IDC MarketScape

IDC MarketScape: Worldwide Smart Manufacturing Strategy Service Providers 2023-2024 Vendor Assessment

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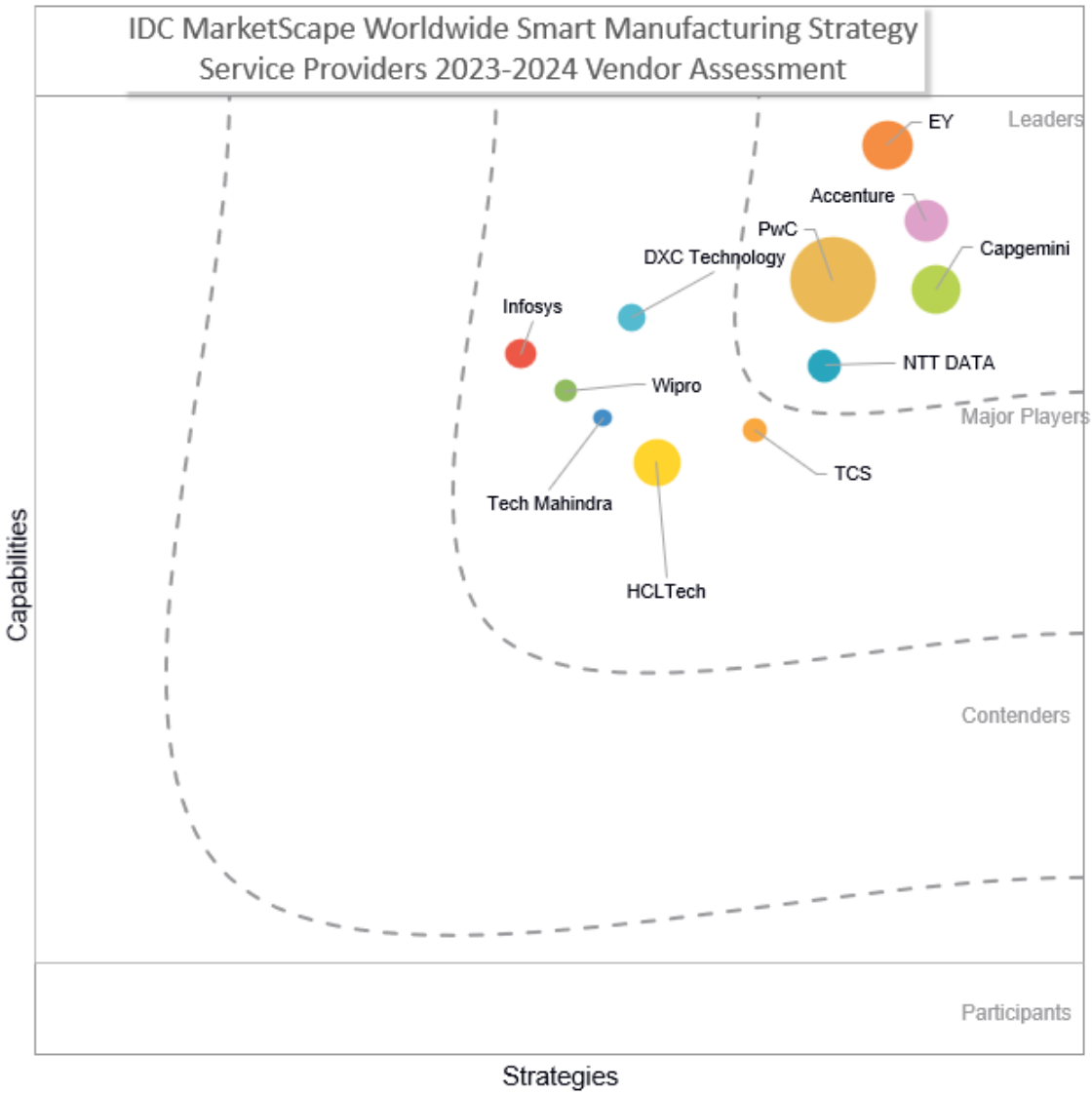
IDC MARKETSCAPE FIGURE

FIGURE 1

IDC MarketScape Worldwide Smart Manufacturing Strategy Service Providers 2023-2024 Vendor Assessment



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Please see the Appendix for detailed methodology, market definition, and scoring criteria.

IDC OPINION

This IDC study presents a vendor assessment of the 2023-2024 worldwide smart manufacturing strategy services market through the lens of the IDC MarketScape model.

Smart manufacturing requires manufacturers to be horizontally integrated across the value chain, from product development to service delivery. Moreover, manufacturers must be integrated on a network basis value chain. Manufacturers manage and operate articulated networks of factories that need to be centrally coordinated to be successful.

Today, companies are going through massive cultural changes, with the role of manufacturing operations transforming from key enablers of the fulfillment process to key enablers of business transformation and reinvention. However, companies are finding themselves with so much available technology that they cannot even identify the right business cases. Instead of inadequate technology, they face the problem of inadequate business, IT, and digital strategy definitions.

In this context, service providers are very relevant as they deliver the necessary broad portfolios and strategic visions needed to enable manufacturers to fully embrace smart manufacturing opportunities. Nevertheless, end users are often overwhelmed by the size and complexity of the opportunities at hand. Therefore, they may greatly benefit from a tool such as the IDC MarketScape that provides a quick, digestible, and thorough view of the opportunities ahead.

This 2023-2024 IDC MarketScape is part of a series that looks at IT services firms that, through their services (business consulting, IT consulting, systems integration, application development, business outsourcing, IT outsourcing, IT deployment support, and IT education and training services), support the development of a production management, asset management, quality management, and smart manufacturing strategy. This report covers the following use cases in the smart manufacturing strategy space:

- Operational Excellence Improvement
- Asset Discovery
- Maturity Assessment
- Use Case Evaluation and Road Map
- Change Management
- Customer Partnerships

Most firms offer a broad range of services alongside manufacturing industry tools. This document only assesses the services dedicated to solving key smart manufacturing operational and IT challenges. This research is a quantitative and qualitative assessment of the characteristics and capabilities that affect a vendor's ability to deliver smart manufacturing transformation for manufacturers in any industry.

IDC MARKETSCAPE VENDOR INCLUSION CRITERIA

The "short list" as provided by this IDC MarketScape highlights both the current capabilities and future strategies of each IT consulting vendor to enable technology buyers to identify more efficiently the appropriate fit to support their respective transformation goals and needs.

The intent of this IDC MarketScape is to focus on IT service providers that meet the above criteria and provide a broad set of offerings and capabilities to support production management. Hence, for this IDC MarketScape, IDC Manufacturing Insights includes firms that have established a reputation in the manufacturing industry, particularly across the production management domain, at a worldwide level.

The company, through its business consulting and IT consulting services supports the smart manufacturing strategy in the following components:

- Operational Excellence Improvement
- Asset Discovery
- Maturity Assessment
- Use Case Evaluation and Roadmap
- Change Management
- Customer Partnerships

The vendor must also have generated at least $30 million in smart manufacturing strategy revenues for calendar year 2022. In addition, the vendor must be able to deliver services to manufacturing companies in at least five listed regions (Asia/Pacific, Australia/New Zealand, Western Europe, Central and Eastern Europe, North America, Latin America, and the Middle East and Africa).

ADVICE FOR TECHNOLOGY BUYERS

This study cannot replace the due diligence that should be done during the selection of a services firm. However, it can aid a manufacturer's decision-making process and sharpen the vendor evaluation process.

For manufacturers that are embarking on or continuing with their smart manufacturing transformation journey with the help of service providers, IDC offers the following guidance:

- Service providers can answer nearly any question a consumer may have because of their access to a vast range of technology and industry expertise. To guarantee success, manufacturers should verify that vendors can help evaluate various projects and determine the value of associated components. They should request a value and technology road plan that connects the stages of important projects with specified and approved business outcomes.
- Manufacturers should not limit their requests to current needs. Rather, manufacturers should ensure that a vendor can help create a clear, long-term focused transformation plan. They should evaluate an IT service provider’s experience in strategic areas and execution capabilities.
- Manufacturers must maintain control over a project, even as they allow their vendor partners to identify the best courses of action and resolve potential issues. Any contractual agreement must include provisions to deploy specialized program management and domain resources that may vary as a project progresses.

VENDOR SUMMARY PROFILES

This section briefly explains the key observations that resulted in a vendor's positioning in the IDC MarketScape. While every vendor is evaluated against the criteria outlined in the Appendix, a summary of each vendor’s strengths and opportunities is provided here.

Accenture

Accenture is positioned in the Leaders category in this 2023-2024 IDC MarketScape for Smart Manufacturing Strategy Service Providers.

Accenture's smart manufacturing practice is part of its Industry X service team, which has over 30 years of experience in design, engineering, manufacturing, production, and physical asset management. Industry X aims to help manufacturers design and implement comprehensive digital transformation strategies for their factories around the world. Services include business consulting, IT consulting, systems integration, application development, and business and IT outsourcing.

Strategic acquisitions are an integral part of Industry X, which has acquired over 20 firms in the last five years. Notable recent acquisitions include the engineering consulting and services firm umlaut, the customized manufacturing automation and robotics solutions provider Eclipse Automation, the industrial operations consulting firm Myrtle Consulting Group, and the asset performance management consultancies TA Cook, Advoco, and Flutura.

Accenture has developed a broad range of software implementation accelerators to support clients on their smart manufacturing journeys, such as the Intelligent Engineering and Manufacturing Platform and Accenture Operations Twin.

Accenture also has a cloud-based edge orchestration platform that leverages flexible and compatible architecture as well as out-of-the-box tools to scale and manage multiple distributed locations.

Accenture's zero-based asset management solution, designed specifically for asset-oriented industries, also provides intelligent software for demand-driven optimization, cost benchmarking, and zero-based budgeting for production units.

Accenture has a broad partner network spanning key solution providers, start-ups, industry bodies, and academic institutions. Partners include Avanade, AVEVA, Microsoft, PTC, SAP, ServiceNow, and Salesforce.

Accenture's long-term vision is to strengthen its offerings and intellectual property (IP), expand its industry and market reach, and create valuable industry ecosystems. Accenture has a proven and ongoing track of investments in digital infrastructure (connectivity, Internet of Things [IoT], cloud, blockchain, and cybersecurity), data and analytics (AI, machine learning [ML], and cognitive technology), and digitally-augmented workforce offerings (industrial metaverse, augmented/virtual reality [AR/VR]).

Strengths

Customers appreciate Accenture's vast knowledge and expertise, its global network of skilled professionals, and its ability to manage complex projects from start to finish while keeping the big picture in mind. The company's ability to integrate a vast array of solutions and advanced technologies such as AI makes it capable of complex, visionary deployments.

Challenges

Customers have repeatedly observed that Accenture's delivery approach is not always flexible enough to adapt to changing circumstances. This inflexibility could make it difficult to deliver projects on time and within budget, especially when there is a need to be agile and shift resources and technology delivery from one project to another.

Consider Accenture When

Accenture is a good fit for multinational companies requiring end-to-end approaches for their factory networks. These companies manage a complex footprint of diverse factories with various levels of maturity; as such, they need innovation to ensure operational excellence across production, capital projects, robotics, and the Future of Work.

Capgemini

Capgemini is positioned in the Leaders category in this 2023-2024 IDC MarketScape for Smart Manufacturing Strategy Service Providers.

Capgemini provides a comprehensive range of smart manufacturing services as part of its Intelligent Industry portfolio of services. These services range from smart factory analysis and design, reference architectures platform and solutions deployment, and applications maintenance to cybersecurity and change management.

Capgemini's smart manufacturing services are delivered in synergy with other technology practices within the company (such as cloud, AI, IoT, edge computing, and 5G), and digital engineering. Services are packaged and aimed at sectors such as life sciences, automotive, consumer products, aerospace, chemicals, and manufacturing, with Capgemini maintaining a focus on replicating best practices.

Central to the Capgemini value proposition for smart manufacturing is the Intelligent Production System (IPS) framework, which is focused on synching digital transformation efforts with business processes and outcomes. Capgemini's IPS offerings are geared toward driving new profitable revenue streams while improving customer loyalty and maximizing value from the entire ecosystem. This IPS approach links Capgemini's Smart Factory initiatives with other domains such as Digital Continuity (supporting end-to-end information access and consumption), Laboratory of the Future, and Intelligent Supply Chain.

Capgemini has a broad portfolio of services to help clients define and validate their smart manufacturing strategy, architecture, and road map. These services also help clients assess and benchmark the digital maturity and connectivity of sites and prepare greenfield projects for worldwide replication.

Capgemini services include the Smart Plant Assessment, I 4.0 Strategy, Architecture & Roadmap, Greenfield Design, Sustainable Operations, Transformation and Change Program.

Capgemini also defines and deploys the key functional elements that are the backbone of the operations execution, including manufacturing execution systems (MES), SCADA, historian, laboratory information management systems, quality management systems, and asset management systems.

Capgemini has capabilities and methodologies to define and create the architecture (intelligent operations platform reference architecture) needed to handle digital technologies in operations, based on IoT technologies and the vertical integration from the shop floor to the cloud, as well as modern technologies such as AI.

Strengths

Capgemini's core differentiator is its ability to build and deploy a diverse portfolio of core and new technologies as well as its strategic and business-oriented approach to delivering complex transformational projects with a very high level of flexibility and alignment with customer needs.

Challenges

The company has a wide range of partners; however, IDC believes there is potential to leverage this more. Additionally, the company's presence is relatively concentrated in the European region. However, there is a noticeable and consistent expansion occurring in both North America and the APAC region, a factor that customers may find noteworthy.

Consider Capgemini When

Capgemini is an excellent fit for enterprises that are at the beginning of their smart manufacturing journeys or looking to upgrade their digital strategies. Capgemini is also suited to companies that require a partner for consulting advisory, complex business transformation, and customized technology implementations.

DXC Technology

DXC Technology (DXC) is positioned in the Major Players category in this 2023-2024 IDC MarketScape for Smart Manufacturing Strategy Service Providers.

DXC's smart manufacturing competence stems from practices pioneered by CSC and HPE Enterprise Services prior to their merger. DXC's decades-long expertise has been applied to its broad portfolio of smart manufacturing services spanning smart factory advisory services, strategy development, master data management, design, implementation, integration, development, analytics, program management, and operational change management.

DXC's acquisition of Luxoft in 2019 helped it break into the digital consulting, design thinking, and agile application development service domains, which are especially focused on user experiences. DXC advertises itself as a one-stop-shop for all Smart Factory capability needs. Partnerships with ARENA2036 and the Manufacturing Technology Center in Coventry (U.K.) allow the company to test and integrate advanced digital technologies and insights into client solutions.

DXC applies to a business consulting approach to customer engagements, leveraging assessment and maturity models and practices to boost organizational awareness before carrying out technology deployments. DXC has built a smart manufacturing reference architecture (aligned to ISA-95 and RAMI 4.0 standards) which covers asset connectivity, network segregation, IoT platforms, workflow management, MES integration, application design and development, and cybersecurity. This architecture can be used by DXC's architects and engineers to develop solutions using customer-preferred vendors.

DXC's smart manufacturing consulting services cover a multitude of areas such as capability assessment and Industry 4.0 value assessment, smart factory strategy and business case development, discovery and design services, transformation management services, application development and data analytics advisory services, and operations change management services.

DXC applies a consultative approach toward other technology domains as well, including IoT/operational technology (OT) security services, private 5G and Long-Term Evolution services, and AR/extended reality solutions. DXC also has a specific value proposition for industrial IoT (IIoT) cloud solution accelerators. Leveraging its digital assessment and Spark Step Zero capability, DXC can follow a structured approach toward production and distribution improvement programs. This approach enables clients to evaluate IoT and analytics technologies as well as change management services to maximize a project's results.

Strengths

DXC has a proven track record in delivering full-stack, fully managed solutions for global manufacturing leaders in the automotive, transportation and logistics, aerospace, defense, chemistry, and consumer packaged goods industries. The company has capabilities to deliver end-to-end, converged IT/OT solutions and can jumpstart smart manufacturing projects with an eye on real business outcomes.

Challenges

DXC has a smaller market footprint with a selected coverage of verticals in the manufacturing space.

Consider DXC When

Companies in the early stages of their smart manufacturing journey that want immediate business outcomes facilitated by consistent processes may select DXC as a smart manufacturing services partner.

EY

EY is positioned in the Leaders category in this 2023-2024 IDC MarketScape for Smart Manufacturing Strategy Service Providers.

EY approaches smart manufacturing with a holistic cross-functional lens that is heavily consultancy driven. This approach leverages all of EY's capabilities in technology and business consulting, including climate change and sustainability services, people advisory services, and tax.

Smart manufacturing is addressed within EY's supply chain and operations consulting practice, which has risen to over 4,800 professionals across 150 countries through organic growth and acquisitions in the software space (such as its acquisition of the MES solution Entegreat and the EY Catalyst IIoT cloud-based platform). EY leverages its capabilities and understanding of shop floor technologies (sensors, control systems, SCADA, Historians, etc.), enterprise and transactional systems, network architectures (plant/edge/cloud), and cybersecurity issues to address client goals and business needs.

EY's smart manufacturing strategy is designed to link manufacturing visions with the desired operational performance improvement targets and understand their implications, down to level of operator behavior on the shop floor.

EY's ability to integrate the expertise and IP of well-known manufacturing organizations is a key differentiator. The Executive Partnership with P&G, where EY is the sole solution provider to license P&G's Integrated Work Systems methodology, stands out in the market.

To drive a customer's smart factory journey, EY deploys maturity assessment methodologies and practices that not only completely evaluate a manufacturing site's capabilities but also identify areas for improvements and maturity increases across all aspects of plant operations.

EY has tailor-made maturity assessments for life sciences, consumer products, retail, and advanced manufacturing industries, covering five stages of maturity, from digital silos to adaptive plants.

To sustain its market position, EY is investing in AI, IT/OT, cybersecurity, data modelling, analytics and visualization, and workforce reskilling. These investments, including the investments in the Nottingham Spirk Innovation Hub and the Operations Innovation Hub at MxD, demonstrate EY's commitment to the manufacturing domain. They have also renewed and expanded EY's relationship with P&G.

Strengths

EY's expertise in manufacturing transformation, including people, process, organizational, and technology change management, is very high. EY's strength lies in ensuring customers can effectively exploit technology after deployment. EY teams are actively coaching customers to drive standard work processes and make continuous improvements.

Challenges

According to IDC analysis and customer feedback, EY is not as well-known for its technology transformation services, despite its strong reputation in business consulting. In addition, regulatory restrictions prevent EY from establishing ecosystem relationships with several popular technology companies. While this does not prevent EY from implementing its offerings, prospective customers may consider this point.

Consider EY When

Companies planning to undertake highly complex projects in which integrated technology must seamlessly blend with evolving work practices should consider EY for achievement of their business outcomes.

HCLTech

HCLTech is positioned in the Major Players category in this 2023-2024 IDC MarketScape for Smart Manufacturing Strategy Service Providers.

HCLTech's smart manufacturing value proposition sits within its Digital Engineering Services business that includes the Manufacturing, Plant Automation, and IoT WoRKS™ practices. The company has over 20 years of experience in manufacturing engineering services, building of 3D plant models, simulation of manufacturing processes, implementation of automation solutions, connected manufacturing platforms, and manufacturing process digitization. These services have been bolstered by the acquisition of product innovation and product life cycle management (PLM) service provider Geometric in 2016, Butler in 2017, Starschema in 2022, and ASAP in 2023.

HCLTech has invested in building a robust and extensive partner ecosystem focused on strategic acquisitions and internal centers of excellence, including smart-manufacturing and IoT labs. In the smart manufacturing space, HCLTech has recently acquired hybrid data management, cloud integration, and analytics company Actian, digital engineering company Starschema, and German automotive-focused service provider H&D International.

Industry NeXT is HCLTech's framework for the digital transformation of manufacturing operations with an array of solutions ranging from design to aftermarket, paired with an end-to-end service framework covering strategy consulting, solution development, implementation, maintenance support with ready templates, methodologies, solutions, and accelerators.

HCLTech leverages its engineering capabilities to develop use cases and provide integrated IT-OT convergence, IT infrastructure, and cybersecurity services. Smart Integrated Operations is HCLTech's framework for planning, building, and operationalizing a converged operational environment.

HCLTech has a proven capability to deliver engineering services for process assessment — including gaps identification and recommendations on process improvement — and technology selection, implementation, and support. HCLTech's Connected Factory Assessment toolkit, based on industry standards (ISA95/ISA88/MESA) and Industry4.0 best practices, comprises of a maturity model, standardized execution process, data collection templates, checklists, and a gap analysis and technology platform selection tool.

One of the core pillars of HCLTech solution to enable customer progression of a smart manufacturing strategy is to ground the analysis of data from multiple IT and OT sources to derive insights and recommend actions for improving plant metrics. The Realtime Manufacturing Insights IIoT solution is designed to connect, unify, and exploit data to manage manufacturing information for factory leaders.

In addition, HCLTech has built a framework to help customers navigate and manage their sustainability journeys. This offering is designed to support the current and future sustainability aspirations of an enterprise across all stages of maturity.

Going forward, HCLTech is working on expanding its consulting capabilities to continue providing strategic guidance along the entire transformation cycle to customers. It will also focus on partnerships expansion by deepening relationships with large-scale technology vendors and onboarding relevant niche partners.

HCLTech is also committed to further strengthening OT offerings around the integration of the OT and IT worlds and through a connected manufacturing platform. The company is focusing on the development of new solutions embracing innovative technologies and concepts like 5G, digital twins, modern user experience, and security.

Strengths

Given its history, HCLTech has a very deep coverage of engineering services applied to the manufacturing process. The company also has solid IT /OT infrastructure build and support capability. HCLTech excels in its ability to mobilize people and resources in offshore locations to support complex customer needs. Interviewed customers have reported high levels of satisfaction with the overall services provisioning and industry vision.

Challenges

HCLTech has focused its proposition on the IT and engineering side of the smart manufacturing space, but still has room to further develop deep factory-specific knowhow and IP.

Consider HCLTech When

Companies that need to solve complex IT requirements and pain points in their factories with a customized, scalable, and cost-effective approach may find a very valid partner in HCLTech.

Infosys

Infosys is positioned in the Major Players category in this 2023-2024 IDC MarketScape for Smart Manufacturing Strategy Service Providers.

As a system integrator and solution provider with more than 30 years in the industry and a strong background in engineering services, Infosys provides a vast array of solutions for brownfield and greenfield value-driven implementations.

Infosys has created a broad range of IPs and frameworks to accelerate the value realization process. Some of these solutions include the Industry 4.0 Assessment Framework (developed in collaboration with Aachen University), Digital Factory Solutions, sensor-to-cloud AI framework for operations KRTI 4.0, Infosys Additive Manufacturing Solution, Infosys Autonomous System Platform, Infosys Robotic Platform, Infosys Video Intelligence, and a number of AR/VR solutions.

Infosys has a strong track record of delivering smart factory solutions covering production, quality, and maintenance across several industries.

In the smart manufacturing strategy space, Infosys has built a solid and extensive set of methods and practices to drive value for customers.

Infosys' Industry 4.0 Assessment Framework: Proprietary Industry 4.0 digital maturity assessment is co-developed with Aachen University and German science body acatech - National Academy of Science and Engineering that had a key role in the development of Industry 4.0 concepts. The framework enables the objective evaluation of plant readiness, creates prioritized transformation road maps, and guides stakeholders on lighthouse identification and grouping of plants. With the help of assessments, customers receive as-is and to-be maturity analysis, value map, business case, and to-be technical architecture, gap analysis, and prioritized list of use cases along with digital transformation road map.

Moreover, Infosys is releasing solutions to deliver human-centered adoption management. These solutions will help customers understand current manufacturing systems and processes, align desired outcomes with needs and wants of end users (e.g., by applying design thinking techniques to resolve pain points), and promote collaborative working practices.

For Infosys, the smart manufacturing service line is a strong focus and growth area. Infosys focuses on co-creating and co-innovating solutions with customers in ecosystems where it plays a leading orchestrator role. Infosys also aims to further utilize digital twin technologies to build virtual representations of real, complex operations. By doing so, it can achieve operational excellence and improve design, health and safety, operations, maintenance, and service processes.

Strengths

Infosys has a strong approach to smart manufacturing initiatives based on industry standards and best practices tailored to customer needs. Clients have commended Infosys for having a thorough grasp of their sectors and a solid understanding of their needs. This leads to very high levels of customer engagement and satisfaction.

Challenges

While endowed with a very solid portfolio of solutions and partners, Infosys has not made groundbreaking acquisitions and innovations relevant to smart factories over the past few years. This could affect its future ability to differentiate in an extremely competitive and crowded space.

Consider Infosys When

Manufacturers wishing to execute complex and ambitious projects based on industry standards, best practices, and their own custom requirements can generate a good return from choosing Infosys.

NTT DATA

NTT DATA is positioned in the Leaders category in this 2023-2024 IDC MarketScape for Smart Manufacturing Strategy Service Providers.

As a system integrator within the NTT Group, NTT DATA is a provider of smart factory solutions. The company combines IT and communication technologies to deliver a wide range of services ranging from strategy and business IT to maintenance and operations. NTT DATA's value proposition is based on its global presence, wide ecosystem, research and development activities, and its co-innovations with strategic customers and hyperscalers. NTT DATA has also recently developed some notable innovations that are relevant to smart manufacturing.

NTT DATA has created edge machine learning accelerators that enable embedded devices to run local machine learning models. The company has also embraced the concept of hyperautomation, combining robotic process automation, AI, and ML to automate complex manufacturing processes and optimize efficiency.

NTT DATA has strategically acquired Dell Services, DevOps company Flux7, and Thai IT service company Locus to strengthen its global consulting and delivery capabilities.

NTT DATA has a broad range of services to support customers in their smart manufacturing strategies covering maturity assessment, use case evaluation, and road map organizational change management.

NTT DATA value proposition also covers operational excellence improvement and is geared toward driving continuous improvement and efficiency throughout the manufacturing process.

The company works collaboratively with clients to analyze current operations, identify inefficiencies, and develop data-driven strategies to enhance productivity, reduce costs, and increase overall efficiency. Teams of consultants have expertise in Lean Six Sigma methodologies, process optimization, performance management, and change management.

NTT DATA also has asset discovery services to provide comprehensive visibility and management of assets within the manufacturing environment. The company leverages IIoT capabilities to visualize the equipment status and production capacity of factories, enabling real-time monitoring and optimization.

NTT DATA's strategy is to be a trusted digital partner that provides comprehensive services to clients with manufacturing-related operations. NTT DATA recognizes the need for consulting, digital and communication technology, operational knowhow, and partnerships to transform operations into smart factories. NTT DATA has outlined a comprehensive strategic road map to guide its endeavors in the smart manufacturing domain over the next three to five years. This road map encompasses key initiatives and approaches tailored to meet evolving market trends and business needs.

The company also has a proven focus on IIoT, enterprise asset performance, advanced process control, and automated material handling systems. It is pursuing the further integration of MES solutions with equipment, specifications management, process management, scheduling, and dispatching.

Strengths

NTT DATA is backed by a truly glo-cal organization with a full set of competencies at its disposal. The company excels at promoting technology innovation and bringing shopfloor digital infrastructure to the next level.

Challenges

The company's federated organizational model with strong regional components may create issues for companies looking at global deployments.

Consider NTT DATA When

Companies looking to solve their most pressing business issues with advanced technologies can find an optimal partner in NTT DATA.

PwC

PwC is positioned in the Leaders category in this 2023-2024 IDC MarketScape for Smart Manufacturing Strategy Service Providers.

PwC's product development and manufacturing team, formed within its operations transformation consulting practice, provides capabilities, assets, and expertise across multiple competencies (including production excellence, quality management, asset management, and smart manufacturing). These offerings are strongly grounded in continuous improvement methodologies, including Lean/Six Sigma. PwC has evolved its services to include embedded plant connectivity, edge/cloud analytics, automation, security, and digital experiences. These efforts culminated in the creation of the PwC Factory Intelligence platform (a preconfigured/configurable manufacturing insights/workflow and analytics sandbox) that today constitutes one of the core pillars of PwC's digital proposition for factories.

PwC's smart manufacturing services have grown significantly over the last several years through the establishment of joint business relationship with critical technology providers (such as AWS, Google, Microsoft, Oracle, and SAP). These relationships allow for an expanded set of PwC Factory Intelligence use cases. In concert with these use cases, PwC teams data scientists, IoT developers, security experts, and platform architects together with its core operations consulting experts.

PwC's offers comprehensive, end-to-end maturity assessments as part of its approach to efficiently and consistently assess clients' operational needs. PwC takes a holistic approach to assessing maturity and identifying pain points and operational, organizational, and digital capabilities, particularly in areas related to people, processes, and governance.

PwC has developed a core offering around operational excellence leveraging a "building blocks" taxonomy that enables clients to unlock operational efficiency and reduce cost based on their manufacturing maturity and industry. PwC also has a "boots on the ground" approach that begins with site visits. The company works collaboratively with shop floor teams to obtain quicker buy-ins for operational excellence program initiatives.

PwC has developed specific rapid assessments to understand and quantify opportunities for manufacturing improvement at a client's production facility. PwC analyses a client's site profit and loss (P&L) and compares it against a benchmarking database in order to understand the largest opportunity areas and quickly illustrate the factors driving P&L performance.

PwC is set to improve its strategic positioning by organically building on existing capabilities, enhancing starter kits, developing digital manufacturing assets and solutions, expanding the connected solutions products list, and strengthening alliances with IT players.

Strengths

PwC has a deep and solid understanding of how factories should deliver business value. PwC seldom engages in "technology only" approaches; rather, it employs a balanced approach in which technology is an enabler of business value. Projects prioritize the adoption of digital and automation innovation, not simply the implementation of technology.

Challenges

When companies require a “technology first” solution in which digital advancements are not directly linked with a core manufacturing improvement program, PwC may not be the ideal choice. PwC also collaboratively builds and deploys smart manufacturing solutions based around the specific needs of clients, down to the level of users and tasks. It may struggle to engage with customers who are not willing to involve key users with a high level of engagement.

Consider PwC When

PwC is suited to companies that actively want to bring their manufacturing processes to the next level and generate business value through a collaborative approach with their solution providers.

TCS

TCS is positioned in the Major Players category in this 2023-2024 IDC MarketScape for Smart Manufacturing Strategy Service Providers.

TCS is a well-established company that provides smart manufacturing services, building on its specific industrial background and leveraging more than 25 years across industry verticals.

TCS is maintaining its vision to generate value by fully leveraging ecosystem relationships within the ever-connecting manufacturing industry. This approach is based on TCS' thought leadership approach "Neural Manufacturing" based around Connected Asset, Connected Operations, Connected Workforce, and Connected Supply Chain.

To drive this vision, TCS has built core unique selling propositions such as its Digital Manufacturing Platform, a solution accelerator with pre-build Integration adaptors, industrial-specific and cross-industry data models, as well as a factory model that defines the right sequence of services (work breakdown structure) for global rollouts.

TCS is well equipped to support manufacturers in devising the best digital factory strategy and delivers proprietary methodologies and solutions such as Industry 4.0 Transformation Framework and Manufacturing Maturity Model (M3). These tools, which are designed with business value delivery in mind, provide a detailed road map across production, quality, inventory, maintenance, and employee health and safety, supporting the overall reference architecture.

TCS solution for organizational change management (OCM4.0 Framework) is designed with a bottom-up approach (from shop floor to top floor) to change management spanning people, processes, and technology.

TCS has a long history and solid methodologies to build co-innovation practices with customers. TCS leverages its Pace Innovation Architecture and provides digital toolkits for collaboration as well as platforms and sandboxes to refine and speed up innovation. Additionally, its global network of innovation centers (Paceports) provides a collaborative physical setting for teams to ideate, prototype, and test new ideas quickly and efficiently.

Going forward, TCS is committed to achieving its vision of ‘Bringing Life to Plants’ and helping clients realize their unique vision of a ‘factory of the future’. This customer-centric approach will be geared around envisioning and architecting future factories with business and technology advisory services,

designing, developing, piloting, and scaling manufacturing operations, and embedding intelligent automation and cognitive capabilities for improved operational performance. TCS is leveraging generative AI for smart manufacturing-related use cases and has constituted a cross-functional team to work on LLM Models that address the needs of customers undertaking smart manufacturing journeys.

Strengths

TCS boasts a global footprint and extensive industry expertise, with unique linkages to the automotive, industrial manufacturing, and steel industries. TCS is focused on support services and proactivity delivers high levels of satisfaction that can drive a substantial amount of repeat business.

Challenges

TCS has not made relevant acquisitions in the space. In this very challenging market, the company will have commit to a long-run path for strategic growth and innovation in order to maintain its competitive position.

Consider TCS When

TCS is an excellent choice for multinational corporations that require ongoing assistance in a variety of technologically complex and diversified subject areas. Companies with a strong appetite for co-creation and co-innovation that leverage wide ecosystems of technology partners, agile execution approaches, and methodologies may find TCS a good fit.

Tech Mahindra

Tech Mahindra is positioned in the Major Players category in this 2023-2024 IDC MarketScape for Smart Manufacturing Strategy Service Providers.

Manufacturing is Tech Mahindra's primary industry of focus, given its history as an industrial corporation. The business has extensive integrated knowledge in smart operations leveraging experience built over 30 years.

Tech Mahindra has vast engineering expertise spanning design, prototyping, device testing, and value engineering. When it comes to smart manufacturing, systems integration, and application development engagements — particularly in areas such as MES, PLM, LIMS, and Digital Manufacturing — Tech Mahindra excels at providing value to end users. The company has developed solutions across IIoT platforms, analytics, IT/OT integration, AI/ML, AR/VR, automation, and 5G private networks.

Tech Mahindra is expanding its market share by taking advantage of its innate capacity to adapt to changing customer requirements and understand the problems faced by customers across the automotive, aerospace, other discrete industries, and process industries. To support these customers with proof of concepts and tests, Tech Mahindra has established testbed facilities at the Mahindra Chakan plant, which provides a "lighthouse" view of all the available Industry 4.0 solutions. This proposition has been encapsulated in its FactoryNXT framework that combines Mahindra's operating knowledge and engineering expertise to enable a micro-factory environment and testing of Digital Manufacturing technologies. The plant also acts as a co-innovation lab where a customer can learn solutions and then replicate them at scale in their factory environment.

Tech Mahindra has been providing many customers with multi-plant Industry 4.0 strategic road maps. Additionally, Tech Mahindra has developed a broad range of smart factory assessment toolkits and maturity journey mapping in its portfolio, including the 'Industry 4.0 Assessment Toolkit.' This toolkit is designed to understand customers' current maturity level and develop technology architecture and choices, multi-year road maps and project charters, high impact functional use cases, and associated financial business models.

Going forward, the vision of the company will be geared around its ManufacturingNXT construct that targets factory digitization and lean manufacturing as well as carbon footprint reduction. It focuses on software, business process services, design and engineering services, cybersecurity, and cloud, platforms, and network devices.

Strengths

Tech Mahindra has deep industry knowledge and a reliably constant industry focus. Despite lacking the scale of the bigger players, Tech Mahindra's offering spans all core process domains in the manufacturing industry, thanks to a number of industry solution partners. Delivery models — both onsite and offshore — are managed effectively.

Challenges

Tech Mahindra has shown the ability to bring innovation in the form of delivering its own IP solutions. However, the company does not have yet a strong element of differentiation.

Consider Tech Mahindra When

Companies that need to future proof their technologies at scale and seek a partner with deep smart factory knowledge and proficient resources should consider Tech Mahindra.

Wipro

Wipro is positioned in the Major Players category in this 2023-2024 IDC MarketScape for Smart Manufacturing Strategy Service Providers.

Wipro's coverage of the smart manufacturing space is deep and extensive, with 10,000 specialized resources in the field (including IIoT, edge computing, cloud, 5G, and AI) and 100+ solution and 2000+ patents IPs to accelerate projects. Examples include IoT (Wipro Looking Glass), digital twin (Wipro Smart-twin), AI (Wipro Holmes), process in a box (plant visibility and analytics), manufacturing IQ (cloud manufacturing intelligence), Looking Glass (an IoT platform), and Smart Twin, Cognitive Quality Genius, and Clairvoyance (an AR solution). The PARI acquisition has also brought physical automation and robotics capabilities, including automated guided vehicles. In addition, sister companies such as Wipro Infrastructure augment Wipro’s domain expertise in the OT space.

Notably, Wipro is a manufacturing company that owns and operates around 35 factories around the world.

To support manufacturers in their evaluation of smart manufacturing strategies, Wipro has established a consulting framework that consists of digital transformation (strategy, goals, and objectives), business process/digital process, and technology assessment as well as organization change management.

An “as-is” maturity assessment is a critical part of Wipro smart manufacturing strategy. It uses an end-to-end process analysis to determine current capabilities and bottlenecks and assess IT/OT maturity to enable the implementation of use cases aimed at the improvement of key business metrics. This assessment covers the majority of IT/OT infrastructure, control systems and networks, and physical automation and robotics.

Wipro has a strategic partnership with acatech - National Academy of Science and Engineering that had a key role in the development of Industry 4.0 concepts. Wipro has contributed to acatech's maturity model assessment and uses its methodology to carry out various Industry 4.0 assessments.

Wipro is committed to expanding its partner network as well as building frameworks and solutions to further improve real-time integration of data and equipment as well as key enabling technologies such as 5G, machine vision, AR/VR, and industrial metaverse. Wipro Ventures has active investments in and partnerships with 14 start-ups in the following areas: AI, business commerce, cybersecurity, data management, IIoT, fraud and risk mitigation, cloud infrastructure, and testing automation.

Strengths

Wipro can bring an integrated perspective that merges broad and deep technology and domain expertise and draws learnings and applies insights from one company or sector to another. Sister company Wipro Infrastructure augments capabilities in the OT space, making Wipro a perfect company to support “phygital” deployments.

Challenges

Despite the breadth of implementation coverage areas, Wipro may not have reached its full potential in terms of market penetration and number of deployed projects. Customers frequently comment that Wipro can be a bit cautious about supporting internal innovation when there is no clear request from the client or when it does not anticipate their demands. Customers might not be able to make use of Wipro's full innovation potential as a result.

Consider Wipro When

Manufacturers in need of an affordable, turnkey, fully packaged, end-to-end, integrated smart manufacturing solution that encompasses software, hardware automation, and digital innovation should consider Wipro.

APPENDIX

Reading an IDC MarketScape Graph

For the purposes of this analysis, IDC divided potential key measures of success into two primary categories: capabilities and strategies.

Positioning on the y-axis reflects the vendor’s current capabilities and menu of services and shows how well aligned the vendor is to customer needs. The capabilities category focuses on the capabilities of the company and product today. Under this category, IDC analysts will look at how well a vendor is building/delivering capabilities that enable it to execute its chosen strategy in the market.

Positioning on the x-axis or strategies axis indicates how well the vendor's future strategy aligns with what customers will require in three to five years. The strategies category focuses on high-level decisions and underlying assumptions about offerings, customer segments, and business and go-to-market plans for the next three to five years.

The size of the individual vendor markers in the IDC MarketScape represent the market share of each individual vendor within the specific market segment being assessed.

Each IT service provider evaluated in this IDC MarketScape can support the broad range of capabilities necessary for end-to-end smart manufacturing projects.

All vendors in this study ended up in their respective categories because of their ability to deliver across the variety of shop floor use cases necessary to support a successful transformation.

IDC MarketScape Methodology

IDC MarketScape criteria selection, weightings, and vendor scores represent well-researched IDC judgments about the market and specific vendors. IDC analysts tailor the range of standard characteristics by which vendors are measured through structured discussions, surveys, and interviews with market leaders, participants, and end users. Market weightings are based on user interviews, buyer surveys, and the input of IDC experts in each market. IDC analysts base individual vendor scores, and ultimately vendor positions on the IDC MarketScape, on detailed surveys and interviews with the vendors, publicly available information, and end-user experiences in an effort to provide an accurate and consistent assessment of each vendor's characteristics, behavior, and capability.

Market Definition

In this study, evaluate the capabilities of key service providers to advise about factory roadmaps and support smart factory strategies. The following areas are covered:

- Operational Excellence Improvement
- Asset Discovery
- Maturity Assessment
- Use Case Evaluation and Roadmap
- Change Management
- Customer Partnerships

Strategies and Capabilities Criteria

Table 1 and Table 2 provide key strategy and capability processes, respectively, which IDC recommends as integral in successfully selecting a service vendor or partner for Smart Manufacturing Strategy.

TABLE 1

Key Strategy Measures for Success: IDC MarketScape: Worldwide Smart Manufacturing Strategy Service Providers 2023-2024 Vendor Assessment

Strategies Criteria	Definition	Weight (%)
Functionality or Offering Strategy	Ability to match evolving business needs	70
	Rate of introduction of new solutions in core areas	
	Planned Service Offering (intoduce next year)	
Growth	Customer growth	23
	Financial growth	
	Industry expertise growth	
Financial/Funding	Profit and Growth	3
Other	Customer engagement	5
Total		100

Source: IDC, 2023

TABLE 2

Key Capability Measures for Success: IDC MarketScape: Worldwide Smart Manufacturing Strategy Service Providers 2023-2024 Vendor Assessment

Capabilities Criteria	Definition	Weight (%)
Functionality or Offering	Essential capabilities	80
	Implementation method	
	Product specific features	
Customer Satisfaction	Customer satisfaction	5
	Analyst judgement of customer satisfaction	
Customer Service Delivery	Geographic Footprint of Support	10
	Domain Expertise of Support (outside of IT support)	
Portfolio Benefits	Partnerships	5
Total		100

Source: IDC, 2023

LEARN MORE

Related Research

- *IDC Marketscape: Worldwide Discrete Manufacturing Execution System Vendor Assessment* (IDC #US49435422, April 2023)
- *IDC Marketscape: Worldwide Process Manufacturing Execution System Vendor Assessment* (IDC #EUR150526323, April 2023)
- *IDC Marketscape: Worldwide Hi-Tech Manufacturing Execution System Vendor Assessment* (IDC #US49435722, April 2023)
- *IDC MarketScape: Worldwide Engineering-Intensive Manufacturing Execution Systems 2023 Vendor Assessment* (IDC #US49435622, April 2023)

Synopsis

This IDC MarketScape provides an assessment of smart manufacturing strategy service providers and discusses the criteria companies should consider when selecting a vendor.

"Today, companies are going through a massive cultural change, with manufacturing operations transforming from key enablers of the fulfillment process to key enablers of business transformation and business reinvention. However, companies are finding themselves with so much available technology that they cannot even identify the right business cases. So, instead of inadequate technology, they now face the problem of inadequate business, IT, and digital strategy definition processes. In this context, the role of service providers is very relevant as they deliver the necessary breadth of portfolio and strategic vision to enable manufacturers to fully embrace smart manufacturing opportunities." Lorenzo Veronesi, Associate Research Director for IDC Manufacturing Insights.

About IDC

International Data Corporation (IDC) is the premier global provider of market intelligence, advisory services, and events for the information technology, telecommunications, and consumer technology markets. With more than 1,300 analysts worldwide, IDC offers global, regional, and local expertise on technology, IT benchmarking and sourcing, and industry opportunities and trends in over 110 countries. IDC's analysis and insight helps IT professionals, business executives, and the investment community to make fact-based technology decisions and to achieve their key business objectives. Founded in 1964, IDC is a wholly owned subsidiary of International Data Group (IDG, Inc.).

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