory services: The TCS advisory and consulting team provides focused and core consulting in the IoT space. Covering architecture consulting, product selection and ecosystem development, TCS uses its engineering services expertise to help clients in their IoT journeys.

Managed services support: TCS provides managed services support at all layers. It has been supporting post-implementation services in energy management, fleet management and facility management.

Innovation labs for IoT: TCS has 19 labs across the globe for IoT-specific development and solutions. Its labs cover cybersecurity, AI, robotics and more, which helps TCS drive next-level technology.

Caution

TCS could look at expanding its security infrastructure. More partnerships or in-house capabilities in this space would provide an edge when proposing solutions for IoT engagements.
Overview

Tech Mahindra’s (TechM) IoT offerings started in 2014 with predictive maintenance and expanded to overall services over the years. Though a major presence in the U.S. and North America, TechM is also reasonably big in Europe and has started making its mark in the Asia-Pacific region as well.

Strengths

**Strong BI and big data and analytics practice:** With more than 17 years’ experience, TechM has a strong business intelligence and big data and analytics practice. It has been able to sync that expertise with IoT offerings. The company has more than 400 enterprise customers for those offerings.

**Widespread domain expertise:** TechM has been delivering IoT services to manufacturing, energy, automotive, retail, oil and gas, banking, financial services, insurance and other industries. TechM’s strong practice groups and vertically-oriented enterprise IT and IoT solutions are positioning the company for domain-based consulting.

**Customer experience labs and COEs:** TechM incubates and supports customer requirements and meets innovation standards through its investment in customer factory-of-the-future, customer experience labs, AR/VR, testing labs and partners and its Manufacturing Global Innovation Centre.

Caution

A deeper concentration on consumer-focused verticals and areas which are currently not on TechM’s radar – such as healthcare, hospitality and smart homes – would help the company be a larger part of the up-and-coming IoT space.

2018 ISG Provider Lens™ Leader

TechM’s presence in the IoT service chain, from sensors and gateways, networks, platforms, applications and analytics to security and managed services, along with its robust partnership ecosystem in each of those areas, has helped it establish an overall end-to-end IoT solution offering.
Wipro has been in the M2M and IoT space for more than 10 years. It has been working with customers and evolving its IoT solutions and services. From point solutions to end-to-end offerings, Wipro has grown over the years and is providing customers with integrated and scalable options.

**Strengths**

**Substantial geographic mix:** With IoT offerings in the U.S., Europe and Asia-Pacific, Wipro has been able to create a hold on the global IoT market.

**Target audience and market base:** Wipro's client base includes both large enterprises and small businesses, indicating its ability to cater to clients of different sizes and market reach.

**Robust partner ecosystem:** Wipro has attracted technology and business accelerator partners that have been able to put the company in a distinct position. Its partner ecosystem has helped Wipro evolve with customer and market needs.

A substantial part of Wipro's IoT revenue is from its point solutions. The company needs to convert its mix to include more complete, end-to-end solutions.

**2018 ISG Provider Lens™ Leader**

Wipro's consulting focus that touches on design, process and technology areas has been pivotal in its relationships with clients. Wipro's ability to address the key client concern of budget by delivering at a favorable price-performance ratio helps it win over clients.
RISING STAR: MINDTREE

Overview

From 2012, beginning with M2M, to now providing end-to-end IoT solutions, Mindtree has evolved its services. Mindtree is now focused on IoT in the global market with a concentration on the U.S., the Middle East, Europe and Asia-Pacific.

Strengths

Powerful in-house capabilities: Mindtree has in-house capabilities for device design, communication implementation including its own Bluetooth intellectual property, IoT application development, data analytics, and security. It also has the expertise to leverage on-premise infrastructure while deploying a solution at the client's data center.

Healthy mix of solutions: Mindtree can provide both point and end-to-end solutions to clients. Its capabilities across the technology ecosystem and its team of more than 50 IoT analysts and advisors help Mindtree to meet its clients' business requirements. These capabilities have contributed to Mindtree's success across industry verticals around the globe.

Caution

Mindtree's presence in consumer-focused areas like healthcare, retail and smart homes can help it gain stronger momentum for capturing share in additional and upcoming growth areas of the IoT market.

2018 ISG Provider Lens™ Rising Star

Mindtree strikes a balance of consulting and implementation services. The availability of its Digital Pumpkin innovation hubs for solution ideation has helped Mindtree establish better client relationships. The company has been able to translate customer demands into solutions. Mindtree's interesting new technology investments and solutions, such as Asset+, People+ and Gladius IoT, provide a foundation on which to build a better IoT market presence and better solution development capabilities.
Overview

In 2013, Virtusa began its IoT journey. Its key offerings are its digital framework, Skylab platform and partnership with IBM for IoT deployment and implementation.

Strengths

xTech labs and SkyLab’s SMART IoT platform: Virtusa enhances the client experience with its innovation-oriented xTech labs and SMART IoT platform, which enables the journey from innovation to prototype. Virtusa is further enhancing its SMART platform by working with digital partners to offer clients a more holistic IoT digital engagement platform. Virtusa’s PaaS cloud platform includes cognitive capabilities, robotics and IoT proof-of-concepts. It is pivotal for giving clients an integrated horizontal platform that can be used to bring IoT, AI and other technologies into vertical industrial and consumer solutions.

Strategic partnerships with ThingWorx and Exosite: Virtusa’s strategic partnership with PTC for their ThingWorx platform enables them to provide their consultative and implementation services to their clients to assist them in their IoT journey. Partnering with Exosite, which offers software as a service, also allows Virtusa to extend its system integration and overall services capability.

Caution

Virtusa should increase its market connections to improve the awareness of its work and reach. Presentations and involvement in webinars, conferences, exhibitions and analyst and advisor relation events would help to raise its market presence.
IoT IN HEALTHCARE

Definition

IoT in Healthcare applies technology to improve patient care, remote monitoring and hospital infrastructure management, thereby increasing doctor efficiency and patient satisfaction. There are additional applications across the supply chain and throughout the drug development lifecycle. Healthcare IoT offerings include wearables for condition monitoring, sensors for remote patient tracking, wireless medical devices in hospitals, RFID inventory management systems and hospital management systems to improve workflow optimization and other aspects of healthcare.
### IoT IN HEALTHCARE

#### Observations

- **HCL’s strong client base in the healthcare domain includes drug companies, medical device makers and care providers. Its reach has been pivotal in its positioning as a leader.**

- **Cognizant’s healthcare analytics platforms, coupled with its cost-competitive approach, have been recognized by customers across domains and have helped the company rightly earn a leadership position.**

- **Capgemini’s strong partnerships and focused consulting have helped it build an important client base in the healthcare domain.**

- **Harman’s extensive healthcare offerings and technological frameworks have helped it build a strong hold in the healthcare market.**

- **Wipro offers clients in the healthcare and life sciences industries comprehensive services that include consulting, implementation, strategic outsourcing and demand planning from a single source.**

- **TCS has remote management offerings for patient care and clinical trial participants and offers asset and inventory optimization solutions.**

- **DXC’s managed services offerings and DMI’s success with various clients have helped the companies establish themselves as “Rising Stars” in the healthcare IoT domain. They are potential contenders that may evolve in to the leader quadrant in due time.**
Overview

Approximately 30 percent of Capgemini’s IoT revenues are generated from the healthcare segment. Capgemini works with medical device and technology companies and healthcare providers to build solutions for a more widely-connected healthcare system.

Strengths

Healthcare consulting and SMEs: Capgemini has subject matter experts (SMEs) in the medical device, life sciences and other healthcare sectors that are developing use cases to guide customers. Its strong domain expertise and understanding of the healthcare ecosystem helps it provide accurate solutions to the healthcare field.

Partnership ecosystem and focus on digital transformation: Capgemini has partnerships with hospitals, physicians, academia and industry consortia which help it to apply cutting-edge technologies and thought leadership. Capgemini’s ability to leverage technology centers of excellence for IoT, big data, analytics, mobility, cloud and cybersecurity also enhance its ability to enable digital transformation.

Healthcare and life sciences offering: Capgemini used its clinical category experience to establish end-to-end product development and product lifecycle management services. It leverages digital technologies to build standard-based connected health ecosystems that comply with regulatory requirements.

Caution

While Capgemini’s methodology for IoT value analysis attempts to address the issue, Capgemini could look at its price-performance position. At times, the biggest inhibitor to potential clients implementing solutions is the cost in relation to the expected outcome.
Cognizant

Overview
The major share of Cognizant’s healthcare clients is in the U.S. though the company does have a small footprint in Europe. Healthcare and life sciences account for more than 20 percent of Cognizant’s global IoT business.

Strengths
- **Healthcare analytics platform:** Cognizant’s healthcare analytics platform serves a wide range of customers and provides solutions around drug discovery, supply chain, compliance and drug safety. Applying advanced analytics and predictive models helps clients improve their operations.
- **Domain-led consulting approach:** Domain-specific IoT and digital consulting by Cognizant advisors is pivotal to understanding the client’s business problem and providing appropriate solutions to address the requirements. Cognizant crafts its commercial-off-the-shelf (COTS) solutions to customers’ needs and business strategies.
- **Cost-competitive solution development:** Cognizant understands that potential IoT clients are still struggling to determine if solutions will be cost effective. The company has been successful in providing customized cost-effective solutions to address client business problems. Cognizant’s strong partner base and managed services are assets for the solutions it can offer clients.

Caution
Cognizant could add on to its managed services portfolio by offering post-implementation solutions and support.

2018 ISG Provider Lens™ Leader
Cognizant’s strong consulting and delivery services along with its managed services offerings help it to address customer needs. As a leading systems integrator, Cognizant has effectively worked with partners to achieve positive outcomes for clients’ large engagements across domains.
Overview

Harman is a strong player in the U.S. healthcare market, where it has a stable client base with numerous implemented solutions. More than 70 percent of the company’s healthcare IoT revenues come from the U.S.

Strengths

Strong client base and case studies across the domain: Harman has solutions and projects that span the healthcare domain, including patient monitoring, medical device performance monitoring, maintenance management and product lifecycle services. It is also involved with wearables, the Proteus real-time vital sign monitoring pill and Piramal, a low-cost diabetes monitoring application.

Frameworks to support data, networks: Harman has different frameworks to support end-to-end solutions. Harman’s IoT framework is intended to unify system integration. Its data integration framework manages data interoperability and authentication. Harman Test Connect is for test management and data generation, analysis and execution.

Managed services offering: Harman’s managed services offering is pivotal for its strong position in the healthcare domain. Harman’s solutions help patients self-manage their health through wearables and applications and thereby help in providing end-to-end support to hospitals and healthcare institutions.

Caution

Further investments in predictive device maintenance would help Harman get involved in new areas such as understanding device monitoring, preventing failures and creating new service offerings.

2018 ISG Provider Lens™ Leader

Harman’s widespread experience with clients across the healthcare ecosystem makes it a leader in this domain. This experience includes work with pharmaceutical makers, payers, providers and patients. Drugs, operations and financial areas are all covered by Harman’s predictive analytics solutions.
HCL

Overview

HCL gets approximately 40 percent of its IoT revenue from the healthcare vertical. The Americas and Europe are its major healthcare markets, but HCL has footprints in the Middle Eastern, African and the Asia-Pacific regions too.

Strengths

**Strong engineering services capabilities:** HCL’s experience in building smart hardware products and software platforms for customers across various verticals gives it an edge over the competition. Its engineering portfolio covers mechanical, electrical, hardware, embedded software and prototyping expertise and helps address complex and evolving IoT infrastructure and ecosystems.

**Strong healthcare client base:** HCL’s healthcare client base is spread across pharmaceutical, medical device, hospital, patient care, remote monitoring and other organizations. HCL uses its domain expertise to enhance its presence and to develop more use cases. This includes clinical trials, chronic disease management and post-operative patient care.

**COLLABS and IoT Works orchestration:** HCL’s define, build and run strategy helps enterprises organize initiatives and realize the business value from IoT ecosystems. The company built COLLABS as part of its IoT initiative. COLLABS is a collaborative space where clients can work with peers and SMEs to discuss, plan and test transformation ideas.

Caution

HCL can look for opportunities in electronic patient health records, which have untapped potential.

2018 ISG Provider Lens™ Leader

HCL has solution-led offerings for different segments of the healthcare domain, including solutions to improve clinical trial processes, to enable regulatory compliance and to go beyond the value chain to enhance customer expectations and experience.
TCS

Overview
Healthcare represents a substantial portion of TCS’s IoT portfolio. The company has applied its engineering services experience to the pharmaceutical, medical device and diagnostics segments to deliver innovative and cost-effective solutions.

Strengths

Remote focus: TCS has been developing remote monitoring solutions for clinical trials, patient monitoring, telemedicine, tele-rehabilitation, elder care, community care and other areas.

Customer satisfaction across healthcare domain: TCS has several success stories with U.S. healthcare customers, including a material dispensing improvement project for distribution giant Cardinal Health. TCS’s other references involve helping clients provide timely care, improve quality management and improve workforce health.

Other services: Other distinctive services that TCS offers include its Field Inventory Hub, Instrument Utilization tool and consumables management service. These services help hospitals run more efficiently by improving inventory utilization and providing lab optimization services.

Caution
As TCS continues in the healthcare domain, HIPAA-compliant security will require ongoing monitoring to protect sensitive information like medical records and other patient data.

2018 ISG Provider Lens™ Leader
TCS has healthcare offerings that range from patient care to hospital and infrastructure management and which have helped the company deliver holistic solutions across the domain.
Overview

Approximately 80 percent of Wipro’s IoT healthcare revenues come from the U.S. market. Its domain-based consulting and support of different technologies and processes position Wipro among the key players in the healthcare market.

Strengths

Core consulting and integration competencies: Wipro’s healthcare solutions result from the company’s business- and vertical-focused consulting. Strategic outsourcing and implementation services, along with vital partnerships, have been important in developing its solutions portfolio.

High innovation and technology investments: Wipro has benefited from its investments in different technology areas. Its Data Discovery Platform and predictive analytics form part of its Collaborative Care Platform and innovation efforts. It is gaining more attention for its competencies by participating in marketing campaigns and events across geographies. Partnerships and technology relationships with PTC, Microsoft Azure, AWS IoT and Altizon help Wipro address more client needs in the healthcare and life sciences domain.

Partnerships and collaboration: Strong collaboration with partners such as PTC, GE, Microsoft, AWS and IBM has enabled Wipro to strengthen its capabilities and enhance its portfolio.

Caution

Wipro should continue to build on its strength in different verticals and geographies. An investment in the latest technology areas and strategic mergers and acquisitions could help it tap into the newer areas, such as Electronic Health Records (EHR) and patient record maintenance.

2018 ISG Provider Lens™ Leader

Wipro has end-to-end solutions which include cybersecurity to manage threats across verticals. This puts Wipro in a good position to build customer relationships.
RISING STAR: DMI

Overview
DMI's strong focus on IoT spans across different healthcare and medical science fields. DMI uses its “right size” delivery model to provide its customers with the best pricing and solution. Its successful delivery track record helps DMI win new business and repeat customers.

Strengths

**Strong client base and success stories:** DMI has made a mark by delivering solutions to clients at various points in the value chain. It has been involved in home healthcare, diabetes patient management, mobile patient engagement, personal health device management, population health management, asset tracking, inventory management and other services.

**Domain expertise and consulting services:** DMI’s domain experts in healthcare and life sciences can have consequential consulting discussions with clients and influence their strategic and investment decisions. DMI consultants can address the problems that clients face and connect them with better business outcomes.

Caution
DMI’s market presence could be improved by adding competencies and offerings. The company would also benefit from more marketing campaigns which would increase potential customers’ awareness of DMI’s portfolio, presence and core strengths in the domain.
RISING STAR: DXC

Overview

As a global IT services leader with operations in more than 70 countries and 155,000 employees, DXC makes a strong mark in the IoT market with its focus on care coordination.

Strengths

Consulting capabilities: DXC's consultants help guide end-to-end solution discussions and can focus on specific areas to provide targeted services. DXC's core strength lies in the consulting phase, where it addresses the key areas of analytics, platforms, technology applications and managed services.

Managed services offering in the healthcare domain: DXC provides managed services as part of a care coordination solution. It enables providers to monitor patients and communicate with them through a patient engagement tool. It has a broader location-aware solution to help identify emergencies and provide response services.

Caution

DXC's market awareness could be higher. Becoming more active with campaigns, events, publications and other engagement channels would help DXC show potential clients the value it is building in the IoT market.

2018 ISG Provider Lens™ Rising Star

DXC's partners throughout the value-chain address various client needs. Based on each client's solution requirements, DXC selectively uses its partner base to deliver services for clients in healthcare and other industries. Also, DXC recently launched DXC Open Health Connect platform which helps healthcare providers and payers to quickly and securely integrate and manage data flow across the healthcare network.
IoT IN CONNECTED CARS

Definition

The connected car market is defined as the connectivity between a car with its own in-vehicle ecosystem and/or with resources in the outside world such as infrastructure, networks and other devices. Principle connected car feature categories include safety, navigation, infotainment, diagnostics, payments, voice recognition and autonomous driving capabilities.

Observations

- Cognizant and Infosys have strong automotive client bases that include top OEMs. Both service providers are strong in the U.S. and have overall connected car solutions.
- HCL’s capabilities cover infotainment, telematics, vehicle diagnostics and location-based services. The diversity has been pivotal in making HCL one of the leaders in the industry.

Source: ISG Research 2018
Infosys has an engineering strength and has focused its connected car efforts on telematics platform development, vehicle electronics, human-machine interfaces and user experience.

KPIT’s connected car platform development and ability to provide services specific to client needs have made it one of the most sought-after providers in the market.

Harman’s competitive advantages include its cloud technology and Ignite platform, which provides flexibility and scalability for adding services to the connected car ecosystem.

TCS takes clients through the connected car journey and provides post-implementation services.

DMI and Mindtree are the designated Rising Stars in this segment. DMI addresses both consumer and business needs and has innovative implementations. Mindtree provides clients with development and testing services as part of its solutions to assist in the connected car journey.
COGNIZANT

Overview

More than 90 percent of Cognizant’s connected car market revenue comes from the U.S. Cognizant is focused on automotive technology solutions and has a substantial portion of IoT employees dedicated to this vertical.

Strengths

**Client base, experience and consulting approach:** Cognizant has been a business partner to automotive clients for more than 20 years. Majority of its clients are leaders in their segments of the value chain. Cognizant has experience working with leading industry suppliers on strategic programs. Working with the leading OEMs in the automotive market has made Cognizant well-versed in connected car platform services and its challenges. Its domain expertise allows it to have productive, consultative discussions about building new innovative solutions.

**Car 360 and other connected car solutions:** Cognizant’s connected car solution helps design an IoT implementation roadmap. It supports applications for vehicle diagnostics, mobile integration, safety, passenger comfort and fuel efficiency. Cognizant has developed more than 20 solutions for connected cars, including fuel tracking, car performance, location tracking, traffic-based services and Amazon Alexa-voice services.

**Teen DriveSafe Application:** Cognizant’s application monitors driving patterns to help teens and other new drivers become better and safer.

Caution

Cognizant could opt for customized connected car solutions development for certain client requirements. This could lead to stronger client relationships and more automotive solutions that target the end consumer.

**2018 ISG Provider Lens™ Leader**

With domain-focused consulting and strong integration capabilities, Cognizant has delivered connected car solutions to numerous clients, including leading OEMs. Its resource allocation to this vertical helps it to develop digital solutions expertise across the value chain. Cognizant is investing in an autonomous car vehicle venture which is dedicated to a real-world prototype and with active capabilities.
HARMAN CONNECTED SERVICES

Overview
Connected cars has been a key area of focus for Harman Connected Services, which has won automotive clients globally.

Strengths

Scalable and flexible solutions: Harman uses its Ignite platform as the basis for its solution offering. The scalable platform supports different functionalities that can be added or omitted depending on client requirements. Harman offers additional services to OEMs.

Car-to-cloud communication: Harman has expertise in both cloud and in-vehicle technologies. It can provide a holistic solution that optimizes cloud-to-car communication and offers add-on features that are not readily available in the market.

Patented technologies: Harman has more than 5,500 patents related to connected car technologies. Samsung, Harman's parent company, is a major player in the mobile devices and consumer electronics industry and has made substantial R&D investments in IoT-focused areas.

Caution
Harman could expand domain-based consulting to more specific areas where its expertise could help clients address their business issues and design solutions.

2018 ISG Provider Lens™ Leader
Harman’s connected car solutions, including its Remote Vehicle Updating services, Vehicle Health & Diagnostics Dashboard and other connected safety offerings, position it strongly in the automotive market. From leveraging the Ignite platform to offering cloud-to-car communication, Harman is capable of addressing its client’s core connected vehicle needs.
Overview

The U.S. market accounts for more than 60 percent of HCL's revenue from the connected cars segment. With expertise in connected cars IoT solutions, HCL develops end-to-end solutions that can include embedded systems, network communications and cloud-based services.

Caution

The connected cars market is competitive. There are a lot of niche players focused on specific areas. HCL focuses on delivering value to the customers but could also look at customized pricing options which could be suited to the needs of the client.

Strengths

**Expertise in each solution layer:** HCL is involved in each layer of the connected car ecosystem. It has expertise in embedded electronics, automotive subsystems, application software, network communication, cybersecurity and cloud services. The company also has helpful experience from other industries such as consumer electronics, media, entertainment, software and semiconductors. The entire journey of connected cars is thus rightly named as "sand to brand" solutioning.

**Intelligent transportation solutions:** HCL's expertise in GIS-based road management systems, traffic management solutions, satellite navigation and telematics has helped to solve many transportation problems. Government and private enterprises worldwide have been using its technology to manage their real-world problems.

**Automotive infotainment solutions:** HCL has been leading the market in infotainment solutions for the automotive domain. It works with leading consumer electronic OEMs and suppliers to bring offerings to the automotive market.

2018 ISG Provider Lens™ Leader

HCL's patented solutions in the areas of V2V technology, big data analytics, smart fuel monitoring and smart parking, along with its expertise in other areas, help customers address their business and technology needs. The custom application solutions offered by HCL, target specific automotive customers.
INFOSYS

Overview
The connected car and automotive (manufacturing) segment contributes 18 to 20 percent of Infosys’ overall IoT revenue. Safety, security and user experience are the pillars of the company’s connected cars solutions.

Strengths

Strong engineering expertise: Infosys is a traditional engineering services provider that uses its expertise to understand car- and related technology-specific issues that require both electronics and mechanical engineering experience. It uses its knowledge of key areas of the connected car ecosystem to build scalable solutions that address client requirements.

Consulting and technology advisory services: Infosys has made its customized consulting services a high priority. The company provides advisory and solution requirement consulting services that cover connectivity, big data, platform and cloud technologies for the connected car ecosystem.

Connected car offerings and solutions: Infosys has an array of connected car offerings. Besides consulting, it offers telematics platform development, vehicle electronics development and implementation for advanced driver systems and other functions. It also offers testing and validation for HMI and user experience development.

Caution
Infosys could expand its connected car portfolio by adding infotainment customizations, which it does not currently emphasize. Safety monitoring and energy services are other important areas to vehicle makers where there could be market opportunity for new solutions.

2018 ISG Provider Lens™ Leader
Infosys uses its traditional engineering expertise to delivers solutions to different client sets. Its client base includes automotive OEMs, suppliers and dealer management system providers. It caters to clients across the value chain that want customized solutions. Currently, Infosys is training 100 engineers in autonomous technologies in collaboration with Udacity.
KPIT

Overview

KPIT works with many leading automotive clients across the U.S., Europe and Asia in connected car technologies. More than half of KPIT's connected cars clients are from the U.S. It has a strong automotive solution market presence; more than 35 percent of its IoT revenue share is generated from the segment.

Strengths

- **Infotainment platform:** KPIT's own infotainment platform includes solutions built for connected cars. From real-time traffic assistance to music streaming and voice-activated controls, KPIT's platform addresses many client needs.

- **Vehicle diagnostics platform:** KPIT also has a vehicle diagnostics platform which enables the OEM and the driver to monitor and measure the car health. The AI based platform can diagnose problems and enhance vehicle performance.

- **Awards and patents:** In the last four years, KPIT has been honored with 11 innovation awards related to intelligent transport systems and electric bus technology. KPIT has filed multiple patents for security, autonomous driving, battery monitoring and other connected car technologies and functionalities.

Caution

KPIT could invest in areas related to security for connected cars and autonomous vehicles, which would address a key market requirement.

2018 ISG Provider Lens™ Leader

KPIT has specialized offerings for core areas of automotive engineering such as connected cars. The company can help clients with product development because of its domain expertise and advanced solutions.
**TCS**

**Overview**

ISG estimates that twenty-five percent of TCS's IoT revenues are generated from the connected car space, which is one of the top three verticals of the company's IoT portfolio. TCS has delivered connected car solutions to U.S. and global clients.

**Strengths**

**Consulting and roadmap services:** TCS has expertise across the value chain. It can advise clients about their business case and build a roadmap for the overall solution.

**Post-implementation support:** TCS provides post-implementation support, including managed services to help clients maintain and manage their programs.

**Robust partner ecosystem:** TCS can manage a variety of service offerings because of its partnerships in different technology areas. These partnerships enhance the company's solution capabilities by providing more options to integrate.

**Caution**

While TCS has good market presence in the U.S. for connected cars, it should look at investing in marketing its capabilities. This would help improve perception among clients about its offerings.

**2018 ISG Provider Lens™ Leader**

TCS combines advisory consulting, implementation and integration management post-implementation services with the right partners from its ecosystem to provide IoT solutions.
RISING STAR: DMI

Overview
DMI has a strong connected cars experience and expertise which enables it to connect with automotive clients in their journey, either from the beginning or during an ongoing engagement. Technology partnerships and system integration abilities make DMI a key player in the connected car space.

Strengths

Good price vs. performance balance: DMI uses its “right size” capabilities to provide services at competitive prices. The company’s pricing models and solution development successes are pivotal in retaining its existing client base and winning new customers.

Partnerships and system integration: DMI has key partnerships across the value chain. Its partnerships in different areas help it to respond to and deliver on client needs and give it strong integration capabilities. DMI has strong capabilities in the areas of SDP development, TSP integration, Over-the-Air (OTA), Predictive Analytics, Infotainment – apps and framework, content aggregation, telematics/infotainment validation and certification and connected car program launch management.

Caution
DMI could look at expanding its capabilities to other key areas in the connected car space such as remote access, vehicle tracking and voice-activated features. DMI has been delivering to some of the key clients in these areas and has been offering services that would be either vehicle or customer initiated using web, mobile or voice.

2018 ISG Provider Lens™ Rising Star

Having 18 years of experience in the connected car delivery market has made DMI a key player. This expertise and the company’s ability to provide flexible solutions development and leverage strategic partners to deliver to different customers make DMI a good choice for automotive clients.
RISING STAR: MINDTREE

Overview
With a substantial market presence in the U.S., Mindtree provides connected car solutions at every stage of the lifecycle, from development to maintenance.

Strengths

- **Connected car offerings and client base:** Mindtree’s connected car offerings range from infotainment, telematics and diagnostics to navigation and safety. It markets to OEMs, suppliers and aftermarket providers.

- **Application and infrastructure management services:** Mindtree leverages its AMS and IMS services to help clients throughout their program life cycles, from development to implementation and support.

Caution
Mindtree could target other areas that are in play in the connected market where it doesn’t currently offer services. Music streaming for in-car entertainment and voice activated controls are newer areas where Mindtree could look to add offerings. Another future area where Mindtree could venture is an automated car offering.

2018 ISG Provider Lens™ Rising Star
Mindtree leverages its infrastructure and application services to offer post-implementation management services to its clients. It can support customers across their entire connected cars journey, starting with development.
**IoT IN RETAIL**

**Definition**

IoT services for the retail sector include end-to-end solutions that range from design-and-build to ongoing management services. The IoT solutions themselves are oriented to helping retailers enhance customer experience, improve supply chain operations and develop new channels and revenue streams. Solutions can help align retail store operations with the 24x7 anytime/anywhere selling environment while improving asset and inventory management, managing demand planning and creating personalized shopping experiences for customers.

**Observations**

- Capgemini and Cognizant emerged as leaders in IoT services for the vertical due to their strong focus on retail-specific IoT capabilities. They take a holistic approach and provide end-to-end solutions rather than solving standalone problems.
TCS and Harman also have strong IoT capabilities in the retail sector. Both companies are continuously developing their services portfolios to address additional requirements and client demand, such as real-time data analytics, retail-specific IoT platforms and improved customer experience and engagement both in-store and online.

DMI has a strong lineup of clients in the retail sector, which highlights its appeal in a marketplace where large service providers are gaining strong footholds. DMI’s end-to-end managed IoT services portfolio and its customer engagement and analytics platform establish its position as a “Rising Star” in this market.
Capgemini highlights consumer products and retail as one of the top three segments for its business. The company provides consulting services for IoT adoption to drive digital transformation for retailers. Its portfolio focuses on data analytics to improve customer engagement, enhance loyalty programs and streamline inventory management.

**Overview**

Capgemini is focusing on data analytics, which it believes will be the game-changer for retail IoT services. However, the company has not highlighted its investment in security solutions or partnerships. With more data being collected and more data sources emerging, it is important for service providers to invest in secure systems to ensure that consumer data doesn't get compromised.

**Strengths**

- **Broad retail-specific portfolio of IoT solutions**: Capgemini leverages its consulting expertise to provide end-to-end digital transformation services for retail operations. It uses its partnership with Intel to improve operations from the factory and the distribution network to the store. Its retail IoT offering includes solutions and technologies for predictive maintenance, asset tracking, fleet management, smart stores and smart fitting rooms. It also offers personalized and proximity marketing solutions for consumers.

- **Dedicated retail CoE**: Capgemini established CRESCENT, a dedicated center of excellence for the consumer products and retail sector, in India. Work at the CoE supports IoT solution development for personalized customer engagement, order fulfillment, general store operations and inventory management with real-time data analytics.

- **Financial strength and high brand awareness**: The retail sector accounts for around 25 percent of Capgemini's total IoT revenues in the U.S. and is expected to grow in the next few years. Capgemini is recognized by its clients and partners for its depth of IoT services experience in the retail sector.

**Caution**

Most of Capgemini's capabilities lie in data analytics and generating actionable insights that can help the retail sector improve operations and change customer engagement. Capgemini is investing in analytics and the complete data management lifecycle, from data acquisition to data aggregation and integration, with business applications like ERP, SCM, CRM and control systems.
Cognizant has invested to create retail-specific IoT capabilities. It focuses on developing various use cases to use as pre-defined models for real-world implementations. It provides strategy consulting services for small- and large-format retail stores. This approach adds to its implementation experience, especially in the U.S., where IoT is gaining traction in the retail sector.

**Overview**

Cognizant has an integrated consulting practice that is spread across more than 20 countries and which helps retailers define and scope their IoT needs. Its bespoke IoT creation model is offered on top of partner platforms or as a new build to provide end-to-end IoT implementations, from conceptualization to design, prototyping, build and deployment.

Retail IoT implementation experience: Cognizant is one of the few players that have moved ahead from developing proof-of-concepts to actual IoT services implementations in the U.S. retail sector. The company is leveraging its use cases to win significant contracts and has been able to monetize its IoT offerings for the sector.

Offering scale and breadth: Cognizant created an integrated retail IoT offering by combining its global system integration practice with disparate IoT solutions in the sector. It uses its in-house SaaS platforms such as 1Facility and RetailMate to bring all of the solutions together onto a single platform. It also offers management and maintenance services across the IoT stack, including enterprise assets and data management and analytic services.

**Strengths**

Strong focus on industry specific-consulting: Cognizant has an integrated consulting practice that is spread across more than 20 countries and which helps retailers define and scope their IoT needs. Its bespoke IoT creation model is offered on top of partner platforms or as a new build to provide end-to-end IoT implementations, from conceptualization to design, prototyping, build and deployment.

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**Caution**

As IoT services are gaining traction among retailers, more system integrators are expanding their IoT capabilities to be specific to the sector. With client maturity levels increasing, Cognizant should focus on enhancing its managed services portfolio because managed services will be the new revenue-generating model in IoT services.

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**2018 ISG Provider Lens™ Leader**

Cognizant’s experience as a long-time system integrator in the retail sector has helped it gain a strong foothold in the IoT services market. It has capitalized on its existing client relationships to develop various use cases and to then implement them in a collaborative environment to maximize on its success rate.
HARMAN CONNECTED SERVICES

Overview
Harman’s retail IoT offering is centered on optimizing customer experience through converging analytics, sensors and mobility technology in real time. Its retail solutions cover back-office and customer-facing aspects including employee productivity, automation, customer experience and security.

Strengths

Real-time data analytics: Harman’s Smart Retail Solution leverages Microsoft Azure and AWS to generate and display insights using real-time dashboards. The customizable dashboard can predict shopper behavior and traffic patterns to help managers optimize shelf inventory, employee allocation and store energy costs.

Security solutions investment: Harman has made significant investments in IoT security through partnership and by developing its own architecture. Its Clarinet vulnerability scanning solution conducts compliance check assessments and applies security patches in real time. Harman partnered with Entrust Datacard to develop ioTrust™ for identity management services. The solution identifies sensors and other devices and manages access to sensitive and non-sensitive data.

Large technology investment: Continuous investment in developing new technology is a key strength of Harman’s. The company owns many patents related to IoT middleware and edge analytics. Harman has developed various non-intrusive IoT sensors to analyze shopper behavior, including thermal infrared-based occupancy detection systems to generate heat maps of retail floor areas.

Caution
Harman should invest in showcasing its vertical-specific IoT capabilities, especially in retail. With IoT services adoption increasing in the vertical, Harman can gain a significant share of the market by investing in brand awareness campaigns.

2018 ISG Provider Lens™ Leader
Harman Connected Services has a strong IoT services portfolio for the retail sector and is making investments in all the right areas, such as real-time analytics and security. Its retail business-centric KESS™ framework is highly interoperable and can be integrated with existing technology to support overall business transformation.
Overview
TCS is applying its expertise in big data and supply chain management to offer analytics and supply chain monitoring solutions to the retail sector. The company's IoT services portfolio features big data analytics and deep learning to correlate data in different formats from multiple sensors and to help store managers with floor space management. Other efforts address supply chain visibility and customer experience.

Strengths
Improvement supply chain management: In addition to its data analytics and insights solutions, TCS has developed the TCS OmniTrack™ solution to provide last-mile visibility into inventory movement for retailers. Its sensor system can track KPIs for fresh produce in real-time and provide alerts and recommendations. Retailers can also schedule routes and monitor the location and health of delivery vehicles and driver behavior.

Strategic IoT partnerships: TCS has made strong commitments to partnerships with IoT players like Intel, Cloudera, Microsoft Azure and PTC to enhance its retail services portfolio. It built a retail customer experience centre in collaboration with Intel to showcase technologies including 3D printing, virtual reality and IoT-driven retail solutions to customers.

Strong brand recall value: TCS has a strong market presence in the U.S., especially in the retail sector. Its strength in delivering technology solutions to retailers has helped TCS to gain a similar level of brand awareness for IoT services in the sector.

Caution
TCS should focus on developing an end-to-end offering for retail business transformation with a strong emphasis on security. It should leverage its strong position in the U.S. retail market to monetize its IoT offerings more effectively.

2018 ISG Provider Lens™ Leader
TCS has been recognized for its retail-specific offerings in the digital transformation domain. It has leveraged its deep learning expertise to develop a strong analytics-driven framework for the sector. Its solutions and services help retailers use digital technologies to create an omnichannel customer experience and to improve consumer satisfaction.
RISING STAR: DMI

Overview
DMI's IoT retail sector offering relies on real-time analytics to improve shipping, analyze shopper behavior (including price sensitivity) and manage marketing and promotions. It covers data management, business intelligence, analytics and predictive modeling.

Strengths

Online consumer behavior pattern analyses: DMI provides data-driven intelligence to analyze customer behavior patterns. The solution helps develop targeted marketing plans and provides recommendations such as suggesting shipping discounts and promotions for customers with higher-than-average basket sizes. It uses its connected asset management solution to help retailers offer location-based personalized offers.

Key acquisitions and partnerships: In 2014, DMI acquired KnowledgePath, a mobile and omnichannel commerce solutions vendor, to enhance its IoT capabilities in e-commerce. It combined mobile commerce and in-store mobile solutions with its data analytics suite to deliver a personalized shopping experience. DMI partnered with Telit and Oracle to build an analytics platform and integrate it with business applications like ERP and CRM to offer demand planning, store fulfillment and inventory management services.

Caution
While DMI has an end-to-end IoT managed services suite for the retail sector, it is more recognized for its data analytics capabilities. To compete against the bigger players in the market, DMI needs to strengthen its overall portfolio and to invest in increasing its operational scale.

2018 ISG Provider Lens™ Rising Star
DMI's IoT clientele includes some of top global retailers, which is a testimony to the strength of its IoT analytics suite. As the company aggressively invests to enhance its capabilities through acquisitions and partnerships, it is likely to become a strong competitor to some of the more established players in the market.
IoT PLATFORMS

Definition
An IoT platform is an array of components that helps in providing the interface to initiate data and device management within a defined infrastructure, in association with communication protocols and security management.

Observations
- Microsoft Azure's device-to-cloud communication and ability to connect to any device and IoT system make it a good choice for many IoT implementations.
- AWS's IoT managed cloud platform has been the integral point for cloud applications and other devices. It connects to devices and other AWS services and helps manage the connected ecosystem.
IBM’s Watson IoT platform helps in business transformation with its cognitive abilities, security and industry expertise. Storage and data management, along with cognitive analytics capabilities in a secure connectivity environment, make Watson a good choice in many IoT implementations.

PTC’s ThingWorx industrial IoT platform provides ease for creating and integrating with numerous solutions and applications in the IoT ecosystem. It has the ability to connect to other applications and constituents, which helps seamlessly align with the IoT infrastructure.

Bosch and GE are the Rising Stars in the segment. The Bosch IoT Suite is cloud enabled and provides the ease of connecting securely with other IoT applications. An open platform that has the flexibility to integrate with other services make Bosch a choice to meet specific needs in IoT implementation environments.

GE Predix’s software IoT platform enables data collection and analytics for industrial data. It helps to drive key insights based on analytics on the large amount of data.
Overview

The Amazon Web Services IoT managed cloud platform of services enables secure interaction with different applications in the cloud. It is the connecting point for numerous devices along with other AWS IoT services to process and generate relevant insights within the IoT infrastructure.

Strengths

Security is the key: AWS's security features have been among its key strengths. With functionalities like Security Groups and Trusted Advisor, AWS is highly rated for its security.

The power of shadow device: The ability to create a device shadow in AWS is another function that differentiates the offering. The device shadow creates an identity and can store its messages offline and deliver them once reconnected.

Support of other AWS services: Along with other devices, the AWS IoT managed cloud platform can attach itself to other AWS services like Lambda, Amazon Kinesis and Amazon Machine Learning. The use of Kinesis analytics and other pre-built IoT applications within the connected ecosystem help process and analyze data.

Caution

Cost has been a challenge for the AWS IoT platform because it might require some additional build on the IoT implementation.

2018 ISG Provider Lens™ Leader

AWS offers the platform and other services that help clients implement IoT. The company has key partnerships in most areas for the entire IoT ecosystem, from the build stage to managing IoT services.
IBM WATSON

Overview
Through the Watson IoT platform, IBM helps clients manage devices, applications and gateways. IBM is accompanying its customers through their digital journeys by supporting them in most areas of IoT adoption and implementation.

Strengths

Watson’s key IoT focus: With its offerings for connectivity, information management, risk management and advanced analytics, Watson has been providing customers with a unique IoT experience.

Secure commerce support: IBM and Visa have a partnership that allows customers to embed Visa’s token-based secure payment processing technology into any device on the Watson IoT platform. They position this capability as enabling any IoT device to work as a point-of-sale device.

Key partnerships: IBM also partners with different device and gateway vendors to integrate with its platform at scale.

Large customer base: IBM has more than 1,800 individual customers on its Watson IoT platform. The customer base is spread across geographies and various industry verticals including industrial, automotive, retail and others.

Caution
IBM’s synchronization between various offerings could help deliver better implementation both in terms of technology and services.

2018 ISG Provider Lens™ Leader
IBM’s focus in the IoT space and investments are helping it to drive the digital transformation journey for its clients. The company has core business units focused on cloud, security and analytics that are enabling IBM to innovate and drive the IoT market.
Microsoft's Azure IoT cloud platform, along with its Azure IoT Suite of preconfigured solutions, have been enabling business transformation by collecting data and driving insights from it. A familiar brand in the platform area and its ease of use have made Azure a popular choice.

**Overview**

**Strengths**

Fast and easy to implement: Microsoft's Azure offers IoT capabilities in a fast and easy-to-use platform that comes with an additional storage facility. The ability to connect and use the data within the IoT ecosystem as well as new data streams make it good fit for many business needs.

Device-to-cloud communication: Azure IoT supports both device-to-cloud and cloud-to-device communication, making it available to other IoT services. Messaging, file transfer and built-in applications enable it to act as a gateway in the IoT ecosystem.

Device management: Many device makers have opted to make Azure their IoT platform because of its ability to integrate with various sources and manage data from various devices.

**Caution**

Pricing has been an issue for Azure IoT platform. The different pricing models that have been offered are complex and are moderately expensive.

**2018 ISG Provider Lens™ Leader**

Azure is a familiar brand in the industry and benefits from its ability to manage large data sets and its implementation ease. The availability of Azure IoT platform along with its ability to use Azure IoT Suite solutions make it a popular choice for IoT customers.
Overview

ThingWorx is PTC’s platform for the industrial IoT (IIoT). PTC has made key investments in industrial IoT technology space that help enrich its IIoT expertise and deliver augmented reality (AR) experiences.

Strengths

Flexible deployment options: PTC’s ThingWorx is supported by a set of development capabilities that provide flexible deployment options. Through its various modules, ThingWorx can deliver IIoT apps and AR experiences.

Power of ThingModel: ThingModel is the digital twin of a device or process made up of real-time data. It can act on numerous data sets and integrate the device to the existing ThingWorx module or third-party applications.

Flexible integration framework: ThingWorx can integrate with an organization’s existing ERP, PLM and CRP systems. It is designed to be flexible and to be used with any third-party application. That is a core strength for the ecosystem, where aligning to the existing business infrastructure helps ease implementations.

Caution

With scalable deployment options, PTC could look at providing clients with customized implementations based on their specific use cases.

2018 ISG Provider Lens™ Leader

PTC’s key partnerships in the technology, cloud and services areas have enabled it to become a strong player in the platform space. Focused investments and competitive pricing models based on different subscriptions have made PTC a choice for many IoT deployments.
RISING STAR: BOSCH IoT SUITE PLATFORM

Overview

Bosch Software Innovations’ cloud-enabled platform provides secure connectivity with other IoT applications. With its concentration on connected devices, software and applications, Bosch Software Innovations addresses the entire IoT journey taken by various businesses.

Strengths

Bosch IoT Suite: The Bosch IoT open-source, standards-based suite consists of various segments including middleware that can be used in combination with applications to extract business value. The Bosch IoT platform can cater to all needs and supports everything from sensor data input to end results.

Own IoT cloud: Bosch Software Innovations has built its own IoT cloud which powers its IoT Suite. It includes flexibility and scalability options with add-on data security features.

Caution

With more available flexible subscription modules, Bosch would be able to attract more clients to offer different services in the entire IoT value chain.

2018 ISG Provider Lens™ Rising Star

With key acquisitions like Procyst and HERE for autonomous vehicles, Bosch Software Innovation has been able to play on its strengths. Developing software products and solutions is the key to IoT ecosystem.
RISING STAR: GE PREDIX

Overview
Targeting the Industry 4.0 market, the GE Predix edge-to-cloud platform enables the interpretation of data from industrial IoT assets. With features like data analytics, big data processing, asset use monitoring and security compliance, Predix helps organizations utilize their assets to the best of their ability.

Strengths

Build flexible applications: Predix allows third parties to build different applications on the platform within the IoT ecosystem. This enables the user organization to leverage these extended services and applications and optimize the results.

Key digital partnership: Cognizant has partnered with GE to deliver industrial IoT solutions. Predix provides the Industry 4.0 capabilities that Cognizant can leverage for different use cases.

Caution
With the huge amount of industrial data managed by the Predix platform, there could be more application development for the data coming in from industrial devices and keeping in mind the security aspect.

2018 ISG Provider Lens™ Rising Star
With its digital twin feature, GE Predix has redefined industrial IoT and is able to optimize business outcomes. With the flexibility to use customized applications, GE aids in extracting value from the connected infrastructure.
Methodology
METHODOLOGY

The research study "ISG Provider Lens™ 2018 - Internet of Things" analyzes the relevant software vendors/service providers in the U.S. market, based on a multi-phased research and analysis process, and positions these providers based on the ISG Research methodology. The study was divided into the following steps:

1. Definition of the Internet of Things target market
2. Use of questionnaire-based surveys of service providers/vendor across all trend topics
3. Interactive discussions with service providers/vendors on capabilities and use cases
4. Leverage ISG’s internal databases and advisor knowledge and experience (wherever applicable)
5. Detailed analysis and evaluation of services and service documentation based on the facts and figures received from providers and other sources.
6. Use of the following key evaluation criteria:
   - Strategy and Vision
   - Innovation
   - Brand Awareness and presence in the market
   - Sales and partner landscape
   - Breadth and Depth of portfolio of services offered
   - Technology Advancements
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