

Digital Engineering Services

A research report comparing provider strengths, challenges and competitive differentiators





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Report Author: Srinivasan P N

Digital engineering services (DES) are revolutionizing businesses at a rapid pace.

Everyday advancements in the digital world bring many opportunities and challenges in embracing change. Digital change has modernized work setups by embracing a new normal and adopting innovations and business models. It expects quicker, improved results with a human-centered approach to creating personalized experiences. Europe has been maturing tremendously, positively combining the physical world and digital intelligence across industry verticals.

End users' expectations have plunged significantly, pushing enterprises and providers to re-evaluate, re-design and re-structure their existing service offerings to offer improved CX, driven by innovative and intelligent systems as the core of their business strategy. Enterprises are investing immensely in digital technologies such as Industry 4.0, data analytics, IoT and cloud computing to improve efficiency, optimize costs and improve experience.

The convergence of engineering services with digital technologies makes enterprises and providers more scalable and innovative, promising a shortened time to market (TTM) for new products.

The following perspectives have sustainable consequences on the European market:

- Integration of IT-OT environment: Enterprises' adoption of Industrial IoT (IIoT) is a gamer changer, modernizing the nature of manufacturing and increasing the opportunities to improve processes innovatively. This brings real-time visibility, minimizes threats, predicts unplanned downtime and simplifies process controls.
- Introduction of AI & GenAI across the spectrum: From automating processes and generating content to enhancing CX and improving design features, GenAI is transforming business across the value chain. The adoption of GenAI is still in its nascent stages, with many enterprises and

The convergence of the physical world and digital technologies has created an unprecedented demand for the industries to be more **intelligent**, connected and sustainable

providers investing to identify use cases and creating PoCs to scale it at the enterprise level.

- Circular economy for sustainable manufacturing: The adoption of circular economy directly impacts the imperatives of sustainability. A circular economy could improve the complete manufacturing continuum by decreasing material consumption and waste management, extending the life cycle of products and recycling materials.
- Acceptance of servitization: The productas-a-service (PaaS) model is gaining momentum among enterprises as it provides an opportunity to deliver valueadded services, improve the core product's experience/features and create an additional revenue stream. To adopt this model, enterprises must revisit and re-strategize their operational model and introduce necessary changes to the ecosystem.
- **Redesigning supply chain networks:** The COVID-19 pandemic increased the demand for redesigning the supply chain across

enterprises. Embracing digital technologies across the value chain can help achieve a resilient and sustainable supply chain. Ideally, this can reduce network catastrophes by improving visibility, identifying threats and offering mitigation plans.

• Stronger regulatory compliance: The amendment of the comprehensive AI law will allow responsible AI to protect the privacy of people's fundamental rights. However, this may have severe implications for a few areas and sectors, including retail, cybersecurity, advertising and workforce management.

Digitization has led to enormous modifications in the complete ecosystem of a product, from R&D and design to manufacturing and operations. The utilization of technologies, including industry IoT, immersive technologies, digital twin and digital thread, have implications that could be spotted across various blocks more specific to industry verticals. Given below are a few industry-specific use cases that we have observed in the market:

The automotive industry is growing with the adoption of intelligent and electric vehicles

in the region. European enterprises are at the forefront of the industry in driving innovations that ensure safety and improve the driving experience. Automotive enterprises are leveraging AR/VR technologies to enhance the experience of customer dealers, train new resources, create digital twins to create a replica of the shop floor to predict failures and develop software that could rapidly increase the product development lifecycle.

In recent years, the aerospace industry has demonstrated a more vital growth cycle post-COVID-19. However, the sector faces severe challenges with talent shortages, supply chains and digital technologies.

The energy & utility industry in the region has the ideal mix of nuclear, conventional and renewable power generation options. However, the political situation in the region (the Russia-Ukraine war) increases the demand for fuel as many European countries heavily depend on Russia. The sector is gaining momentum across Europe with the advancement of concepts such as sustainability, smart city and smart housing.

Other prominent sectors that have experienced tremendous changes concerning growth and technology adoption include healthcare, retail and telecom.

The Digital Engineering Study 2024 covers various disciplines, including product design, development, platform development, process optimization through digital technologies and enhancing CX. We have observed that the industry is gaining momentum, with 20-25 contracts signed in the digital engineering space on an average during the last 12-18 months. However, most of these contracts are attributed to large enterprise segments.

The study identifies a few trends that we observed across quadrants:

Design & Development

- GenAl-driven customization and optimization: Using AI for personalized product design and optimization, with a future focus on predictive design changes.
- Adaptive and responsive UX/UI Design: Exploring adaptive design that adjusts to user preferences and behaviors with plans for integrating emotional AI.

- Sustainable and circular design models: Integrating sustainable practices into product development, including research on biodegradable materials and recycling technologies.
- Edge computing for real-time design analytics: Using edge computing for realtime design data analysis is particularly beneficial in fields such as intelligent infrastructure.

Integrated User/Customer Engagement

- Enterprises leverage innovative digital technologies for **customer engagement**, emphasizing **hyperpersonalization** and sustainability.
- Al integration in customer service is reshaping engagement, reflecting evolving enterprise expectations. Trends include **emotion Al** for hyperpersonalization, recognizing facial expressions and voice tones for empathetic responses.
- Voice-first interfaces and intelligent assistants are becoming primary modes of interaction, meeting demand for hands-free interactions.

• Future trends include industrial metaverse, GenAI, AI in asset management, XR in service assistance, omnichannel experiences and IoT-driven solutions.

Intelligent Operations

- Enterprises seek providers to integrate software and hardware solutions, scale XR technologies such as AR/VR and adopt modern architectures.
- Enterprises expect advisory services, transformation of operating models, improved efficiency, and agile operations from service providers.
- Smart factories powered by Industry 4.0 technologies prioritize efficiency and innovation. Digital thread and digital twin technologies streamline workflows and enable timely interventions in manufacturing and supply chain functions.
- XR technologies such as AR/VR are used for remote assistance, virtual training and AI support on the shop floor.

Platform and Application Services

- The Software Defined Everything (SDx) approach dominates the control of the hardware, provides greater flexibility and visibility, and extends its life. Enterprises are adopting this approach to innovate and introduce a new revenue-generating stream by providing software to OEMs and manufacturers for quick product turnaround.
- GenAl is shifting from excitement to execution mode, with enterprises using its features in code reverse engineering, code development, extracting business rules and uncovering domain models. However, the scale of GenAl implementation is still developing, considering various factors, including security threats, industry regulations, customer acceptance and cost.

The digital engineering segment in Europe is not as mature as the U.S. market. However, the region has witnessed rapid growth in the last few years. With the industry gaining significance with the growing dominance of digital technologies across the ecosystem, providers must concentrate on investing in the following areas to make them preferred providers for businesses:

- Acquiring and retaining talent by offering them learning and growth opportunities remains tricky. Providers must focus on investing in a ready-to-deploy talent community for business requirements. Talent upskilling by forming internal universities and academic partnerships will boost employees' morale.
- As quoted in the ISG Smart Manufacturing report, change management remains another eminent necessity for enterprises as they advance their digital transformation journey. Investment toward enhancing change management offerings could be a value add and convert into an independent revenue stream in the long run.

• CX and engagement are crucial to success. Establishing CX and innovation centers could further enhance customer relationships. The provider should transform from an outsourcing partner to a codevelopment and co-innovation partner by building the proper combination of talent, capabilities and domain expertise.

Enterprises and providers are enhancing their portfolios by introducing digital interventions across the product lifecycle to stay ahead of the curve.

Provider Positioning

Page 1 of 4

	Design and Development (Products, Services and Experiences)	Integrated Customer/ User Engagement	Platform and Application Services	Intelligent Operations
Accenture	Leader	Leader	Leader	Leader
Akkodis	Leader	Rising Star ★	Product Challenger	Rising Star ★
Bertrandt	Market Challenger	Not In	Not In	Not In
Bosch SDS	Rising Star ★	Not In	Not In	Leader
Capgemini	Leader	Leader	Leader	Leader
CI&T	Not In	Contender	Not In	Not In
Cigniti	Contender	Contender	Product Challenger	Contender
Cognizant	Leader	Leader	Leader	Leader
Cyient	Leader	Product Challenger	Product Challenger	Leader
DXC Engineering	Product Challenger	Not In	Product Challenger	Product Challenger
EDAG	Market Challenger	Not In	Not In	Not In



Provider Positioning

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	Design and Development (Products, Services and Experiences)	Integrated Customer/ User Engagement	Platform and Application Services	Intelligent Operations
eInfochips	Contender	Not In	Contender	Contender
Encora	Not In	Contender	Contender	Not In
Engineering Industries eXcellence	Not In	Not In	Not In	Product Challenger
EPAM Systems	Not In	Contender	Not In	Not In
e-Zest Solutions	Contender	Contender	Contender	Contender
GlobalLogic	Leader	Product Challenger	Rising Star ★	Not In
Happiest Minds	Product Challenger	Product Challenger	Product Challenger	Not In
HARMAN DTS	Leader	Leader	Leader	Product Challenger
HCLTech	Leader	Leader	Leader	Leader
Hexaware	Product Challenger	Product Challenger	Market Challenger	Not In
Infinite Computer Solutions	Product Challenger	Product Challenger	Product Challenger	Product Challenger



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Provider Positioning

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	Design and Development (Products, Services and Experiences)	Integrated Customer/ User Engagement	Platform and Application Services	Intelligent Operations
Infosys	Leader	Leader	Leader	Leader
ITC Infotech	Product Challenger	Product Challenger	Contender	Product Challenger
KPIT	Contender	Not In	Not In	Contender
LTIMindtree	Product Challenger	Product Challenger	Leader	Leader
LTTS	Leader	Product Challenger	Product Challenger	Leader
Mphasis	Market Challenger	Product Challenger	Product Challenger	Not In
Ness Digital Engineering	Not In	Not In	Market Challenger	Not In
NTT DATA	Product Challenger	Rising Star 🖈	Leader	Product Challenger
Persistent Systems	Product Challenger	Leader	Leader	Market Challenger
Publicis Sapient	Product Challenger	Not In	Not In	Not In
Qualitest	Not In	Not In	Contender	Not In



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Provider Positioning Page 4 of 4

	Design and Development (Products, Services and Experiences)	Integrated Customer/ User Engagement	Platform and Application Services	Intelligent Operations
Randstad Digital	Product Challenger	Product Challenger	Market Challenger	Rising Star ★
Tata Elxsi	Product Challenger	Market Challenger	Not In	Market Challenger
TCS	Leader	Leader	Leader	Leader
Tech Mahindra	Leader	Leader	Rising Star ★	Leader
UST	Product Challenger	Product Challenger	Market Challenger	Contender
WinWire	Not In	Not In	Contender	Not In
Wipro	Leader	Leader	Leader	Leader
Zensar Technologies	Market Challenger	Contender	Product Challenger	Not In



DIGITAL ENGINEERING SERVICES QUADRANT REPORT | MAY 2024

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Key focus areas for **Digital Engineering Services 2024**.

Simplified Illustration Source: ISG 2024

Design and Development (Products, Services and Experiences)

Integrated Customer/User Engagement

Platforms and Applications Services

Intelligent Operations

Definition

With the rise of technological advancements, enterprises seek transformative journeys leveraging digital technologies to expedite product and service development with enhanced quality and experience. ISG reports a 36 percent growth in the engineering market's ACV, surpassing its five-year average by 90 percent, with over 25 acquisitions in this space (ISG Index Insider).

The digital engineering market is driven by AI and industrial automation technologies, including GenAI in design, digital twins, virtual prototyping and industry 5.0, streamlining design-to-execution processes and enterprise platform outcomes, reducing operational and strategic risks, innovation cycle times and costs associated with the enterprise value chain and ecosystem.

Mobility, big data, Al/GenAl, ML, IIoT and predictive analytics drive visibility, traceability, reliability and consistency across the value chain. This transformation digitizes the value chain, impacting foundational engineering services from product innovation to aftermarket services. The importance of tracking and tracing has heightened as it establishes a product's lineage and historical record throughout its value-addition process.

GenAl technology has elevated expectations for digital engineering service providers, emphasizing new experience design, transformational platforms and intelligent manufacturing operations.

Industry 4.0 and 5.0, augmented by IIoT and artificial intelligence of things (AIoT), take engineering to a new era of an automated, smart, intelligent, and controllable ecosystem. The market has shifted toward digital engineering transformation services, offering comprehensive strategies and data-driven product lifecycle management (PLM) for delivering digital CX services.

Scope of the Report

This ISG Provider Lens™ quadrant report covers the following four quadrants for services/ solutions: Design and Development (Products, Services and Experiences), Integrated Customer/User Engagement, Platform and Applications Services, and Intelligent operations

This ISG Provider Lens™ study offers IT decision-makers:

- Transparency on the strengths and weaknesses of relevant providers
- A differentiated positioning of providers by segments (quadrants)
- Focus on the regional market

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

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).



Provider Classifications: Quadrant Key

Product Challengers offer a product and service portfolio that reflect excellent service and technology stacks. These providers and vendors deliver an unmatched broad and deep range of capabilities. They show evidence of investing to enhance their market presence and competitive strengths. Leaders have a comprehensive product and service offering, a strong market presence and established competitive position. The product portfolios and competitive strategies of Leaders are strongly positioned to win business in the markets covered by the study. The Leaders also represent innovative strength and competitive stability.

Contenders offer services and products meeting the evaluation criteria that qualifies them to be included in the IPL quadrant. These promising service providers or vendors show evidence of rapidly investing in products/ services and a follow sensible market approach with a goal of becoming a Product or Market Challenger within 12 to 18 months. Market Challengers have a strong presence in the market and offer a significant edge over other vendors and providers based on competitive strength. Often, Market Challengers are the established and well-known vendors in the regions or vertical markets covered in the study. **★ Rising Stars** have promising portfolios or the market experience to become a Leader, including the required roadmap and adequate focus on key market trends and customer requirements. Rising Stars also have excellent management and understanding of the local market in the studied region. These vendors and service providers give evidence of significant progress toward their goals in the last 12 months. ISG expects Rising Stars to reach the Leader guadrant within the next 12 to 24 months if they continue their delivery of above-average market impact and strength of innovation.

Not in means the service provider or vendor was not included in this quadrant. Among the possible reasons for this designation: ISG could not obtain enough information to position the company; the company does not provide the relevant service or solution as defined for each quadrant of a study; or the company did not meet the eligibility criteria for the study quadrant. Omission from the quadrant does not imply that the service provider or vendor does not offer or plan to offer this service or solution.



Design and Development (Product, Services, Experience)

Design and Development (Product, Services and Experiences)

Who Should Read This Section

The report is relevant for Europe-based enterprises that evaluate providers that offer design and development services across the product development lifecycle. In this quadrant, ISG assesses the current competitive positioning of providers based on the service portfolio, which includes ideation strategy and design, prototyping and quality testing.

Businesses prioritize UX design and incorporate design thinking into their product and service development processes. They anticipate providers to possess technical proficiency and a profound grasp of user-centered design principles, aiming to craft intuitive and captivating customer experiences.

We also witness the demand is increasing for the integration of advanced technologies such as AI, IoT, and blockchain into design and development workflows. Enterprises are searching for providers capable of smoothly incorporating these technologies to foster innovation and enhance efficiency. The importance of speed-to-market has never been greater. Enterprises anticipate providers to embrace agile methodologies and utilize tools facilitating rapid prototyping and iterative development. This enables quicker feedback cycles and accelerates product iterations.

Enterprises expect providers to have the capabilities to deliver immersive and humancentric experiences using digital technologies and with a strong focus on sustainability.

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Chief Digital Officers should read this report to understand the developments in the industry, enabling them to choose and partner with the right provider that can transform their digital landscapes.

Engineering leaders must read this report to comprehend the relative strengths and weaknesses of providers offering design and development services in the digital engineering space.

Software development and technology

leaders should read this report to understand the relative positioning of providers and how their digital engineering offerings can impact an enterprise's transformation initiatives.



This quadrant evaluates the vital elements, including **technology expertise, best practices and methodologies**, service providers offer to deliver a **human experience-centered product** to fulfill business and customer requirements.

Srinivasan P N

Design and Development (Product, Services and Experiences)

Definition

This guadrant has assessed providers' ability to deliver integrated hardware and software and new data-driven product development and feature augmentation services. These services range from ideation and strategy to design and R&D, leveraging capabilities across rapid and agile design, prototyping and quality testing. Some of the resulting benefits include faster product innovation cycles and timeto-market, the creation of smarter and more connected digital products, and an improved CX. Key enabling capabilities include design thinking and digital product design techniques. This encompasses the entire new product introduction (NPI) process, right from the ideation to pilot runs of the product or services under consideration. It is known as Idea to Realization, which validates the new product ideas in the form of new features to be added to the existing product.

The tools and techniques used to track design changes across the value chain of the NPI process are enabled by technologies such as computer-aided design (CAD), computer-aided manufacturing (CAM) and computer-aided engineering (CAE). Recent advancements in GenAI have exponentially augmented digital experience design capabilities, with generative design and simulations as well as virtual prototype design and testing on a large scale.

Eligibility Criteria

- Breadth of lifecycle coverage: Support for product/service combinations and digital business platform development strategy, **new product/** service/business design and development capabilities, integrate and scale, and support/ maintain stages
- Proven experience in ideation, innovation, and engineering of digital value offerings: Use of design thinking capabilities, new product/service strategy formulation requirements analysis, market feedback/ research, demonstrated generative design capabilities supporting ideation and innovation
- Digital CX design competency: User/ persona-based journey mapping, design and storyboarding, **UI/UX design**, industrial design, service design and interaction design, net new **hyper-personalization** and platform experience design with **GenAI** e.g. with personal digital avatars as service assistants
- New software operating models: Ability to support agile, continuous, and rapid development, CI/CD and continuous testing unit and integration processes, managing the AI use cases and data lifecycles

Design and Development (Product, Services and Experiences)

Observations

Providers in Europe have long-standing expertise and experience in providing comprehensive solutions/services, including product ideation, inception, design, development and prototyping. They have proved capable of serving these products and solutions across industries.

Providers in this region are evaluated based on their expertise in supporting the client's new product development and new product introduction (NPD/NPI) processes. They are additionally assessed based on their provision of digital interventions to help clients achieve cost-effectiveness, improve cycle time and enhance access to stakeholders.

Providers help clients improve their internal processes through digital interferences such as digital twin, digital thread, AR and VR. They also focus on CX by collating use cases via digital sources. This quadrant clearly expresses providers' abilities to improve clients' business outcomes by designing and developing solutions using digital technologies such as GenAl. Few providers showcased exceptional use cases of quality and end-to-end track-and-trace to place them ahead of the competition and create an entry barrier for others.

From the 102 companies assessed for this study, 34 qualified for this quadrant, with 13 being Leaders and one Rising Star.

accenture

Accenture uses its strong domain expertise, talent ecosystem, delivery network and longenduring relationships with partners to deliver business outcomes to organizations.

Akkodis

Akkodis combines its engineering capabilities and advancements in digital knowledge to support enterprises in transforming their offerings.

Capgemini

Capgemini uses its proven digital UX design portfolio, industrialized technology and testing capabilities to provide impactful experiences and design implementations.

📀 cognizant

Cognizant's product-focused mindset and consultative and experienced approaches help build a human-centric design that offers enterprises cost-to-value.

Cyient

Cyient's 'design thinking methodology focuses on providing creative solutions, from building and defining the problem to prototyping and testing ideas with user-centricity as the core strategy.

GlobalLogic

GlobalLogic uses Method, its strategic design studio, to adopt a holistic approach to define coherent and intuitive services to experience design, thereby elevating CX.



HARMAN Digital Transformation Solutions

offers a profound user experience, personalized products with the latest technology and a critical talent community to enable customers to navigate the complexity of new product development seamlessly.

HCLTech

HCLTech delivers end-to-end product design and development services. It helps clients realize their needs and design and develop concept solutions around their requirements.

Infosys

Infosys' advanced simulation capabilities support clients in establishing virtual testing and qualifying complex designs, thus helping clients identify threats and shorten the development timeline.

LTTS

LTTS offers end-to-end design and development services and supports customers to realize the benefits of integrating physical assets and digital intelligence.

TCS' Sustainably by Design program provides customers with a 360-degree simulation experience across the design and development portfolio with an advanced technology stack.

Tech Mahindra

Tech Mahindra's sustained legacy of offering designing and prototyping design services through dedicated labs and offshore/nearshore development centers makes it a leading provider.



Wipro delivers digital engineering services with advanced tools and technologies. With the acquisition of Designit, it uses its accelerators and design labs to design and prototype products across the industry verticals.

Bosch SDS

Bosch Software and Digital Solutions (Rising Star) expertise in process transformation through a set of templates and technology across value streams and functions has helped the company achieve a better positioning this year.



HCLTech

Overview

HCLTech is headquartered in Noida, India. It has more than 224,000 employees spread across more than 205 delivery centers worldwide. In FY23 the company generated \$12.6 billion in revenue, with IT and Business Services as its largest segment. HCLTech considers Europe one of its strategic growth areas. It has been increasingly investing in the region by establishing new centers in Bulgaria and Romania and through acquisitions of niche providers such as Starschema and ASAP. HCLTech has demonstrated expertise in supporting the new product development initiatives (NPDI) lifecycle, which covers the entire product lifecycle, including conceptualization, development, deployment and scalability.

Strengths

Strong expertise in MBSE: HCLTech, with its engineering DNA, has developed the ModEx solution, an integration framework for modelbased systems engineering (MBSE) tools that supports the seamless integration among MBSE, PLM and ALM tools. This enables enterprises to set up product development environments with bi-directional data exchange at various levels of granularity and between software products from different ISVs. The scalable architecture provides an Integration Bus that enables data exchange and transformation workflows among tools based on semantic mapping definitions. In addition, it supports adapters for different MBSE tools backing the SysML modeling language and adapters for different ALM and PLM tools.

Tailored experience solutions: HCLTech uses its Strategic Research Innovation and Design for Experience (STRIDE) network and Edge studios to develop tailored and experience-centric products through a broad suite of research-led design offerings. This collaborative approach modernizes design through discovering, defining, developing and delivering value-led solutions across verticals. It also helps enterprises advance their journey across the value chain, from ideation, conceptualization and prototyping to usability engineering and marketing communications.

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services." Srinivasan P N

Caution

"HCLTech's scale and ability to integrate best

practices with decades of engineering expertise offer enterprises superior design and development

> HCLTech is known for its design capabilities and a convincing blend of industry expertise and talent capabilities. However, it should further invest and build its consulting capabilities to deliver end-to-end service offerings to enterprises.



Integrated Customer/ User Engagement

Integrated Customer/User Engagement

Who Should Read This Section

The report is relevant for Europe-based enterprises evaluating providers offering integrated customer and user engagement through aftermarket services.

In this quadrant, ISG assesses the current competitive portfolio of providers that offer intelligent aftermarket services to deliver customer and product support through digital platforms such as Al-enabled customer services, virtual agents, self-service knowledge support, and field support using AR/VR technology.

Enterprises acknowledge the growing significance of delivering a seamless customer journey across various touchpoints or channels. This is relevant in today's digital environment, where customers anticipate an omnichannel experience seamlessly integrating different channels and touchpoints. To achieve this goal, enterprises prioritize using predictive analytics to target appropriate customers and deliver personalized services and recommendations, thereby gaining a deeper understanding of their customers' needs and preferences and customizing their offerings accordingly.

Large enterprises are also seeking to revamp their business models by leveraging the total experience to attain world-class customer and employee advocacy levels. This involves enhancing user experience (UX), customer experience (CX), and employee experience (EX) to elevate brand perception at a holistic level.

Challenges that hinder the vision of enterprises and providers include budget pressures, scalability, delivery quality, and market speed. Providers must have an agile mindset across the teams to overcome these challenges.

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Chief Digital Officers should read this report to understand the developments in the industry, enabling them to choose and partner with the right provider that can transform their digital landscapes.

Engineering leaders must read this report to comprehend the relative strengths and weaknesses of providers offering intelligent aftermarket portfolios in the digital engineering space.

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Software development and technology

leaders should read this report to understand the relative positioning of providers and how their digital engineering offerings can impact an enterprise's transformation initiatives.

DIGITAL ENGINEERING SERVICES QUADRANT REPORT MAY 2024



The infusion of digital technologies in integrated customer and user engagement has transformed customer experience across touchpoints. The quadrant assesses the provider's capabilities to use AR and VR and immersive experiences across the service portfolio.

Srinivasan P N

Integrated Customer/User Engagement

Definition

This quadrant has covered providers using intelligent aftermarket services to deliver customer services and product support through digital platforms. Providers' key capabilities in this space include providing Alenabled customer services, virtual agents, selfservice knowledge support, remote services and field support, and using AR/VR technology for remote services using drones and real-time experience management. Effective customer and user engagement services are crucial as they directly affect the customer and the endusers of the product or services. The degree of customer satisfaction achieved relative to their expectations ultimately influences their decision for repeat purchases and serves as a critical determinant of success.

Feedback in the form of the voice of the customer (VoC) obtained from various downthe-line digital sources plays a vital role in making a self-learning, auto-correcting process that remains highly relevant to the customer, as well as the CX providers.

Eligibility Criteria

- Predictive maintenance competency: Use of data analytics, AI and machine learning in maintenance, field service management and selfhealing services
- Warranty management, lifecycl management and maintenance repair, and operations (MRO) capabilities: Focus on digital experience platforms service, customer engagement, query resolution and support
- Innovation in aftermarket services interfaces: Including UI/ UX design and engineering and product/service personalization

- . Experience with new business and service models: Using IoT technologies, **AR/VR-powered digital avatars** and virtual customer care assistants, realtime knowledge support, and predictive actions suggestion engines to provide **remote infield customer service** and help
- Content delivery capability: Autonomous and intelligent content distribution, on-demand, AI-powered self-service knowledge help, such as using NLP, NLU, NLG, conversational AI, and virtual agent support
- Leverage customer and market feedback (VoC): Value-added utilization of customer, field and market feedback across all relevant channels, including social media and web Track and trace capability across the value chain
- Showcase of Proof of Concepts and Use cases leveraging GenAI for content development, knowledge curation, and feedback mechanisms that could support different processes.

DIGITAL ENGINEERING SERVICES QUADRANT REPORT MAY 2024

Integrated Customer/User Engagement

Observations

Customer engagement and experience are gaining prominence and momentum across the value stream, irrespective of the industry vertical. As a customer-centric market, Europe has been digitally enabling various touchpoints and guiding customers from brand selection to loyalty by enhancing their experiences through personalized mapping.

The desire to advance customer and user engagement using sophisticated digital interventions throughout the value stream has led to several breakthroughs. Some of them include:

 Using concepts such as emotional AI is revolutionizing customer interactions by going beyond customer recognition to understand individual preferences, behaviors and needs. This has become a new normal in CX, providing empathetic and contextually aware responses.

- User research, service design and human experience are crucial for any business as design is not merely perceived as a superficial presentation layer.
- Providers are investigating potential applications of Gen AI that could enhance CX. Some identified use cases encompass customer service, agent efficiency, content synthesis and content creation.

From the 102 companies assessed for this study, 30 qualified for this quadrant, with 10 being Leaders and two Rising Stars.

accenture

Accenture has made several select acquisitions in this space. Uniting these with its deep industry know-how and talent portfolio, the company has become a leading transformational partner.

Capgemini

Capgemini's CX proposition and suite of offerings allow enterprises to transform their relationships with customers and create experiences that provide rapid and sustainable value.

Cognizant

Cognizant provides a comprehensive suite of aftermarket services assets to empower critical areas such as service request management, spare parts order management and warranty management, thereby improving CX.



Harman Digital Transformation Solutions's

unique set of approaches, tools, robust processes and global delivery model, combined with verticalized platforms across various customer touchpoints, make it a preferred provider in this quadrant.

HCLTech

HCLTech integrates its Smart Integrated Operations (SIO) solution with its demonstrated industry expertise and innovation, showcasing a commitment to excellence within aftermarket services.

Infosys

Infosys brings proven know-how in developing AV- and VR-based platforms to clients to ease training processes and customer touchpoints. It has developed a VR training platform that requires employees to get trained virtually, aided by voice-over and user interface overlays.

Persistent

Persistent Systems takes a humancentered and design-led approach to provide personalized CX. The company specializes in integrating its green framework, such as ESG, across its offerings.

TCS's advanced connected services and innovative IPs provide solution themes to numerous business problems in aftermarket services.

Tech Mahindra

Tech Mahindra technology solutions, embedded with its consulting prowess and domain expertise, help the company offer and enhance CX across the customer journey throughout the value stream.



Wipro's closed loop and continuous optimization approach, with track and trace and voice of customer capabilities, facilitates the company in improving CX and expanding into new business models through servitization.

Akkodis

Akkodis, (Rising Star) helps clients advance their digital transformation and converge their engineering and technology expertise into a digitally connected world. This allows customers to make informed decisions, improves operational efficiency and generates new business opportunities.

NTTDATA

NTT DATA, (Rising Star) uses its strong manufacturing expertise and design capabilities, fueled by the acquisition of companies such as Nexient, to help businesses from idea conception to long-term execution through continuous product innovation.

HCLTech

Leader

"HCLTech aims to create a complete experience (CX, EX, UX and MX) bundled with flexible commercial models and talent structure to add more customer value."

Srinivasan P N

Overview

HCLTech is headquartered in Noida, India. It has more than 224,000 employees spread across more than 205 delivery centers worldwide. In FY23 the company generated \$12.6 billion in revenue, with IT and Business Services as its largest segment. The company offers field support services using its know-how in digital technology services such as XR remote technology. Solutions such as SIO for aftermarkets help customers achieve end-to-end operational visibility driven by IoT-Ied insights.

Strengths

Cognitive product support framework:

The company's automation-led framework enables enterprises to augment CX, bringing consistency and predictability across B2B and B2C domains. This framework improves task efficiency, eliminates tailbacks and removes errors and inconsistencies while reducing complex issues. This ML-powered cognitive product support engine modernizes cross-channel journeys, underlining interaction through customizable dashboards and CRM/ ALM integration.

Smart integrated operations: the company's proprietary solution SIO, manages enterprises' connected products ecosystem and redefines the end-user experience. The solution improves SLA uptime, enabling manufacturers to concentrate on product

innovation and revenue generation by successfully monitoring and managing product integration and support operations. It showcases numerous capabilities, including a unified asset health dashboard, integration with inventory management, SLA tracking, cognitive maintenance and a roundthe-clock helpdesk.

Acquisition of ASAP Group: HCLTech has strategically acquired ASAP to strengthen its automotive capabilities in Germany. The Group adds over 1,600 professionals focusing on future-oriented technologies, including autonomous driving, e-mobility and connectivity.

Caution

HCLTech's acquisition of Quest Informatics has enhanced its aftermarket services portfolio across different industries. It should improve its position across consulting engagements to offer a comprehensive service package to customers.



Who Should Read This Section

The report is relevant for Europe-based enterprises evaluating providers offering platforms and applications services to design and deliver platform engineering competencies.

In this quadrant, ISG assesses the providers' current competitive portfolio strengths that offer business and technical design proficiency, build new experiences leveraging digital ecosystems, and orchestrate platforms and microservice-based architectures.

The software development landscape has transitioned into a phase of "continuous engineering," marked by an ongoing process of development, delivery, and enhancement. Several significant trends propel this evolution. Initially, a concentrated effort is to enhance code quality, composability, and resilience, facilitated by generative AI tools that supplement the developer's tasks.

Additionally, companies are transitioning from monolithic architectures towards microservices, fostering a more robust and enduring foundation through a modular design. This shift integrates advanced software engineering methodologies and strives to anticipate future business demands by offering technology agnosticism, freedom from vendor lock-in, and expedited value provision.

Lastly, organizations are advancing beyond conventional agile frameworks to embrace knowledge-oriented agility. By aggregating organizational knowledge blocks, they can deliver solutions at the rapid pace characteristic of startups, mitigating challenges associated with human reliance. These trends underscore a dedication to ongoing enhancement and the uptake of inventive approaches in software development.

Enterprises favor service providers that offer comprehensive solutions spanning the entire application lifecycle, encompassing application development, modernization, and maintenance. They lean towards integrated application service portfolios as they offer a unified roadmap for holistic transformation.

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Chief Digital Officers should read this report to understand the developments in the industry, enabling them to choose and partner with the right provider that can transform their digital landscapes.

Engineering leaders must read this report to comprehend the relative strengths and weaknesses of providers offering platform development services in the digital engineering space.

Software development and technology

leaders should read this report to understand the relative positioning of providers and how their digital engineering offerings can impact an enterprise's transformation initiatives.



This quadrant assesses the service providers' ability to design and develop a cloud-native **digital platform** that combines connected intelligence and **realtime experience** management across **products, services and**

UX.

Srinivasan P N

Definition

This quadrant has assessed service providers' ability to design and deliver digital platform engineering competencies. Key capabilities include proficiency in business and technical design, building new experiences and leveraging digital ecosystems, orchestration platforms and microservice-based architectures. This analysis also covers containerization, connected intelligence and real-time experience management across products, services and UX.

The new paradigm of platforms represents an abstraction of standardized, modularized and well-articulated process elements across the value chain, which can be applied and leveraged as virtually independent components to address specific functionalities and, hence define specific outcomes. Platforms serve specific purposes and functions that are delivered as platform services and can be easily configurable and extendable. They also yield benefits such as simplified maintenance, reduced changes for variants, decreased setup and changeover time, streamlined diagnosis and enhanced overall reliability in the process. Platforms also allow plug-and-play operations, demonstrate a heightened level of maturity and introduce consistency to the value chain.

Eligibility Criteria

- .. Digital ecosystem orchestration platform capabilities: Design, build, deliver, support, and monetize using **digital** ecosystem orchestration platforms for streamlined commerce.
- 2. Technology platforms engineering capabilities: Building and operating a common platform as a product for technology teams to reduce the time-to market and complexity
- Capabilities and proven experience: Utilize integrated digital technology platforms and digital experience of connected systems, hardware and software

- Core platform strategy and engineering capabilities: Helping businesses shift from a product to a platform mentality by architecting and developing an API and ecosystem strategy for a scalable and future-ready platform
- Cloud-native design skills: Ability and agility to leverage **cloudbased digital platform ecosystem**
- Engineering ADM competency: ADM ability with a focus on smart, connected product, design and cloud-native, digital-native design

- Product/service configurability and personalization abilities: Use of behavioral intelligence and predictive analytics on realtime/streaming data from users and smart connected devices
- 8. Ability to **augment** and **synchronize users' digital experience in real-time**
- 9. Ability to **design, build, test**, deliver, run, and augment **reusable functions/ modules** in digital
- 10. Experience in **code capability**
- 11. Showcase of and **Use Cases** leveraging GenAI in content development and knowledge curation.



Observations

Software is considered the center of any business transformation and modernization.

The demand for platformization has increased rapidly in recent years, with enterprises transforming machines and physical assets to be driven and defined by software and unlock the unparalleled potential to create new business opportunities.

The software-defined everything (SDx) approach is gaining significant traction as it provides greater flexibility, agility and sustainable benefits, creating an innovative business model for digital transformation initiatives.

Here are a few trends observed in the platform and application services space:

 Providers have become more ecosystemfocused by increasing collaboration with hyperscalers and technology partners to shorten the innovation cycle and build a cohesive ecosystem to deliver IP-led offerings. • The low-code/no-code approach has gained considerable reach as this significantly shrinks the development time, reduces costs and requires less dedicated expertise.

From the 102 companies assessed for this study, 32 qualified for this quadrant, with 11 being Leaders and two Rising Stars.

accenture

Accenture platform-driven methodology, complemented by a differentiated set of accelerators and verticalized IPs, ensures faster TTM, better predictability and optimized TCO.

Capgemini

Capgemini's agile way of working and productoriented operating model bridges the gap between technology and business, enabling businesses to innovate and disrupt the future.

📀 cognizant

Cognizant investment in developing new IPs, including Cognizant Neuro[™] and Skygrade[™], helps businesses to align, define and build future-proof software that drives and delivers business value.



Harman Digital Transformation Services'

unmatched global scale, R&D and innovation are guided by intense consultative approaches and verticalized products and platforms, ensuring faster TTM.

HCLTech

HCLTech investment in building critical platforms and acquisitions benefits customers by converging physical assets and digital platforms across industries to support numerous industry-specific use cases.

Infosys'

Infosys is a rich repository of in-house tools and IPs, such as Infosys Cobalt and Infosys Topaz, which support clients in their digital journey and value realization.

C LTIMindtree

LTIMindtree has extensive abilities in data microservices, architecture and development, helping organizations build end-to-end platforms that deliver cost benefits, quality, predictability and reliability.

NTTDATA

NTT DATA supports organizations in their platformization journey by developing comprehensive software products. It has many IPs, accelerators and frameworks that accelerate the idea-to-execution pipeline by building new experiences, products and analytics.

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Persistent

Persistent Systems has enhanced its positioning by expanding its portfolio in cloud-native application development, cloud engineering, Al, analytics and other nextgeneration technologies. It has developed accelerators across business verticals that help clients shorten TTM.

TCS engineering connected pool ecosystem, driven by the software-defined everything concept, enables customers to leverage and monetize data for product insights and improvements.



Wipro's integrated approach to transforming legacy operation models into software-driven operation businesses, driven by a set of platforms and solutions, makes it a Leader in this quadrant. Its recent launch of SDVerse in partnership with GM and Magna is the first of its kind in the industry.

GlobalLogic

GlobalLogic (Rising Star) comprehensive platform engineering services support clients in achieving business outcomes by investing in building, operating and maintaining highperformance, secured and scalable platforms.

Tech Mahindra

Tech Mahindra (Rising Star) Engineering Foundation Services and full stack observability capabilities with industry flavors help deliver business outcomes to enterprises.

HCLTech

P Leader "HCLTech's platformization approach across the engineering, operations and management value chain, combined with a diversified partner network and innovation mindset, makes it a Leader in this quadrant."

Srinivasan P N

Overview

HCLTech is headquartered in Noida, India. It has more than 224,000 employees spread across more than 205 delivery centers worldwide. In FY23 the company generated \$12.6 billion in revenue, with IT and Business Services as its largest segment. HCLTech's xLMCloud platform enables enterprises to transform their business. IT and Infrastructure applications on the cloud, allowing them to be more agile, scalable, high-performing and secure. This application landscape helps organizations gain complete ownership of operations through operations and cloud administration, lowering the total ownership cost.

Strengths

Accelerators for guicker GTM: HCLTech's solution-focused approach helps enterprises accelerate their digital transformation journey blended with innovation and guality. HCLTech has developed end-to-end next-generation cutting-edge solutions to transform customer experiences across domains, including sustainability engineering, data engineering, digital thread/twin and XR and VR. A few solutions that enable quicker TTM include eDAT[™] for automated testing of electronic devices, the IDoRAN framework for automated image and document extraction, and the 5G system integration framework and Al Force, an innovative GenAl platform that accelerates time-to-value by transforming the software development and engineering lifecycle, delivering greater productivity, improved quality and faster release timelines.

Enhanced data management capabilities:

HCLTech's Platform Acceleration Suite (PAS) enables enterprises to avoid redundancies across infrastructure, people, processes and licenses using the reuse/foundation approach. Its standardized and integrated technology stack offers state-of-the-art data management capabilities with built-in security for preventing attacks and ensuring compliance. It also accelerates ease code development driven by automation and has many reusable components accelerating development.

Caution

HCLTech has built many platforms and solutions that could accelerate and transform enterprises' digital journeys. However, it should implement a strong marketing strategy that could make it a one-stop shop for enterprises' needs.



Intelligent Operations

Intelligent Operations

Who Should Read This Section

The report is relevant for Europe-based enterprises, evaluating providers offering intelligent operations across industries with legacy factories and production plants.

In this quadrant, ISG assesses the competitive portfolio strengths of providers that address enterprise requirements for innovative and new digital technologies and help them set up intelligent greenfield and brownfield plants and operations.

With the evolution of Industry 4.0, enterprises are curious to develop enhanced digital twins by incorporating predictive AI to simulate operational scenarios more accurately, which is becoming increasingly important. Anticipations now focus on digital twins replicating present operations and forecasting future outcomes, facilitating proactive adjustments in strategy.

Another noteworthy trend is the growing impact of cloud adoption within the realm of Intelligent Operations, which is evident in multiple manifestations. This encompasses a greater focus on data science and analytics, utilizing AI technologies and Machine Learning models to optimize processes.

Enterprises seek providers to implement emerging technologies and reassess and streamline business processes and models. They anticipate swift cost reduction without prioritizing the development of a robust roadmap aligned with business outcomes and customer advantages. Occasionally, business units operate independently, pursuing diverse goals that may not align with overarching organizational objectives. Providers collaborating with enterprises must be able to integrate and harmonize the endeavors of various business units, fostering a mindset shift towards attaining overarching business objectives. Additionally, providers must boast extensive portfolios spanning technologies, including analytics, MR/VR, robotics, and digital twins, as well as solutions addressing cybersecurity, privacy, and transparency.

Engineering leaders should read this report to understand better the relative strengths and weaknesses of providers offering intelligent operation portfolios.

Manufacturing leaders should read this report to understand better the current landscape of digital engineering service providers in Europe.



Software development and technology leaders should read this report to

understand the relative positioning of providers and how their digital engineering offerings can impact an enterprise's transformation initiatives.



The quadrant assesses the provider's capability to **transform legacy factories and production plants into intelligent operations** that are connected and autonomous using **Industry 4.0, smart factories, and IIoT** concepts.

Srinivasan P N

Definition

This guadrant assesses service providers offering intelligent operations to clients across industries, particularly with legacy factories and production plants. These providers offer smart and new digital technologies and methods and help set up intelligent greenfield and brownfield plants and operations. Intelligent operations encompass paradigms such as Industry 4.0, 5.0, smart industries and IIoT that significantly impact the industry. These trends are aimed at making connected, autonomous operations capable of self-decision-making and autocorrection. Key aspects of these intelligent operations include machines communicating with each other, fetching the status of various operations and making informed decisions and corrections at both upstream and downstream ends. This helps reduce manual dependencies and interventions, leading to an increase in operational efficiency.

Eligibility Criteria

- Proven experience in design, implementation and operations: Technologies, methods, structures and processes used in the context of **Industry 4.0, smart factories, smart production/operations**, supply chain, distributions, and service operations
- 2. Breadth and depth of coverage in connected operations for different types of industries in the target regions, with proven examples
- Experience in OT solutions, specifically across data, security, and people aspects

- Experience with applying digital technologies, Including various **digital threads** such as real-time AI and machine learning, remote, field, and hazardous operations management, real-time data engineering, edge computing, 5G, industrial cybersecurity, and cloud engineering
- Asset performance, maintenance and lifecycle management: Covering **asset performance monitoring**, maintenance schedules, lifetime value optimization and predictive maintenance

- 6. ESG compliance resources: Support for environmentally sustainable smart operations.
 - Demonstrated experience with new business/operating models: New ways of operating and optimizing highly **flexible and intelligent production** and assembly lines/flow operations, supporting new business models

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Intelligent Operations

Observations

The intervention of physical assets and the digital stack has made enterprises reimagine the improbable into possible ones. Enterprises are transforming shop floor setups and supply chain networks by introducing digital technologies across the value stream.

The growth and adoption of next-generation technologies such as GenAl, IoT, 5G, Industry 4.0/5.0 and green factory accelerate the transformation of legacy models to an advanced one, providing greater visibility, reducing the turnaround time, optimizing costs and predicting business hazards.

Here are a few trends observed in this segment:

• The integration of data across the digital thread is more relevant today because we are seeing an explosion of complexity in products in the market. Modern consumer demand for smart, customized, connected and sustainable products is driving the need for seamless integration between intelligent operations and the systems responsible for managing and generating master data for

products and processes. Solutions for digital manufacturing are no longer being seen as standalone systems, but critical components of a holistic digital value chain ecosystem across which data flows continuously. The realization of the digital thread across the product lifecycle via integration serves as an exemplary illustration of how digitalization can effectively facilitate mass customization and address the escalating challenges posed by the increasing complexity of products. It also vividly demonstrates how IT and data technology can serve as key differentiators in the market, enabling businesses to excel in an environment characterized by evolving customer demands and challenges.

 Predictive and prescriptive analytics are being recognized as prominent changemakers in intelligent manufacturing setups as they help improve decisionmaking in critical business processes such as production planning and supply chain management. From the 102 companies assessed for this study, 34 qualified for this quadrant, with 12 being Leaders and two Rising Stars.

accenture

Accenture's combines its advisory skills, deep process capabilities, industry expertise and talent ecosystem to make client organizations more intelligent and innovative. The company has made over 10 acquisitions in this space over the last 12 months.

Bosch SDS

Bosch Software and Digital Solutions

Industry 4.0 initiatives cover the digitalization of manufacturing shop floors to increase the throughput and output, maximizing value from existing resources.

Capgemini

Capgemini's innovation on Intelligent Industry powered by frameworks and IPs facilitates enterprises to build more efficient, valuable and sustainable products, processes and services.

Cognizant

Cognizant operations and offerings, driven by frameworks and accelerators, provide a competitive edge, supporting clients in leveraging IT–OT convergence, harmonizing processes, and standardizing applications to deliver connected factory vision.

Cyient

Cyient manufacturing operations management (MOM) services provide a combined digital thread methodology that integrates machines, digitalizes processes and infuses intelligence across the value chain.



HCLTech

HCLTech's proven engineering landscape, complemented by the proper set of acquisitions, helps it deliver transformational projects in this space.

Infosys

Infosys leverages its cross-industry capabilities, focusing on the cloud and accelerators, to help provide an end-to-end intelligent operations portfolio. The company's acquisitions, such as Kaleidoscope and In-Semi, have helped expand its digital engineering portfolio.

C LTIMindtree

LTIMindtree profound digital twin capabilities, strong vertical experience and comprehensive PLM offerings provide a competitive edge to clients in their digital transformation journey.

LTTS

LTTS delivers services with digital twin and thread concepts as building blocks for digital transformation across industry verticals to address business challenges in efficiency, quality, innovation and profitability across the value stream.

TCS' comprehensive PLM architecture around the building blocks of digital thread supports customers to enable a fully connected product ecosystem.

Tech Mahindra

Tech Mahindra's advanced simulation, 3D modeling and digital twin technologies, combined with domain expertise, help them improve the efficiency of manufacturing processes and create innovative, safer and more efficient products.



Wipro has made significant advancements by building scalable platforms that fit the individual transformation requirements of manufacturing customers from legacy to nextgeneration platforms.

Akkodis

Akkodis, (Rising Star) brings verticalized expertise, profound engineering excellence, and an innovation mindset. This has helped the company establish joint ventures with leading manufacturing and automotive OEMs, supporting them in unlocking digital interventions across the value chain to solve critical business problems.

Randstad Digital

Randstad Digital (Rising Star) helps customers in digital enablement and innovation through its focused package solution that combines everything from connected machines to sensors to business applications.

HCLTech

Leader

"HCLTech's demonstration of reference architectures and solutions for digital manufacturing capabilities covering the digital engineering spectrum across 10 verticals makes it a preferred provider for enterprises."

Srinivasan P N

Overview

HCLTech is headquartered in Noida, India. It has more than 224,000 employees spread across more than 205 delivery centers worldwide. In FY23 the company generated \$12.6 billion in revenue, with IT and Business Services as its largest segment. The company's Plant WorkBlaze solution powered by Al provides seamless integration between IT and OT environments. It also provides a unified view of operations using an agile production system to meet market demands, forecast sales, reduce downtimes and prevent machine failures by integrating people, processes and technologies.

Strengths

Industry NeXT Framework: Driven by Industry 4.0 concepts, the Industry NeXT Framework helps organizations develop cognitive ecosystems of connected experiences, resilient operations and business practices. This comprehensive technology-driven portfolio covers an end-toend service framework that addresses clients journeys through intelligent manufacturing and automation, from design to aftermarket. The services cover strategy consulting, solution development, implementation and maintenance support with ready templates, methodologies, solutions and accelerators for deployment at scale and speed. Intense digital twin offerings: HCLTech brings in digital twin capabilities at different levels, creating a virtual replica of the entire ecosystem that covers R&D engineering, operations and experience and manufacturing and aftermarket services, making it a one-stop shop for various requirements. Its accelerators include AssetTwin360 for asset management; ECCO, a digital thread framework for visibility and traceability of context-specific information; and SCMTwin for supply chain decisions for sourcing and resilience.

Caution

HCLTech, with its long-standing relationship with enterprises for its engineering capabilities, must shy away from the legacy business model and consider expanding its outcome-based business model to be the preferred provider for enterprises.

Star of Excellence

A program, designed by ISG, to collect client feedback about providers' success in demonstrating the highest standards of client service excellence and customer centricity.

Source: ISG Star of Excellence™ research program, Insights till April 2024

In the ISG Star of Excellence[™] research on enterprise customer experience (CX), clients have given feedback about their experience with service providers for their **Digital Engineering** services.

Based on the direct feedback of enterprise clients, below are the key highlights:

ient Business Role	Region	Industry
Nost satisfied hared Services Operations	Most satisfied Eastern Europe	Most satisfied Oil and Gas
east satisfied egal/Compliance	Least satisfied Middle East	Least satisfied Pharmaceuticals and life sciences

Industry Average CX Score



▲ Highest CX: 86.7▼ Lowest CX: 66.6

CX Score: 100 most satisfied, 0 least satisfied Total responses (N) = 266

Most Important CX Pillar

С

Collaboration and Transparency

Service Delivery Models	Avg % of Work Done
Onsite	47%
Nearshore	20%
Offshore	28%





Methodology & Team

The ISG Provider Lens 2024 – Digital Engineering Services research study analyzes the relevant software vendors/service providers in the global 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 April 2024, 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 Digital Engineering Services market
- Use of questionnaire-based surveys of service providers/ vendor across all trend topics
- 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

- 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





Lead Author



Srinivasan PN is a Senior Lead Analyst at ISG and is responsible for supporting and co-authoring ISG Provider Lens™ studies on Digital Engineering, AWS & Google Ecosystem. His area of expertise lies in engineering services and digital transformation.

Srinivasan has close to a decade of experience in the technology research industry, and in his prior role, he carried out research delivery for both primary and secondary research capabilities. Srinivasan also authors enterprise context reports and global summary reports for his expertise. He also supports the advisors with his research skills and writes papers about the latest market developments in the industry.



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.

İSG 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 <u>webpage</u>.

İSG 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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For more information about ISG Research™ subscriptions, please email <u>contact@isg-one.com</u>, call +1.203.454.3900, or visit research.isg-one.com.

İSG

ISG (Information Services Group) (Nasdaq: III) is a leading global technology research and advisory firm. A trusted business partner to more than 900 clients. including more than 75 of the world's top 100 enterprises, ISG is committed to helping corporations, public sector organizations, and service and technology providers achieve operational excellence and faster growth. The firm specializes in digital transformation services, including Al and automation, cloud and data analytics; sourcing advisory; managed governance and risk services; network carrier services; strategy and operations design; change management; market intelligence and technology research and analysis.

Founded in 2006, and based in Stamford, Conn., ISG employs 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.



MAY, 2024

REPORT: DIGITAL ENGINEERING SERVICES

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