

IDC MarketScape

IDC MarketScape: Worldwide Smart Manufacturing Service Providers 2021 Vendor Assessment

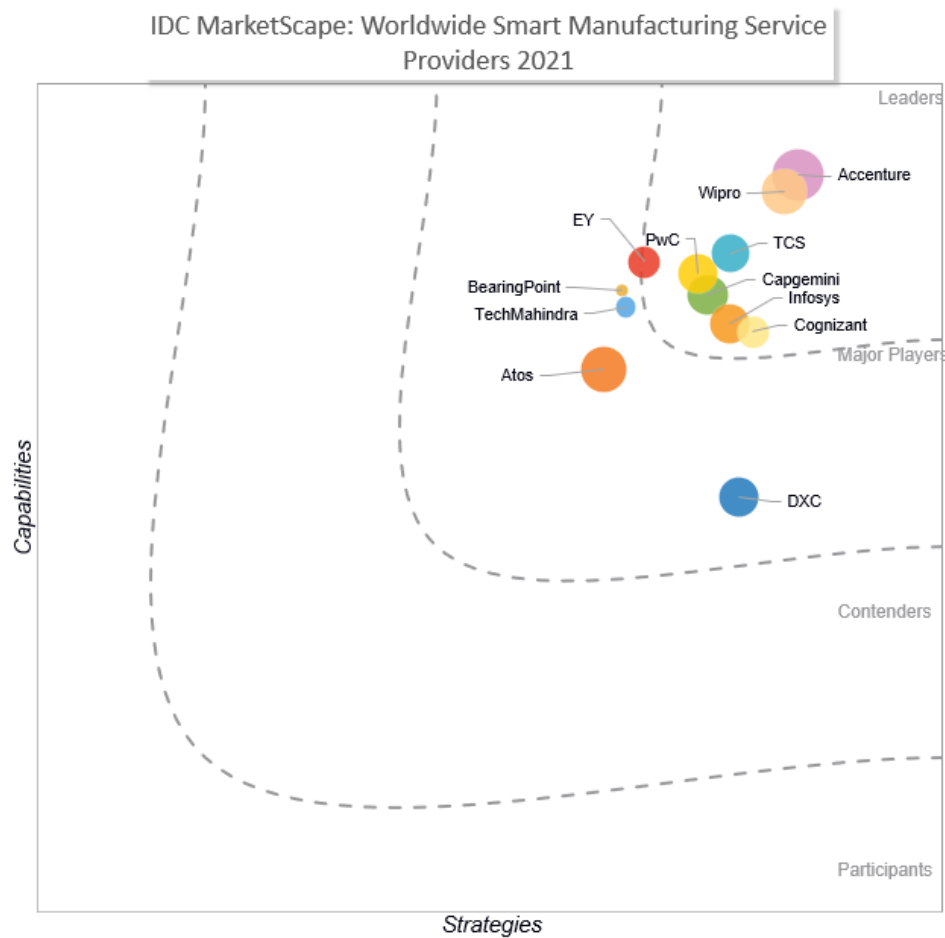
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THIS IDC MARKETSCAPE EXCERPT FEATURES CAPGEMINI

IDC MARKETSCAPE FIGURE

FIGURE 1

IDC MarketScape: Worldwide Smart Manufacturing Service Providers 2021 Vendor Assessment



Source: IDC, 2021

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

IN THIS EXCERPT

The content for this excerpt was taken directly from IDC MarketScape: Worldwide Smart Manufacturing Service Providers 2021 Vendor Assessment (Doc # EUR147689021). All or parts of the following sections are included in this excerpt: IDC Opinion, IDC MarketScape Vendor Inclusion Criteria, Essential Guidance, Vendor Summary Profile, Appendix and Learn More. Also included is Figure 1.

IDC OPINION

IDC defines smart manufacturing as the continuous process by which enterprises leverage cyberphysical convergence and digital skills to develop the production capabilities necessary to compete in the modern economy. Faced with today's business complexity and the need to balance factory capability with volatile demand across elongated and dynamic supply chains, manufacturers need to harmonize, supervise, and coordinate execution activities across the company's and its suppliers' manufacturing operations – with a greater level of real-time visibility.

Firms also have to improve and ensure quality, efficiency, and flexible capacity utilization. Thanks to technology, every step in a modern manufacturing plant can potentially be digitized and made visible in real time. Therefore, factories are now "data hungry." The production process will be increasingly defined and supported by a continuous interplay of and information hand-over between workers, machines, and business applications. Workers will be freed from repetitive tasks and empowered by technology to focus on value-added activities such as production optimization and business reinvention.

This 2021 IDC MarketScape for worldwide smart manufacturing services looks at 12 IT services firms that through their services (business consulting, IT consulting, systems integration, application development, business outsourcing, IT outsourcing, IT deployment support, IT education and training) support the development of key use cases in the smart manufacturing space such as:

- Production scheduling and execution (including material tracking and integration with supply chain fulfillment)
- Real-time process visibility and analytics (e.g., real-time process status and overall equipment effectiveness or OEE/other KPIs)
- Manufacturing process innovation (including digital tools for process design, simulation and optimization, and process/asset digital twins)
- Asset instrumentation and integration, including smart tools (IT-OT convergence, edge, controls standardization, Industrial Internet of Things or IIoT, networking)
- Predictive asset monitoring and diagnostics in production
- Augmented (AR-supported, digitally enabled) and connected workers
- Energy and environmental management, worker safety and health tracking
- Quality inspection and quality analysis (possibly autonomous, AI-driven), root cause analysis, and collaborative issue resolution

Most of these firms offer a broader range of services alongside manufacturing industry tools. However, for the purpose of this document, we are only assessing services dedicated to solving key smart manufacturing operational and IT challenges. This research is both a quantitative and qualitative assessment of characteristics and capabilities that affect a vendor's success in delivering smart manufacturing transformation for manufacturers in any industry.

Throughout the assessment, three common opportunities/challenges emerge that IT services firms must address:

- **Create the vision.** Building a solid shop floor digital transformation (DX) road map is an extremely complex process for the average manufacturing company due to the heterogeneity of the vendor ecosystem and the need to tightly align technology with business results. We see that this is driving many service providers to supply road map and business transformation services to help customers jump-start their smart manufacturing projects.
- **Manage brownfield innovation.** Only a fraction of smart factory projects relate to greenfield environments. Hence, when it comes to technology implementation, evolution and revolution must coexist. As such, a key issue lies in rolling out technologies such as IIoT, edge, multicloud, and AI in the context of existing (and aging) technological/production legacy. In this context, service providers can drive value by integrating and optimizing legacy equipment and making sure new technology projects hit the floor running without causing disruption to the main processes.
- **Create information experience for key users.** The transformation into the "factory of the future" is information driven and, therefore, user centric. Every asset produces a wealth of information that must be reconciled with process execution and with workers' activity management. Key business leaders at the frontline of the execution process need the right information at the right time, scripted at the right job level to be able to transform the way they work and drive operational improvement. Creating an engaging and "consumable" information experience is a driving factor to ensure technology adoption rates are high and the business impact of DX projects in the factory is raised as much as possible.

Although IDC would not hesitate to recommend any of the vendors included in this assessment, to mitigate the challenges, manufacturers looking at these bets should consider the following:

- Industry track record
- Implementation method and the availability of "accelerators" to drive time to value and value for money
- Range of services offered
- If available, expertise outside of IT to drive operational improvement
- Geographic footprint of support and delivery capabilities
- Implementation/development of partnerships and their range and relevance to a given vertical
- Presence of packaged solutions that can be relevant to a given project
- The ability to match the industry's evolving business needs as well as the clarity and breadth of the road map to secure a long-term relationship

IDC MARKETSCOPE 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 more efficiently identify the appropriate fit to support their respective smart manufacturing transformation goals and needs.

Many service providers are offering smart manufacturing services to the manufacturing industry. The vendor inclusion criteria for this study were chosen to best portray vendors that are representative of the smart manufacturing services buyers' selection list. This study cannot replace the due diligence that should be done as part of the selection of a services firm, but it is useful as a data point into a manufacturer's decision-making process to sharpen the vendor evaluation

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

Other criteria have been set as follows:

- A minimum market share is not required, but the vendor must have an established international reputation in the manufacturing industry, specifically addressing the domains being analyzed.
- A minimum revenue threshold is not mandatory. The vendor should have more than \$100 million in estimated total revenues in the worldwide manufacturing industry for calendar year 2019.
- The vendor needs to offer a variety of services that are specific to support manufacturers' smart manufacturing initiatives. Ideally, the vendor should have a proven expertise and coverage in at least five of the following eight use cases:
 - Production scheduling and execution (including material tracking and integration with supply chain fulfillment)
 - Real-time process visibility and analytics (e.g., real-time process status and OEE/other KPIs)
 - Manufacturing process innovation (including digital tools for process design, simulation and optimization, and process/asset digital twins)
 - Asset instrumentation and integration, including smart tools (IT-OT convergence, edge, controls standardization, IIoT, networking)
 - Predictive asset monitoring and diagnostics in production
 - Augmented (AR-supported, digitally enabled) and connected workers
 - Energy and environmental management, worker safety and health tracking
 - Quality inspection and quality analysis (possibly autonomous, AI-driven), root cause analysis, and collaborative issue resolution
- The vendor must deliver services to manufacturing companies in at least five of the 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

For manufacturers either embarking on or continuing their shop-floor transformation journey with the help of service providers, IDC offers the following guidance.

Make Sure the Project Scope and Value Are Clearly Defined

The good side of partnering with service providers is that these companies have a wide array of technologies and industry competencies at their fingertips, so customers could potentially ask almost anything from them. But to ensure a positive outcome, make sure the vendor can help you prioritize different projects and their activities by value. This means asking for a technology road map and a value road map that links key projects' steps with defined and agreed business outcomes. Think about the long-term solution and how it would be supported and get the vendor to commit how that will look and be implemented. In this process, knowing what you want is essential to avoid the provider dictating the strategy and risking unwanted projects creeping through. As one customer put it, "if you want to innovate, you will have to drive, otherwise the vendor will drive to innovate everything." Another customer states, "be cautious what you wish for because vendors

will deliver it." Your partner will always find a way to meet your requirements, so it is essential that it is well specified.

Look at the Long-Term Picture

As one company put it, "do not limit your request to the immediate business needs." Instead, leverage the vendor to help you develop a transformation strategy that is visible and has a long-term view. In this regard, consider the overall expertise of your IT service supplier; sometimes, expertise levels can vary across technologies and business domains so it is important to have a holistic view of the vendors, including their partners across all functional areas, that may be also covered in the future.

The Burden Around Project Execution Is on Both Sides

While it is important that you can work with your chosen vendor as a true partner, enabling them to define the right solution and solve the problem, do not get too comfortable – it is critical to stay in control. To that end, ensure that you have dedicated program management and domain resources in place as part of your contractual agreement. At the same time, make sure you have the resource and time for sufficient flexibility as requirements will change over the course of the project.

Look Out for – and Insist on – Skills with Domain Expertise

As one company told us, "the secret is to develop a close relationship with the vendor because the devil is in the details." While the vendor is expected to act as an orchestrator in managing the team and executing the project, be specific about which skills you prefer. Voice your feedback regularly, to the point of putting it into writing, so that the supplier puts the right program management and domain people in place for the project.

To get higher value out of the resources dedicated to you, try to not focus on one project only but on multiple ones over a longer term. This will enable you to get a feel for the team and optimize resources that work best for you.

Communication Is Key

Open communication is of paramount importance in nurturing the relationship and building trust (rather than the reciprocal perception of simply giving and taking orders) but try to do so in tandem with an agile setup. Part of a good communication approach also means that you are always "in the know" about one project or multiple ones. A common issue that customers reported is that sometimes vendors also need active guidance from the customer to suggest relevant innovation. To that end, exercise frequent and constant feedback between your organization and the vendor organization. Take your time to understand their main expertise and their culture.

The vendor should act as a designer and advisor in helping you to implement, but be cautious on the entire change management part, the communication, and the approach.

Minimize Change Management by Relying on Users' Input

Large transformation processes require careful change management activities to be successful. First, make sure you achieve internal alignment before you engage with the vendor to set expectations properly. Always think from a user-integrated view (i.e., what kind of work has to be executed, what the user needs, how users interact with the system). To this end, people that actually perform the shop floor activities will provide the most powerful input to the solution.

So, as an interviewed company states, "there has to be an integrated methodology to go through all processes in the factory and understand where digital can contribute, how to use people time effectively, and how to drive value in their day-to-day activities"

VENDOR SUMMARY PROFILES

This section briefly explains IDC's key observations resulting in a vendor's position in the IDC MarketScape. While every vendor is evaluated against each criterion outlined in the Appendix, the description here provides a summary of each vendor's strengths and opportunities.

Capgemini

Capgemini is positioned in the Leaders category in this 2021 IDC MarketScape on Worldwide Smart Manufacturing Service Providers.

Capgemini Digital Manufacturing (DM), one of the group's seven strategic offers, is part of the Intelligent Industry service. Capgemini's services for smart manufacturing are part of the DM offering and are delivered in synergy with digital engineering (PLM, in which Capgemini is heavily leveraging the Altran acquisition) and digital services (digital customer services). Smart manufacturing services span across many business lines (consulting, applications development, insights and data, digital manufacturing and engineering services, and cybersecurity) and organized by target industries, of which aerospace, automotive, CPG, and life sciences are the most important ones. Key logos include Unilever, Renault, Saab, PMI, Baker Hughes, Eramet, Schneider Electric, Airbus, Boeing, PSA Group, BMW, GE, Volkswagen, STMicroelectronics, TE Connectivity, and P&G.

Over time, Capgemini has built several distinctive capabilities as a smart manufacturing service provider. For example, the Intelligent Operations Platform is an open source infrastructure-as-a-service (IaaS) reference architecture that supports the concept that data must be organized to enable the creation of meaningful use cases, and the underlying technology should be implemented at speed and integrated with the existing technology stack. The company also provides a value-based road map tool, designed around a succession of use cases that contribute short-term financial returns and capabilities toward self-optimizing operations. Capgemini's Digital Maturity Assessment (DMA) tool helps clients assess the current state and level of their digital maturity across the board.

Capgemini's approach is geared around co-innovation with its clients and partners, both large technology partners as well as small start-ups that have deep expertise but do not have the scale to serve large manufacturers. Capgemini can integrate innovators into its ecosystem and act as a bridge between them and worldwide companies.

Going forward, Capgemini has a strong base for leveraging this network and ecosystem to deliver meaningful solutions to the market in addition to its existing technology investments (in 5G and around the Altran acquisition).

Strengths

Customers praised Capgemini's ability to design and deploy a broad catalogue of technologies as well as its capabilities around DX road map identification using a value-driven approach.

Challenges

Some customers reported to be aware of the change management process that, if not addressed properly, could slow down the transition from road map identification to execution.

Consider Capgemini When

Capgemini is a good fit for companies with a global footprint at an early stage in their smart manufacturing journeys and for companies with a need for global and diverse technology rollouts.

APPENDIX

Reading an IDC MarketScape Graph

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

Positioning on the y-axis reflects the vendor's current capabilities and menu of services and how well aligned the vendor is to customer needs. The capabilities category focuses on the capabilities of the company and product today, here, and now. 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 judgment 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 to provide an accurate and consistent assessment of each vendor's characteristics, behavior, and capability.

Market Definition

IDC defines smart manufacturing as the continuous process by which enterprises leverage cyberphysical convergence and digital skills to develop the production capabilities necessary to compete in the modern economy.

LEARN MORE

Related Research

- *IDC's Worldwide Digital Transformation Use Case Taxonomy, 2020: Technology-Oriented Value Chains in the Manufacturing Industry* (IDC #US44304120, June 2020)
- *IDC's Worldwide Digital Transformation Use Case Taxonomy, 2020: Asset-Oriented Value Chains in the Manufacturing Industry* (IDC #US44302220, June 2020)
- *IDC's Worldwide Digital Transformation Use Case Taxonomy, 2020: Brand-Oriented Value Chains in the Manufacturing Industry* (IDC #US46449919, June 2020)
- *IDC's Worldwide Digital Transformation Use Case Taxonomy, 2020: Engineering-Oriented Value Chains in the Manufacturing Industry* (IDC #US46381512, June 2020)

Synopsis

This IDC MarketScape provides an assessment of smart manufacturing service providers supporting end-to-end smart manufacturing programs and transformation initiatives. This study specifically analyzes these offerings with a view of worldwide service capabilities.

"Faced with today's business complexity and the need to balance factory capability with volatile demand across elongated and dynamic supply chains, manufacturers need to harmonize, supervise, and coordinate execution activities across the company's and its suppliers' manufacturing operations – with a greater level of real-time visibility," said Lorenzo Veronesi, research manager for Smart Manufacturing Strategies at IDC. "In this context, many service providers offer smart manufacturing services to the manufacturing industry. These vendors are investing significantly in their very own smart manufacturing solutions and IP, and they have proven capabilities to deliver successful end-to-end transformation projects."

About IDC

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