IDC MarketScape

IDC MarketScape: Worldwide Discrete Manufacturing PLM Systems Integration 2024 Vendor Assessment

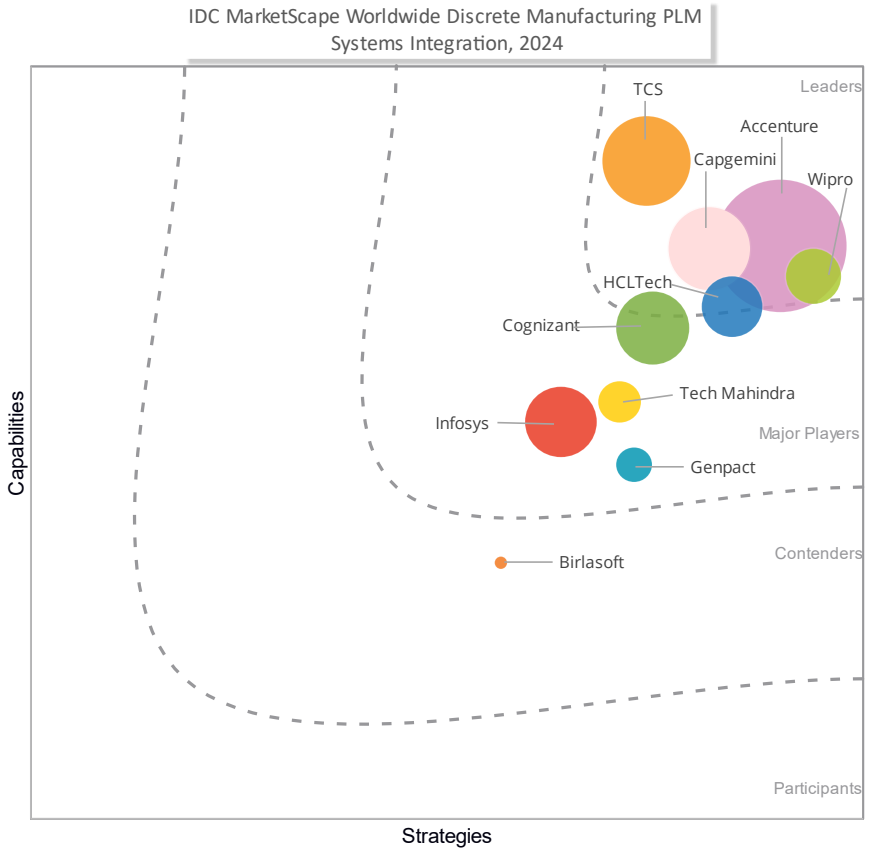
John Snow

THIS MARKETSCAPE EXCERPT FEATURES HCLTECH AS A LEADER

IDC MARKETSCAPE FIGURE

FIGURE 1

IDC MarketScape Worldwide Discrete Manufacturing PLM Systems Integration Vendor Assessment



Source: IDC, 2024

November 2024, IDC #US51573324e

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 Discrete Manufacturing PLM Systems Integration 2024 Vendor Assessment (Doc # US51573324).

IDC OPINION

Product life-cycle management (PLM) continues to expand collaboration for product innovation and development, engaging a wider audience including manufacturing, procurement, and services organizations as well as the broader ecosystem of partners, suppliers, and customers. Data from (traditionally) disconnected processes needs to be continuously rationalized, enabling analysis and decision support across the entire product life cycle — including ideation, design, production, distribution, support, and retirement. However, legacy applications take time to replace and so will continue to play a significant role in product development processes. Therefore, to meet the demand for fast, reliable digital processes will require innovative approaches that extract, contextualize, and share relevant data from historically siloed repositories.

The effort and experience necessary to effectively connect, syndicate, and leverage data from various enterprise applications is enormous and often proves to be too complex for a manufacturer's IT department to successfully manage. As a result, systems integrators (SIs) make up a key part of the manufacturing IT ecosystem, based on cross-functional experience across multiple industries/domains. SIs' expertise with technology and business strategy can make them indispensable to the success of a manufacturer's digital transformation efforts, functioning as members of the IT team by working with engineering, manufacturing, sourcing, and service.

This 2024 discrete manufacturing PLM systems integration IDC MarketScape analyzes 10 service providers that support PLM integration and enablement for discrete manufacturing. For the purposes of clarity, IDC defines discrete manufacturing broadly as two groups of companies:

- **Engineering-oriented value chains (EOVC)** are characterized by products with 5–50-year life cycles, made up of complex, electromechanical equipment with structural, electronic, and software components. The following industry sectors are examples of EOVC, automotive, aerospace, transit (rail and marine), industrial machinery, and medical equipment. EOVC products typically have complex design and manufacturing processes with high cost of change, which makes

simulation, cost control, and portfolio management critical, along with accurate, timely feedback from the field.

- **Technology-oriented value chains (TOVC)** are characterized by products with rapidly changing requirements and made up of complex, electronic equipment with very high development costs (precision/quality), large amounts of software, and downstream connectivity. The following industry sectors are examples of TOVC: computers, electronics, semiconductors, telecommunications, and medical imaging equipment. TOVC products typically have complex design and manufacturing processes with high cost of change, which makes simulation, quality control, and collaboration critical, along with real-time visibility into supply/product requirements.

Although not every vendor will have notable clients in all the categories within either EOVC or TOVC, those included in this document compete extensively in many of the key categories.

IDC MarketScape scoring criteria are based on vendor capabilities and strategy, with greater weight being placed on the manufacturer's areas of concern as identified by IDC end-user surveys. IDC MarketScape evaluation is based on vendor information gathered from RFI surveys, interactive briefings, public materials, and customer reference calls. Analysis of this information revealed three common challenges that manufacturers face and that service providers have an opportunity to address:

- Discrete manufacturers struggle with digital transformation of data and processes, especially the establishment of next-generation PLM (focusing on product design, configuration management, and customer requirements) and the establishment of digital threads (across PLM, MES, SCM, and SLM).
- Discrete manufacturers' PLM efforts are focused first on improving product quality followed by cost and time, and they are trying to leverage cloud, analytics, social, and IoT technologies to improve product development across design, manufacturing, procurement, and service/support.
- Discrete manufacturers are connecting global, cross-functional teams to work seamlessly and transparently, allowing them to develop innovative products faster across design, engineering/R&D, manufacturing, supply chain, service, and sales and marketing.

Related to these challenges, end users have three common expectations for service providers:

- Work as an integral part of the discrete manufacturer's team, advising the manufacturer about "what's possible" (i.e., work like an insider, but contribute like an outsider).

- Bring applicable functional and industry expertise to clients, enabling them to benefit from SI's breadth of knowledge and ability to implement/support agile strategies.
- Act as an advocate with technology vendors to maximize off-the-shelf solutions and minimize custom code.

IDC research indicates that the pace of new product development is accelerating across all discrete manufacturing industries. To meet this need, manufacturers are looking to SIs as a critical extension for IT teams, helping plan and implement digital transformation that improves cost, time, and quality for discrete manufactured products.

IDC MARKETSCAPE VENDOR INCLUSION CRITERIA

There are multiple IT service providers, large and small, that offer systems integration and engineering services for any number of PLM processes: product design, portfolio management, data management, and collaboration among coworkers, partners, suppliers, and customers. This IDC MarketScape focuses on SI/BPO vendors that:

- Have annual revenue of at least $1 billion.
- Support multiple discrete manufacturing industries.
- Provide systems integration, application development, and maintenance for a range of PLM processes.
- Connect engineering applications to one or more of the following: manufacturing, supply chain, and services/support.

ADVICE FOR TECHNOLOGY BUYERS

In this time of digital transformation, digital threads, and digital twins, discrete manufacturers need partners that understand how to turn legacy systems into fast, accurate decision support platforms for product design, manufacturing, supply chain, and service. For discrete manufacturers to get this right requires more than APIs, data conversions, and cloud-based analytics, it also requires strategic vision and concrete objectives along with implementation guidance related to navigating and accelerating product development processes.

For the discrete manufacturing technology buyer, IDC offers the following guidance regarding service providers that support PLM as systems integrators:

- Guard against scope creep, both time and cost. Continuously validate current PLM projects against original plans and business outcomes.

- Retain the right to approve/reject every consultant being recommended by the SI. (Manufacturers reported delays due to inexperience and/or attrition, as experienced consultants were moved onto other accounts.)
- Empower consultants to speak up about problems or opportunities that they see. (Consultants should work like an insider but think like an outsider.)
- Ensure the partner has a strong relationship with relevant software vendors. (Consultants should be able to advocate to vendors for off-the-shelf functionality and limit customizations.)
- Make sure any vendor customer references are from your industry and are trying to address the same problems and metrics.

FEATURED VENDOR PROFILE

This section briefly explains IDC's key observations resulting in HCLTech's position in the IDC MarketScape. The description here provides a summary of the vendor's strengths and opportunities.

HCLTech

HCLTech is positioned in the Leaders category in the 2024 IDC MarketScape for worldwide discrete manufacturing PLM systems integration.

IDC research shows that HCLTech is differentiated by its ability to optimize PLM performance and digital transformation for multiple enterprise applications and use cases.

HCLTech is a global technology services company offering engineering, manufacturing, and supply chain solutions to help manufacturing firms become next-generation enterprises. With 100,000 employees focusing on manufacturing industries, HCLTech's PLM practice provides digital engineering, cloud, and AI capabilities that help manufacturers digitally transform their businesses. HCLTech serves over 150 customers across automotive, medical, industrial, aerospace, and high-tech markets.

HCLTech's PLM services include consulting and systems integration for core engineering processes and applications, connecting manufacturing, services, and product experience domains. HCLTech leverages emerging technologies like IoT, AI/ML/NLP/GenAI, cognitive computing, and AR/VR to support new business models and customer engagement. HCLTech offers a wide range of PLM services, industry-specific offerings, and partnerships with popular PLM vendors including Dassault Systèmes, PTC, and Siemens.

For a prominent component manufacturer, HCLTech implemented PLM/MDM system to provide a single source of truth, bridging data silos and connecting engineering and manufacturing BOMs and processes. The solution included data compliance, traceability, process automation, and digital thread integration to improve productivity, enhance collaboration, and accelerate time to market.

HCLTech's growth strategy includes adding vertical domain experts and investing in new technologies like digital twin, AI/ML/GenAI, and cloud, where the company focuses on transitioning product development environments to public and private cloud platforms. HCLTech is expanding in APAC, with investments in nearshore centers, and strengthening consulting teams in the United States and Europe. Application and technology growth focuses on strategic alliances, co-innovation labs, ecosystem expansion, and industry-specific offerings, along with proactive and reactive M&A like the recent ASAP Group acquisition.

Strengths

- History of working with popular R&D organizations across multiple verticals and provides expertise for comprehensive service delivery of infrastructure, engineering, and business processes
- Significant investments in developing advanced offerings and frameworks that streamline integration and drive innovation and efficiency

Challenges

- Clients noted that they would like to see HCLTech expand the business analysis side of its offerings, to report on internal process improvements against business goals.
- HCLTech consultants are often perceived as being technically skilled but can further enhance their soft skills of communication.

Consider HCLTech When

- Manufacturers implementing AI/ML/GenAI with PLM to connect design, manufacturing, and supply chain for a comprehensive digital thread to improve product cost, time, and quality
- Manufacturers combining PLM with content management to improve requirements management, compliance and governance, and service/support

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.

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

Product Life-Cycle Management Definition

IDC Manufacturing Insights defines the PLM market as an enterprise software application solution that combines and manages data from multiple processes necessary to define, model, track, manage, and control product development and to manufacture, sell, maintain, and retire those products. PLM applications are:

- Actively involved in enabling at least some of the PLM functions described in this section
- Sold into product-centric development environments
- Integrated to other enterprise applications for data exchange and collaboration among employees, with various responsibilities, as well as with outside partners (suppliers, partners, customers, marketing and sales, and so on)

For a vendor to be defined by IDC as a provider of PLM solutions, the vendor's enterprise software should offer any of the following core functions:

- Engineering software or some access to it, including computer-aided design (for modeling mechanical and electrical parts and assemblies), computer-aided engineering (for simulating product performance in various conditions/environments), and computer-aided manufacturing (for modeling/simulating production processes)
- Collaborative product data management (cPDM) including a number of subsegments like vaulting, requirements and document management, change management, view/markup capabilities for visualization across the web (lightweight 3D geometric representations), parts libraries, idea/innovation management and product-focused sustainability, and environmental compliance management
- Project and portfolio management (PPM) software, and configuration management, for new product development and introduction (NPDI)

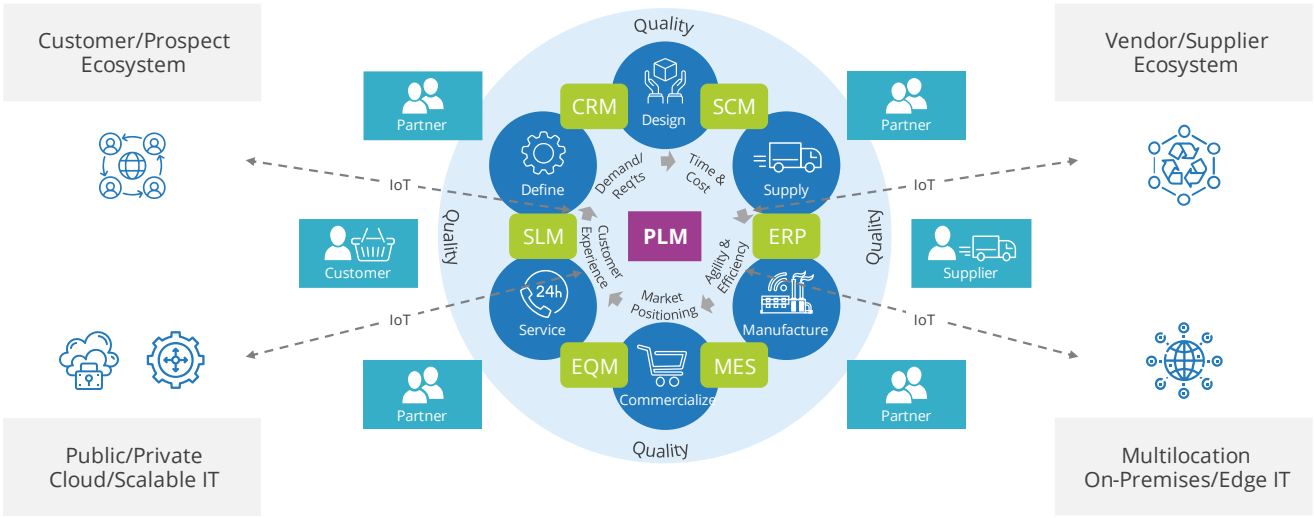
Beyond these features that form the core of PLM applications, a comprehensive solution should also include:

- Collaboration applications, especially for team collaboration within the enterprise as well as with external business partners
- Quality management applications related to optimizing product designs for manufacturing, assembly, and service/support
- IoT/IIoT support for analyzing and identifying root cause problems related to product design occurring during production or in the field
- Business performance measurement software to analyze cost efficiencies and search for process improvements

We also think that manufacturers will begin to connect their PLM systems into a broader ecosystem of enterprise systems, data, and processes to form a product innovation platform, as shown in Figure 2. PLM systems integrators will be critical to support this approach.

FIGURE 2

Product Innovation Platform Framework



Source: IDC Manufacturing Insights, 2024

LEARN MORE

Related Research

- *Market Analysis Perspective: Worldwide Engineering and R&D Applications, 2024* (IDC #US51483224, August 2024)
- *2024 Product Quality and Digital Transformation Survey: Focus on Product Innovation and Design Changes* (IDC #US51482924, July 2024)
- *IDC's Worldwide Digital Transformation Use Case Taxonomy, 2024: Engineering and R&D* (IDC #US51967424, April 2024)
- *Generative AI Use Case Taxonomy: The Engineering R&D Function* (IDC #US51850324, March 2024)
- *2023 Global Product Innovation Survey Report — Industry Analysis* (IDC #US51482524, February 2024)
- *IDC PlanScape: Supply-Driven Design* (IDC #US48627722, December 2023)

Synopsis

This IDC study analyzes the major systems integration providers in the PLM market for discrete manufacturing industries. We will have companion IDC MarketScape documents that analyze:

- Systems integrator and business process outsourcing services providers in the PLM market for process manufacturing industries
- Strategic consultants in the PLM market for discrete manufacturing industries
- Strategic consultants in the PLM market for process manufacturing industries

"Discrete product development and innovation continue to be transformed by the capabilities of PLM systems to improve cost, time, quality, and collaboration. However, successful product transformation requires PLM integration across multiple organizations and the enterprise systems on which they rely. The data that drives this collaboration is the digital thread of the product life cycle, which is necessary for manufacturers to improve development, production, sourcing, and service, both inside and outside of the company. It can be difficult for discrete manufacturers to keep up with the pace of technological change and so service providers/partners become extended team members that provide technology and industry guidance for successful digital transformation," said John Snow, research director, Product Innovation Strategies, IDC.

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.).

Global Headquarters

140 Kendrick Street
Building B
Needham, MA 02494
USA
508.872.8200
Twitter: @IDC
blogs.idc.com
www.idc.com