

Manufacturing Industry Services and Solutions

A research report comparing provider strengths,
challenges and competitive differentiators

Customized report courtesy of:





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The manufacturing industry is undergoing a major shift in the usage of technologies across the value chain

The manufacturing industry has undergone a dramatic transformation over the years and more so recently. Rising inflation, regional conflicts, supply chain issues and talent management (attracting and retaining employees) are some pressing issues the industry faces. Thus, companies are looking to embrace digital transformation initiatives in smart manufacturing, supply chain and aftermarket services. A recent ISG study on smart manufacturing reveals that productivity improvements, cost savings and supply chain resilience are the biggest motivators for starting smart manufacturing initiatives. Modern manufacturing firms also need a well-defined aftermarket sales and service strategy to drive CX and operational efficiency by integrating aftermarket offerings into core business processes.

Manufacturing companies continue to look at technology investments in AI, AR, VR, cloud, digital twin, blockchain and others to reshape key operations and business processes. Post-COVID-19, companies are also looking to shift their manufacturing base closer to home (nearshoring and reshoring) to reduce supply chain issues and drive competitive advantage.

Furthermore, global manufacturing will likely make sustainability and net zero the key focus areas for 2023 and beyond. Stakeholders and consumers increasingly challenge manufacturers to adopt more sustainable and environment-friendly manufacturing practices across their value chain.

ISG notes the following trends in the global manufacturing industry for 2023–24:

Smart manufacturing and product lifecycle management (PLM)

With connected operations powered by AI and ML, further facilitated by cloud and 5G networks to move information to the edge, today's factories will likely be transformed into the plants of the future, revolutionizing the manufacturing ecosystem. The transformation

A balanced mix
of capabilities
around **engineering,
technology and
business** is driving
differentiation



will facilitate end-to-end real-time supply chain planning and network optimization, shopfloor visibility, predictive asset maintenance, product portfolio optimization and demand forecasting. Companies have moved from IT/OT to IT-OT-ET convergence, signifying the need for engineering capabilities to drive factory automation. As manufacturing companies drive digital transformation initiatives, PLM will play a key role in enabling the outcomes. PLM will help companies innovate, create more resilient products and supply chains, promote sustainability practices and drive the use of data analytics for better decision-making.

The rise of digital twin

A digital twin is a virtual representation of a physical process or product to drive real-world simulation and decrease future anomalies. It's a setup where data connects the hardware and software. Companies increasingly integrate virtual models and digital twins to drive effective operations and product innovation cycles. Digital twins are becoming important for discrete and process manufacturing companies to enable better designs, optimize processes

and speed up engineering. Companies like Siemens and Schneider Electric are driving the adoption of digital twins, and service providers are collaborating with them to expand their offerings. One of the key challenges companies face is the management of digital twins, as the model is retained and updated for later stages of the product's lifecycle, such as inspection and maintenance. This requires a close integration with PLM software.

Continued supply chain challenges

COVID-19 presented the world with various critical challenges around supply chains. Manufacturers and their suppliers are looking to diversify their supply chain to mitigate vulnerabilities that emerged through the pandemic. While the supply chain issues concerning critical parts and chips have come down significantly compared to last year, the need for global cooperation and interdependence between countries has become critical as geopolitical tensions such as the ongoing Russia-Ukraine war have impacted the supply chain. To curb the supply chain challenges, India and several ASEAN

countries are also increasingly looking to attract manufacturers with incentives, enhancing trade relationships with allies and exploring self-sufficiency in supply, procurement and manufacturing. Cybersecurity and sustainability are other challenges that providers assist companies with, as supply chain vulnerabilities can lead to a cyberattack, disrupting warehouse and manufacturing operations and sites.

Sustainability and reverse logistics

Increasing government and investor pressures have forced companies to consider sustainability across the manufacturing value chain. Global financial institutions and banks want to see their portfolios aligned with manufacturing organizations that take their sustainability and ESG (environmental, social and governance) goals seriously. Industrial technology is the biggest contributor from end-user devices and peripheral's energy consumption perspective, which is a critical component for companies to meet their sustainability goals. As products reach the end of life, the need for recycling and safe disposal becomes critical, and companies are looking

to invest in creating a robust reverse logistics framework to address the issue. Moreover, as energy efficiency, circular economy, smart manufacturing technologies and optimization of plant design and operations become critical, integration with sustainability and environment goals is fast becoming the need of the hour.

Nearshoring and reshoring

One of the major consequences of supply chain challenges faced by the manufacturing industry is the resurgence of nearshoring or onshoring operations or bringing them in-house. While many valid reasons exist for investing close to major markets, geopolitical uncertainty raises the possibility of a divided global economy. Nearshoring is prominent in key manufacturing industries such as automotive, electronics and other OEMs. North American companies are looking to reshore to Mexico, Canada, or Central America to save time and costs. Per the latest survey by Kearney, "96 percent of CEOs are evaluating reshoring their operations, have decided to reshore, or already reshored, an increase from 78 percent in 2022." However, the nearshoring trend has led to a labor



shortage in some instances. Technology is a key component of the reshoring and nearshoring strategy, and manufacturers are looking at automation, robotics and digitalization to make reshoring viable and competitive.

Servitization

Many OEMs now witness declining sales due to chip shortages, inflation, rising geopolitical tensions, non-availability of spare parts and saturated markets. Servitization is vital to overcoming these challenges. From large automobile and heavy equipment manufacturing companies to electrical and electronics companies making gadgets, the need to diversify the revenue stream through service is becoming increasingly mainstream. Business models such as pay-per-use, as-a-service and subscription are fast catching up with companies across the manufacturing value chain, helping companies increase their revenue potential, CX and CSAT. Some examples of servitization include Electrolux offering appliances under a monthly subscription that covers installation, maintenance and repairs in Sweden and

Signify offering Lighting as a Service (LaaS) to help companies save on energy costs in the Netherlands.

Workforce quality

Many manufacturers increasingly cite the inability to attract and retain employees as their primary challenge. The lack of skilled labor in the market is also forcing manufacturers to work with technology companies around automation and robotics. Post the COVID-19 pandemic, manufacturers have increased their number of automated processes to save on large capital expenses and machine operator shortages. Another issue affecting asset-intensive industries, particularly manufacturing, is the aging workforce. For example, per Randstad estimates, approximately one in four manufacturing workers in the U.S. and 22 percent of workers in the Canadian industrial sector are aged 55 and over.

Aftermarket services becoming mainstream

Aftersales servicing, repairs and condition monitoring are manufacturers' key focus areas, which help them maintain assets, drive

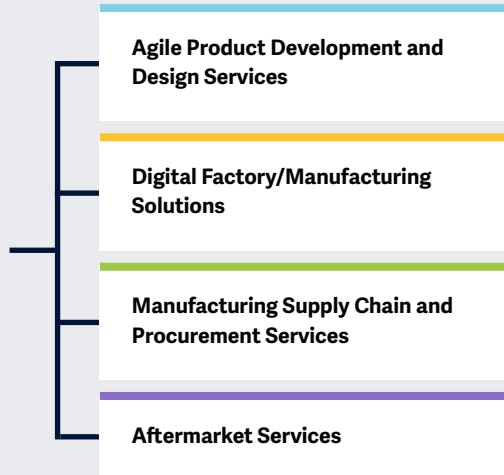
predictive maintenance, and increase product life cycle. The maintenance of a product provides an ongoing source of revenue for manufacturers. With the advent of data and connectivity, technology will play a vital role in developing aftermarket services. Technologies such as AI, digital twin, AR, VR, additive manufacturing and analytics will potentially drive the aftermarket services market with their application across various industry use cases, such as maintenance cycles' optimization, reduction in delays, salesforce effectiveness and spare parts pricing mechanisms.

Technology is reshaping how each segment of the manufacturing value chain responds to today's challenges around sustainability, circularity, product innovation, sales and service. Although digital twin, additive manufacturing, AI, AR and VR are leading to a more robust industry, challenges around new business models, talent and skills remain.



Understand key industry challenges and assess service provider capabilities to address the unmet needs of enterprise clients.

Simplified Illustration Source: ISG 2023



Definition

The ISG Provider Lens™ Manufacturing Industry Services and Solutions study offers the following to business and IT decision-makers:

- Transparency on the strengths and weaknesses of relevant providers
- A differentiated positioning of providers by segments on their competitive strengths and portfolio attractiveness
- Focus on different markets, including North America and Europe

Our study serves as an important decision-making basis for positioning, key relationships and go-to-market considerations. ISG advisors and enterprise clients also use the information from these reports to evaluate their current vendor relationships and potential engagements.



Scope of the Report

In this ISG Provider Lens™ quadrant report, ISG covers the following four quadrants for services/solutions: Agile Product Development and Design Services, Digital Factory/ Manufacturing Solutions, Manufacturing Supply Chain and Procurement Services and Aftermarket Services.

Provider Classifications

The provider position reflects the suitability of providers for a defined market segment (quadrant). Without further additions, the position always applies to all company sizes classes and industries. In case the service requirements from enterprise customers differ and the spectrum of providers operating in the local market is sufficiently wide, a further differentiation of the providers by performance is made according to the target group for products and services. In doing so, ISG either considers the industry requirements or the number of employees, as well as the corporate structures of customers and positions providers according to their focus area. As a result, ISG differentiates them, if necessary, into two client target groups that are defined as follows:

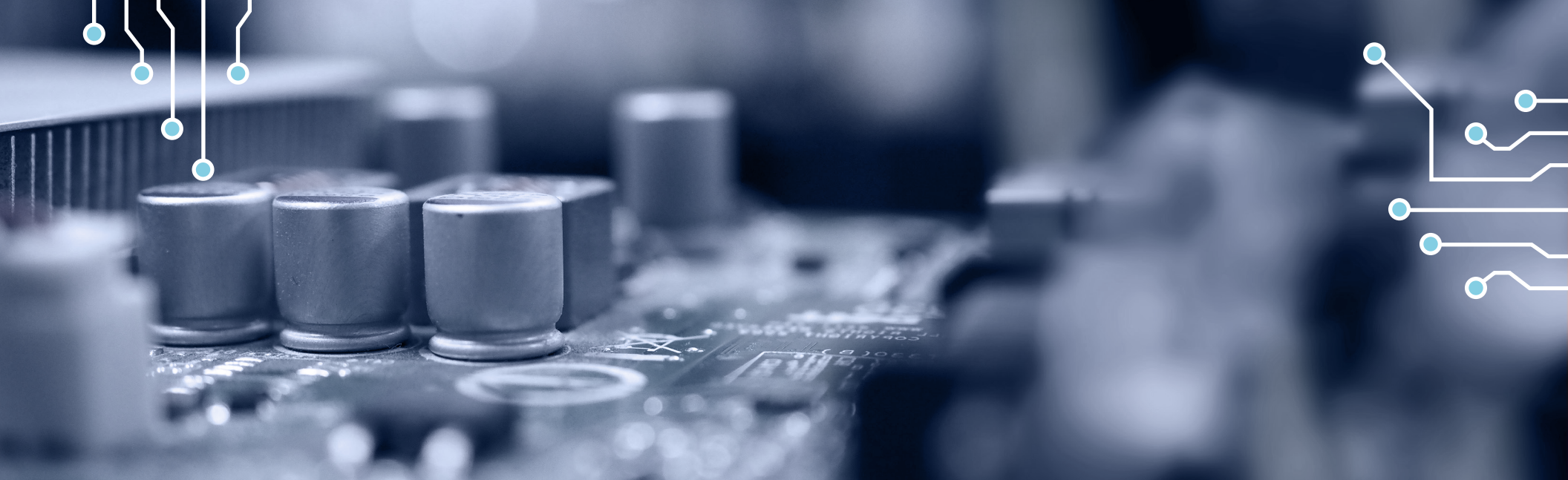
- **Midmarket:** Companies with 100 to 4,999 employees or revenues between \$20 million and \$999 million with central headquarters in the respective country, usually privately owned.

- **Large Accounts:** Multinational companies with more than 5,000 employees or revenue above \$1 billion, with activities worldwide and globally distributed decision-making structures.

The ISG Provider Lens™ quadrants are created using an evaluation matrix containing four segments (Leader, Product & Market Challenger and Contender), and the providers are positioned accordingly. Each ISG Provider Lens™ quadrant may include a service provider(s) which ISG believes has strong potential to move into the Leader quadrant. This type of provider can be classified as a Rising Star.

- **Number of providers in each quadrant:** ISG rates and positions the most relevant providers according to the scope of the report for each quadrant and limits the maximum of providers per quadrant to 25 (exceptions are possible).





Sweet Spot

Hitachi Digital Services

Overview

Hitachi Digital Services is part of the \$91.2 billion Hitachi Group, which has more than 320,00 employees across 70 countries and provides digital infrastructure, data management, analytics and digital solutions. Hitachi Digital Services offers consulting advisory services across the manufacturing value chain. The company's Lumada Suite uses data and cloud capabilities that help customers deploy industrial IoT solutions.

Key Provider Capabilities

- **Digital factory and consulting capabilities:** Hitachi Digital Services leverages its deep integration with its parent company to expand its capabilities in digital manufacturing. The Hitachi Group has more than 140,000 employees and 400 manufacturing facilities globally. Hitachi Digital Services enhances and hones its capabilities by implementing technologies in its factories and utilizing its learnings to drive value for customers globally. The primary offerings of its Digital Factory consulting portfolio include manufacturing-focused solutions and services such as factory equipment optimization, production analytics, virtual supply chain mapping and inventory optimization.
- **IT/OT capabilities:** Hitachi has invested approximately \$10 billion in recent acquisitions in the digital transformation and industrial space. It acquired Flexware Innovation, a leader in manufacturing execution systems (MES) and ERP integration, and JR Automation, an intelligent manufacturing and distribution solutions provider. These acquisitions have further strengthened the company's IT and OT capabilities. Hitachi also has partnerships with various technology companies and systems integrators. It plans to make a multimillion-dollar investment to strengthen its edge-to-cloud solutions. The company also plans to invest \$4 million over the next two years to develop digital manufacturing offerings.

- **End-to-end supply chain capabilities:** Hitachi Digital Services caters to various use cases through its digital factory supply chain services offering, including asset tracking, remote monitoring, inventory management, supply chain control tower, fleet field force workforce management, spare parts and order fulfillment, shop floor analytics for performance, and assets and warehouse management. Moreover, the company's supply chain solutions are integrated with its supply chain control tower solutions.

Benefits Delivered

- **Reduced unplanned interruptions to the production process**
- **Greater efficiency, safety and quality on the production line**
- **Reduced downtime, better spare parts and supply chain management, and higher productivity**
- **Improved business process efficiency through richer data insights**
- **Risk minimization through predictive maintenance solutions**



Hitachi Digital Services

Sweet Spot

- Hitachi Digital Services' commitment to driving digital transformation for clients in the manufacturing space comes from its deep legacy in the industry, domain knowledge, and close relationships with key clients and group companies.
- The company leverages the capabilities of the key Hitachi Group companies such as Hitachi Energy, Hitachi Rail and GlobalLogic to co-create solutions, drive capability expansion and build a robust ecosystem of partners.
- Hitachi Digital Services focuses on expanding its partner ecosystem by collaborating with vendors such as Microsoft, AWS, Salesforce, Cisco, Intel, MongoDB, Snowflake, Databricks

and SAP. This approach also involves developing a joint GTM strategy and offering co-innovative solutions.

- Hitachi Digital Services operates across key regions. Its proximity to clients helps the company deliver services in key areas such as data engineering, embedded engineering, cloud operations, cost management and automation. With engineering-led and workload-focused solution capabilities, Hitachi Application Reliability Centers (HARC) in India and other geographies help clients from the manufacturing and other industries drive cost management and cloud transparency.
- The company continues to integrate technology into the supply chain, digital factory and asset management

solutions. Hitachi emphasizes industrial analytics; it has dedicated labs focused on industrial AI domains and use cases. The acquisition of 47Lining in 2018 enhanced its capacity for innovation in cloud-native data and analytics solutions. Using analytics, AI and ML, Hitachi Digital Services strengthens its predictive and prescriptive capabilities to deliver advanced supply chain features such as supply chain risk management and optimization.

Future roadmap

With its reusable architecture and solutions and advanced AI/ML capabilities, Hitachi Digital Services can generate highly customizable solutions across various aspects of manufacturing. The deep capabilities are well complemented by its teams that have expertise in various data methodologies, design thinking and managed services such as SAP and Oracle.

The company plans to aggressively showcase its digital transformation and managed services capabilities to clients across key industries, including manufacturing. Through its digital growth strategy, it has strengthened its IT and OT offerings. In addition, it enhances and commercializes its industry cloud to target the manufacturing industry.





Appendix

The ISG Provider Lens™ 2023 – Manufacturing Industry Services and Solutions research study analyzes the relevant software vendors/ service providers in the North America market, based on a multi-phased research and analysis process, and positions these providers based on the ISG Research methodology.

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The research and analysis presented in this report includes research from the ISG Provider Lens program, ongoing ISG Research programs, interviews with ISG advisors, briefings with services providers and analysis of publicly available market information from multiple sources. The data collected for this report represents information that ISG believes to be current as of August 2023, for providers who actively participated as well as for providers who did not. ISG recognizes that many mergers and acquisitions have taken place since that time, but those changes are not reflected in this report.

All revenue references are in U.S. dollars (\$US) unless noted.

The study was divided into the following steps:

1. Definition of Manufacturing Industry Services and Solutions market
2. Use of questionnaire-based surveys of service providers/ vendor across all trend topics
3. Interactive discussions with service providers/vendors on capabilities & use cases
4. Leverage ISG's internal databases & advisor knowledge & experience (wherever applicable)
5. Use of Star of Excellence CX-Data
6. Detailed analysis & evaluation of services & service documentation based on the facts & figures received from providers & other sources.
7. Use of the following key evaluation criteria:
 - * Strategy & vision
 - * Tech Innovation
 - * Brand awareness and presence in the market
 - * Sales and partner landscape
 - * Breadth and depth of portfolio of services offered
 - * CX and Recommendation



Author & Editor Biographies



Lead Analyst

Swadhin Pradhan
Senior Manager and Principal Analyst

Swadhin Pradhan brings more than two decades of technology, business and market research experience and expertise to ISG clients. He has rich experience executing market/competitive intelligence (MI/CI) and quasi-consulting projects in the manufacturing, energy and resources industry.

Prior to ISG, Swadhin worked with MI/CI and thought leadership organizations of large tech and consulting firms such as IBM and Deloitte. At ISG, He focuses on ISG Provider Lens™.

His research and analysis for ISG clients concentrates on Energy, Resources and Manufacturing market development, disruption and change. He currently contributes to ISG's Provider Lens™ global research studies as a lead analyst.

Swadhin holds an MBA in Marketing and Finance from the Institute for Integrated Learning in Management (IILM), New Delhi, and an engineering degree in Electronics and Telecom.



Research Analyst

Varsha Sengar
Senior Research Analyst

Varsha Sengar is a senior research analyst at ISG and is responsible for supporting and co-authoring Provider Lens™ studies on Workday Ecosystem and Retail & CPG Services. She has over six years of experience in technology research, and in her prior role, she has carried out multiple ad-hoc projects, delivering industry-level actionable insights and recommendations. At ISG, she is responsible for delivering enterprise perspectives for IPL and collaborates with analysts, advisors, and enterprise clients on various research requests, which include primary and secondary research.

She supports the lead analysts of multiple regions in the research process and authors the global summary. Her area of expertise lies across various technologies like IoT, AI, Smart Homes and Autonomous Driving.





IPL Product Owner

Jan Erik Aase
Partner and Global Head – ISG Provider Lens™

Mr. Aase brings extensive experience in the implementation and research of service integration and management of both IT and business processes. With over 35 years of experience, he is highly skilled at analyzing vendor governance trends and methodologies, identifying inefficiencies in current processes, and advising the industry. Jan Erik has experience on all four sides of the sourcing and vendor governance lifecycle - as a client, an industry analyst, a service provider and an advisor.

Now as a partner and global head of ISG Provider Lens™, he is very well positioned to assess and report on the state of the industry and make recommendations for both enterprises and service provider clients.



iSG Provider Lens™

The ISG Provider Lens™ Quadrant research series is the only service provider evaluation of its kind to combine empirical, data-driven research and market analysis with the real-world experience and observations of ISG's global advisory team. Enterprises will find a wealth of detailed data and market analysis to help guide their selection of appropriate sourcing partners, while ISG advisors use the reports to validate their own market knowledge and make recommendations to ISG's enterprise clients. The research currently covers providers offering their services across multiple geographies globally.

For more information about ISG Provider Lens™ research, please visit this [webpage](#).

iSG Research™

ISG Research™ provides subscription research, advisory consulting and executive event services focused on market trends and disruptive technologies driving change in business computing. ISG Research™ delivers guidance that helps businesses accelerate growth and create more value.

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Founded in 2006, and based in Stamford, Conn., ISG employs more than 1,600 digital-ready professionals operating in more than 20 countries—a global team known for its innovative thinking, market influence, deep industry and technology expertise, and world-class research and analytical capabilities based on the industry's most comprehensive marketplace data.

For more information, visit isg-one.com.





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