IDC MarketScape: Worldwide Manufacturing Intelligence Transformation 2020 Vendor Assessment
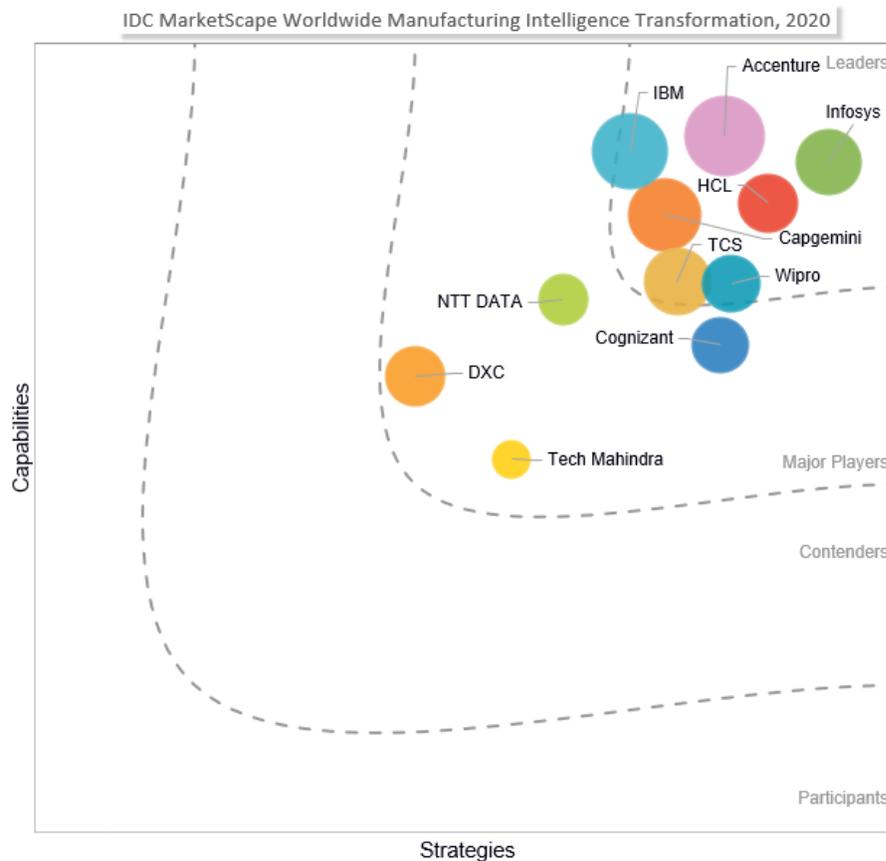
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THIS IDC MARKETSCAPE EXCERPT FEATURES IBM

IDC MARKETSCAPE FIGURE

FIGURE 1

IDC MarketScape Worldwide Manufacturing Intelligence Transformation Vendor Assessment

Source: IDC, 2020

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 Manufacturing Intelligence Transformation 2020 Vendor Assessment (Doc # US46844820). 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

This IDC study represents the vendor assessment model called IDC MarketScape. This research is a quantitative and qualitative assessment of the characteristics that explain a vendor's success for intelligence transformation (IX) in the manufacturing industry and help assess current and anticipated performance. IDC defines intelligence transformation as an organization's ability to synthesize the information it needs to learn and to apply the resulting insights at scale. Dimensions of intelligence transformation include data discovery, value development, value realization, knowledge and collaboration, and information architecture. In addition, a key component of IX is applying technologies such as business analytics, big data, and information and data management, usually in combination with other 3rd Platform technologies and innovation accelerators (cloud, mobile, social, Internet of Things [IoT], AR/VR, cognitive/artificial intelligence [AI]/ML, etc.). A companion to this document is *IDC MarketScape: Worldwide Manufacturing Intelligence Transformation Strategic Consulting 2020 Vendor Assessment* (IDC #US46844920, forthcoming). This study assesses the capability and business strategy of 11 of the prominent information technology (IT) service providers for IX projects that include:

- Application development, maintenance, and support
- System implementation, systems integration, data integration, and infrastructure outsourcing
- BPO and outsourcing of business processes like customer support, call centers, warranty registration, and any other ongoing repetitive processes, such as report generation (monthly/weekly/quarterly data analysis)

This evaluation is based on a comprehensive framework and a set of parameters expected to be most conducive to success in providing IT services for IX in both the short term and the long term. Key findings include:

- Intelligence transformation in manufacturing, as defined in this study, is one of the pillars of digital transformation (DX). In its simplest terms, IX services enable manufacturers to define and execute against an intelligence strategy that capitalizes on the value of data that is and will become available to manufacturers and to embed intelligence in how manufacturers manage their operations and deliver products and services. Key elements include the ability to synthesize information, the capacity to learn, and the delivery of insights at scale.
- All 11 vendors included in this IDC MarketScape bring notable capability to the space, although they offer varying approaches to IX and its subcategories. All of them face competition from niche service providers as well as other IT suppliers at times. However, these other categories of competitors have not committed to providing the wide range of services and depth and breadth that we find in the vendors included in this research. In addition to the specific capabilities noted in this study, they dedicate significant resources to developing a partner ecosystem that is broad and diverse to ensure that they are continually innovating in their approach.

- IT service providers' global network of delivery centers and centers of excellence (COEs) support ongoing development and delivery of IX. This includes traditional analytics, big data, and advanced analytics, as well as increasingly incorporating other 3rd Platform technologies and innovation accelerators.

- The criteria used in this IDC MarketScape on IX in manufacturing (and the resulting position of the vendors in Figure 1) are across dual dimensions of strategy (future plans and where the vendor is headed) and capability (where the vendor is today in terms of capabilities). Each of the elements within strategy and capability is then assigned a weighting based on the relative importance of each criterion in the opinion of IDC Manufacturing Insights and feedback from manufacturing customers.

- The results of this study reveal differences in experience by subindustry and delivery approach, and this information can be useful to manufacturers as they evaluate IT service providers in the SI/BPO/consulting space. How the vendor locates resources and what industries are most heavily represented in its customer list are two useful points of information.

- This IDC MarketScape is a starting point for manufacturers that are evaluating IT services vendors for help with implementation of IX projects. It is a "short list," if you will – a way to initially winnow down the long list of providers that exist in the marketplace. It does not replace the "due diligence" that companies must then complete to select the ultimate vendor for assistance in an intelligence transformation initiative.

IDC MARKETSCAPE VENDOR INCLUSION CRITERIA

Intelligence transformation is a work in progress for many manufacturers. Far too many organizations learn and apply knowledge in silos (customers, operations, and finance) and one transaction/activity/data point at a time, leading to many challenges and limits the success of IX initiatives. The most advanced manufacturers can accelerate the pace of sophisticated analysis, the mix of data and data types, and the ability to optimize and predict business decisions. To gain competitive advantage and become increasingly customer centric, manufacturers must adapt their classic data management approaches to master a differentiated information value chain.

For the purposes of this IDC MarketScape, and any subsequent research on the topic from IDC Manufacturing Insights, we are defining services for intelligence transformation to include a combination of services, tools, and methodologies to support the development of an information strategy, ongoing information management, and increasing embedded intelligence and value from data. This includes analytics and visualization tools for IX and the ability to integrate across enterprise systems.

There are many IT service providers that offer services around manufacturing processes that comprise intelligence transformation. For the purposes of this IDC MarketScape, we are focusing on players with annual revenue of $500 million or greater. In addition, each vendor had to be able to support global deployments and have at least 10% of its revenue stemming from the manufacturing industry. We define manufacturing very broadly, including consumer products; chemicals, pulp and paper, metals, and other process manufacturing segments; automotive, aerospace, farm, construction, and industrial machinery and other discrete manufacturing segments; and high-tech equipment and components. (Note that our definition did not always align with the 11 vendors included in this study.)

ADVICE FOR TECHNOLOGY BUYERS

- **Pay attention to industry-specific domain knowledge and capabilities.** Services providers have varying levels of expertise across segments (automotive, chemicals, etc.) and business processes (R&D, supply chain, plant floor, service, etc.). This combination of industry-specific needs and deep process understanding enables them to identify and recommend "best practices" that enable projects to deliver value and scale quickly. Therefore, understanding how the services provider addresses the business process within your industry segment is essential. If it's through packaged IP in the form of tools, ensure that the provider's project leadership will make sure the tools work together for one solution; references commonly cited extra work being needed to make the solutions work for their specific company. Operational technology (OT) and cybersecurity are two areas that should be paid close attention to for most manufacturers focusing on intelligence transformation.

- **Look to providers to supplement internal skills gaps.** Manufacturers have been combating a talent gap across their organization for years. IX projects in particular lack the necessary resources and knowledge around data science, decision science, and data architecture skills to take advantage of latest technology and AI/ML. All the service providers in this IDC MarketScape have made commitments to expand the manufacturing expertise of their workforce, hiring directly from the industry.

- **Consider the advantages of working with a services provider that already knows your business.** Multiple references indicated that they selected a provider based on the provider's knowledge of their systems or their products and processes and how that knowledge allowed the project to move forward more quickly.

- **Focus on becoming a data-driven organization.** The ability to synthesize information does not mean delivery of more reports, dashboards, or other human consumable indicators of past performance or status of operations. It should focus on delivering actionable information in the context of its recipient. This is where true value can be derived and what will differentiate successful companies from those that struggle to compete.

- **Do not let data quality challenges hold back IX projects.** All of the providers in this study were able to help customers make forward progress without doing an all-encompassing data quality initiative. In some cases, they built some degree of data quality automation into the project or they established a parallel data quality-as-a-service initiative.

- **Pay close attention to the AI capabilities/strategy.** It is clear that artificial intelligence will be a key technology for the industry as more manufacturers progress down their transformation initiatives. While AI is a hot topic across space, there is usually work that needs to be completed before a manufacturer can start taking advantage. Challenges around the data, both access to enough data and data clean up, are commonly cited as inhibitors to AI adoption.

- **Understand how the services providers structure their interactions and populate the project teams.** In countless interviews with manufacturers, there was consistent advice to ensure that the way the services firm balanced onshore needs with offshore resources matched what the manufacturer needed. In the wake of COVID-19, this balancing and the ability to offer remote assistance have become even more pressing. This approach varies by services provider, and it is worth an extensive discussion up front to be certain the right expectations are established to support the initiative.

- **Understand the delivery infrastructure the service providers offer, and how they innovate with the partners in their ecosystem.** Given the global nature of most manufacturers' businesses, and the potential for many IX projects to span geographies, it is important to understand what resources service providers have located in each region, including delivery centers and domain-specific FTEs, with most providers expanding their local presence. In addition, most

service providers have built centers of excellence around various IX and innovation accelerator domains. They often rely on COEs and other centers to strengthen their ability to leverage partners' capabilities and to foster the kind of innovation that is often only found in academia or in start-ups.

▪ **Use this IDC MarketScape as part of the vendor evaluation process.** Use this IDC MarketScape in contract negotiations and as a tool to not only short list vendors for IX service bids but also evaluate vendors' proposals and oral presentations. However, this should only be one part of your vendor selection process. It is important to also collaborate with internal SMEs and build KPIs/characteristics that you are looking for in a provider.

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 of the criteria outlined in the Appendix, the description here provides a summary of each vendor's strengths and challenges.

IBM

IBM is positioned in the Leaders category in this 2020 IDC MarketScape for worldwide manufacturing intelligence transformation.

IBM is a multinational corporation providing business consulting, information technology, and outsourcing services, with headquarters in Armonk, New Jersey. Founded in 1911, IBM employs more than 380,000 employees, with 55 delivery centers globally. IBM has over 5,000 manufacturing clients, with roughly 80% of its manufacturing clients engaged in IX services. IBM customers are distributed across all manufacturing segments, with discrete manufacturing representing its top segment. IBM has manufacturing customers across the globe, with North America representing the largest geography at 56%, and 90% of its manufacturing clients have revenue greater than $250 million.

Key IBM assets for IX include IBM Maximo, Product Optimization, IoT for Factories, Digital Shop Floor, Dynamic Inventory Optimization Solution (DIOS), Tririga, Siview/Giview, Equipment Maintenance Assistant (EMA), Supply Chain Scenario Modeler (SCSM), and Enterprise Production Planning and Optimization System (EPOS). IBM's projects span many IX dimensions and manufacturing outcomes, with most customers focusing on supporting stages 3 (architected information), 4 (integrated information), and 5 (embedded intelligence) of IDC's IX Maturity Model. Some of the complex IX engagements include a global consumer product company looking to digitalize its manufacturing operations to drive performance improvements across manufacturing areas such as product changeovers, quality, and predictive maintenance. The client implemented a standard architecture and connected the required production data sources, sensors, and wearables where needed. This has been implemented across 20 sites globally so far, with the development and roll out of additional use cases to follow.

IBM's acquisition strategy will focus on assets that help manufacturers drive revenue and measurable business value in areas such as asset optimization and Industry 4.0. Recently, IBM acquired Oniqua, to build out its MRO and spare parts management offering. As part of the acquisition, IBM Services will acquire from Oniqua a team of professionals with key skills in MRO inventory optimization, data engineering, data science, and predictive and prescriptive analytics. Over the next two to four years, IBM plans on focusing on the following to bolster its IX offering:

- Leveraging IBM's resources in marketing, R&D, security, AI, and edge and its own manufacturing facilities to further improve and innovate
- Establishing self-funding IoT models as a commercial construct with clients enabling project payback, typically within 6-12 months
- Enhancing IoT solutions through the use of enabling and supporting technologies like blockchain, AI, and edge
- Creating digital innovation centers for skill development and client immersion, focusing on "connected experiences" versus point solutions

Strengths

IBM brings together a strong focus on the manufacturing industry, technical/functional expertise, and innovation with new technologies such as IoT and AI. IBM has a large install base from Maximo in the manufacturing industry and strong relationships executives, which helps with name recognition. Furthermore, the breadth of the company's range of services and capabilities allows IBM to provide a holistic offering related to IX, which is a considerable strength. One reference praised the expertise (functional and technical) of IBM's employees, stating they try to hire them whenever possible. References also noted that the value delivered on their IX projects have consistently been above and beyond what they expected. IBM's robust partner ecosystem is also viewed as a strength in the IX space.

Challenges

IBM must continue to develop IX capabilities and IP for the manufacturing industry to maintain its market position. References stated that IBM could do a better job regarding project management – more organization and discipline could help with communication and reduce delays. Also IBM could be more proactive when it comes to sharing the long-term road map and company direction. Another reference noted that the size of IBM could be a challenge at times, desiring a faster response at times, however, the reference noted this did not have a significant impact on the overall project.

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 represents the market share of each individual vendor within the specific market segment being assessed.

For this IDC MarketScape on worldwide manufacturing intelligence transformation, because we are evaluating 11 vendors that are dominant in terms of market share and presence (rather than niche players), all of the vendors ended up within either the "Major Players" or the "Leaders" segment of the IDC MarketScape. These vendors have all demonstrated depth of experience with global 1,000 companies in this area. And while we have outlined some of the differences of offerings and strengths within the individual vendor profiles, IDC Manufacturing Insights would not hesitate to recommend any of them to a manufacturer evaluating this space.

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 in an effort to provide an accurate and consistent assessment of each vendor's characteristics, behavior, and capability.

Market Definition

IDC defines IX as an organization's ability to synthesize the information it needs to learn and apply the resulting insights at scale to transform. Dimensions of intelligence transformation include data discovery, value development, value realization, knowledge and collaboration, and information architecture. In addition, a key component of IX is applying technologies such as business analytics, big data, and information and data management, usually in combination with other 3rd Platform technologies and innovation accelerators (cloud, mobile, social, IoT, AR/VR, cognitive/AI/ML, etc.). Leaders in intelligence transformation can treat data and information as they would treat any critical business asset – with investments in people, processes, and technologies that acknowledge information's strategic importance and with a road map to maximize information's contribution to business' success.

The following are selected service capabilities/offerings for IX in manufacturing that vendors were evaluated against in the areas of business process focus:

- Customer relationship management (sales, contact center, marketing, website, and price)
- Supply chain execution (procurement, logistics, production plans, supplier, and inventory)
- Production/supply chain planning (demand, supply, production, and S&OP)
- Product (new product design, costing, product quality, compliance, sustainability, and product portfolio)
- Enterprise quality (in products and processes)
- Plant performance (manufacturing intelligence, OEE, output quality, environment, energy, and compliance)
- Asset performance management (maintaining owned assets)
- Service (new service design and delivery, warranty, customer service, field service, and supporting sold products)

Among the considerations for engaging with an IX services firm is its experience in vertical markets and its presence in each geography. Often the geographic presence indicates how well the provider can offer onshore resources to meet customer needs. While there is a concentration of customers in North America and Europe for most of the vendors, there is an increasing opportunity in emerging markets for these companies, and we expect to see growth continue in these regions. Another consideration is the level of experience the vendor has within a certain vertical market or manufacturing segment.

LEARN MORE

Related Research

- *IDC MarketScape: Worldwide Manufacturing Intelligence Transformation Strategic Consulting 2020 Vendor Assessment* (IDC #US46844920, forthcoming)
- *Ensuring Safe and Efficient Operational Restarts in Manufacturing, 2020* (IDC #US46646920, July 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)
- *IDC's Worldwide Digital Transformation Use Case Taxonomy, 2020: Technology-Oriented Value Chains in the Manufacturing Industry* (IDC #US44304120, June 2020)
- *Digital Transformation in Manufacturing: Sustainability Further Enhances Growth and Profits from Digital* (IDC #US46624418, June 2020)
- *Making the Case for Machine Learning in Manufacturing* (IDC #US46179220, April 2020)

Synopsis

This IDC study uses the IDC MarketScape model to provide an assessment of 11 service providers participating in the worldwide manufacturing intelligence transformation market. The IDC MarketScape is an evaluation based on a comprehensive framework and a set of parameters that assesses providers relative to one another and to those factors expected to be most conducive to success in a given market during both the short term and the long term.

"Intelligence transformation (IX) is an essential pillar of digital transformation and the future of intelligence. IX services play a critical role in a manufacturer's ability to synthesize information, generate value from data, and deliver that value at scale. IX service providers must be able to help manufacturers embed intelligence into how they develop, source, produce, service, market, and sell their products and services," says Reid Paquin, research director for IDC Manufacturing Insights' IT Priorities and Strategies Practice.

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. IDC helps IT professionals, business executives, and the investment community make fact-based decisions on technology purchases and business strategy. More than 1,100 IDC analysts provide global, regional, and local expertise on technology and industry opportunities and trends in over 110 countries worldwide. For 50 years, IDC has provided strategic insights to help our clients achieve their key business objectives. IDC is a subsidiary of IDG, the world's leading technology media, research, and events company.

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