REPORT REPRINT

Infosys touts a range of strengths to bring to the IoT market

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The company's IoT practice is focused on harvesting value from brownfield infrastructure and then providing value realization from smart connected products. Its key differentiator lies with its partnering, developed to match each client's requirements and its integration of Nia analytics capabilities with partner technologies.

Introduction

The Infosys Engineering Services business has existed for 25 years and employs more than 15,000 engineers servicing over 280 clients. It is currently the fastest-growing horizontal service line in the company, delivering core engineering services in the aerospace and automotive sectors, as well as providing network and embedded systems on an OEM basis for Cisco and a variety of telco clients, along with software product engineering services for ISVs such as Microsoft. The Infosys IoT practice draws on this heritage.

451 TAKE

In the IT enterprise market, Infosys has created a narrative around developing a Live Enterprise that resonates with clients because its roots lie in modernizing the client's existing technology landscape. The company's IoT practice offers capabilities that extend this narrative into the operational engineering departments among some of its customers. Infosys approaches this operational market with some of its own IP, templated use cases and a mix of engagement models. Its key differentiator lies with its partnering, developed to match each client's requirements and its integration of its Nia analytics capabilities with partner technologies.

Context

Five years ago, IoT became a focus area for Infosys as a core innovation offering forming part of its digital transformation capabilities, and so it set up a team to provide value-driven industrial product design and services. In 2015, Infosys began partnering with platform providers such as Bosch, PTC and Dassault Systemes to engage up front with clients to define the solution. In 2017, Infosys developed a maturity model with the German Academy of Science and Engineering, Acatech, and other academic institutions, launching the model at Hannover Messe that year, which it uses with clients to define roadmaps to help them achieve their outcome. In 2018, Infosys began looking at the consumer side of the IoT market as well as branching out to address Smart Spaces.

The Infosys IoT practice now has 2,000 consultants and over 100 active clients and provides end-to-end services covering platform selection and platform aggregation as well as managing the service for the client. The engagement model is to build and operate, but the majority of work currently comes from implementation projects. Infosys also continues to invest in startups in the IoT area with a $500m fund.

IoT services

The Infosys IoT-centric capabilities span assessment and consulting, implementation and integration, analysis-driven operations and support and monitoring services. The practice has a multi-skilled team of over 300 providing engineering, consulting and architecture services to work with the client to create a functional roadmap and define key use cases. This team starts small, at a given plant, and then looks to scale, working with the recommendation of partners in the customer's ecosystem.

For the data acquisition layer, Infosys gathers data from the machines and works with the partner ecosystem for local field service support. Each activity is designed using a connectivity architecture and Infosys works across the upper layer of control into the ERP side of the client's business using its implementation and connectivity capabilities. When it comes to IoT platforms, Infosys has its own analytics offering in the form of Nia as well as working with providers such as PTC Thingworx, Rockwell Automation, Dassault, MS Azure IoT Suite and AWS. Because Infosys already has a large SAP practice, it also can develop approaches around Leonardo.

Infosys is also expanding its portfolio to provide engineering consulting and architectural services for industry-specific solutions. For example, it plans to launch industry-specific solutions in Life Sciences, Discrete Manufacturing and other industries with partners such as Rockwell, PTC, Microsoft, Dassault and AWS.

Infosys also has an advanced engineering group of 50 housed in the IoT team with AML and analytics skills, as well as an IoT Innovation Wing – Infosys Center for Emerging Technology Solutions (iCETS) looking at emerging technologies such as vision-based analytics that are developing rapidly. This group is instrumental in managing co-creation in terms of first pilots or first lighthouse projects.

The majority of the Infosys IoT business comes from industrial IoT addressing sectors such as discrete manufacturing, including aerospace & defense, automotive and industrial, pharmaceutical, mining and resource, telecom, energy and utilities, oil and gas and CPG for food and beverages. About a quarter of the business comes from consumer IoT for automotive telematics and home automation, while the remainder comes from Smart Spaces, where it is actively engaged in projects working on university and enterprise campuses.

In order to sustainably create its own talent, Infosys has in-region innovation centers where it trains new hires for three months before deploying them under the supervision of industry experts.

Infosys sees the CoE approach as important in ensuring that projects move through from pilot to production because it enables the client to create centralized capabilities with funding for lighthouse projects, whereas without this approach it would be challenging to get signoff on multiple proofs of concept with different client managers.

Project value realization

Infosys finds that for industrial IoT projects, it can help clients achieve a 20-40% increase in equipment life and a 20-25% increase in OEE. Infosys does this by focusing on industry and domain solutions end-to-end, from device to analytics. It integrates information across the various layers at the back end in the enterprise layer, as well as supports the change management piece of the project, providing interactive techniques at scale.

With offerings for industrial IoT, it is not as easy as taking a global template and rolling it out because most projects are in brownfield sites that have different assets in place. Consequently, Infosys begins with a use case template to help it decide with the client what inputs to measure. At the data acquisition layer, Infosys gets data into the platform by templating asset types and classes.

Infosys has developed a Smart Factory offering for aircraft engine manufacture that can be provided both as an OEM and an MRO capacity. As part of the offering, Infosys implanted intelligence in the form of sensors across multiple facilities to drive process optimization and on-time delivery. Repair routing then becomes dynamic in nature since it is not always possible to predict what process or sequence to follow, so Infosys created scenarios to address machine and labor bottlenecks to stop slippage on delivery.

Infosys began developing this offering, working with a factory in Singapore providing a complete assessment of the entire production/repair process to see what would typically be considered the right approach, and to identify the KPIs and operational levers for production planning of the utilization of machines. Once this had all been identified, Infosys built the templates at each of the layers for OEE and condition monitoring using the sensor selection for machines to create a catalog on the edge. In this way Infosys created a framework for nine sites and will then roll out globally for the client.

Data acquisition from the machines themselves was used to instrument their management and then standardized data is aggregated on the shop floor and sent to the platform layer where Infosys builds the use cases. Standard architectures for a typical bill of materials are used to drive pricing models, with components assembled in low-cost geographies and shipped to the US as prefabricated and assembled components. The processes were put together to build simulations that could be run as use-case templates on the platform and integrated with ERP systems across the various layers. Infosys spent roughly nine months planning and scheduling the layers to help the client reduce timelines.

Engagement models

Infosys comes to market with a variety of engagement models, some of which are highly differentiated. For example, working in partnership with consulting and engineering company Poyry and Nokia, Infosys provides the KRTI4.0 AI framework for operational excellence, which provides the Poyry Reliability, Availability, Maintainability, Safety (RAMS) methodology for infrastructure and asset management, integrated with partner platforms including Nokia's IMPACT IoT platform and Worldwide IoT Network Grid to provide connectivity and network analytics that flow into the Infosys Nia platform.

The second model is outcome-based, where the contract is tied to certain metric improvements such as scrap reduction. Third, Infosys can provide a turnkey offering, working with the client to devise the business case and help develop a product, right through to providing staff to help manage the platform. Infosys can also license its IP to clients for use in their operational environments, as it has done in the utility sector with its Infosys Gateway Software.

And finally, Infosys continues to evolve bundled pricing models that are seamless to the client and include software platform and device costs rolled into the overall contract. Where it is involved in a multi-provider capability with strategic partners such as Dassault, PTC, Rockwell Automation, Azure and AWS, Infosys takes responsibility for managing hardware costs, partner software licenses, professional services expenses and SI services costs. Infosys finds that this type of engagement can help with moving project progress more rapidly through to production.

Currently, the majority of Infosys projects are fixed price, with about 30% of customers opting for one of these newer engagement models.

Competition

Infosys faces some of its traditional IT SI competitors in the IoT space, including Cognizant, HCL, TCS and Wipro in the US, Atos in Europe and Accenture and Deloitte globally. From the OT market, there is huge scope for co-opetition with partners such as Dassault and Siemens that have their own professional service arms. Infosys will also occasionally compete with partners such as Hewlett Packard Enterprise and IBM. The ecosystem required to deliver projects is vast, so there are many niche specialists that could in some contexts compete with Infosys but that it more typically partners with, such as DMT Consulting for mining and Sarla Technologies for factory automation.

SWOT Analysis

STRENGTHS

Infosys has a range of strengths to bring to the IoT market, spanning its own IP in offerings such as its IoT Gateway, its co-innovation strategy with partners, producing capabilities such as the KRTI4.0 initiative, its ability to templatize aspects of common use cases and provide analytic models using Infosys Nia, along with a variety of engagement models to help clients achieve their outcomes.

WEAKNESSES

Despite its engineering credentials and its impressive partner ecosystem for operational project delivery, Infosys is a brand much better known for its enterprise IT expertise than for its OT capabilities.

OPPORTUNITIES

The biggest opportunities lie with working with clients to improve supply chain efficiency, equipment maintenance efficiency, energy efficiency and services margins for field services.

THREATS

In order to deliver benefits on value and time to market for clients and decent margins for their own business, IoT service providers need to try and create repeatable offerings, but the brownfield nature of most projects makes this very challenging to achieve. The Infosys approach aims to address this threat.