iSG Provider Lens™

Digital Engineering Services

Analyzing digital engineering capabilities from design to customer experience

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Generative AI's Transformative Impact on Engineering and Business Operations

From ideation to virtual prototyping, simulations and large-scale testing, generative AI (GenAI) is revolutionizing engineering with real-time user feedback integration. Large language models (LLMs) streamline rapid ideation and user participation, facilitate document generation and integrate quick search and query retrievals from relevant deep technical research, enhancing the quality of R&D and design processes.

Vision language models (VLMs) enable rapid prototyping by converting sketches or 3D models into detailed specifications, fostering collaborative designs across teams. AI-driven simulations predict product performance and optimize materials and manufacturing methods.

Hyperscaler platforms, such as Microsoft's Remote Desktop (RD) platform, use LLMs and VLMs to reduce development and testing costs, enhance precision and unlock new opportunities for creative digital and physical design solutions.

GenAI transforms aftermarket services and customer support via digital avatars. It automates software development processes, enhancing platform scalability, security and resilience.
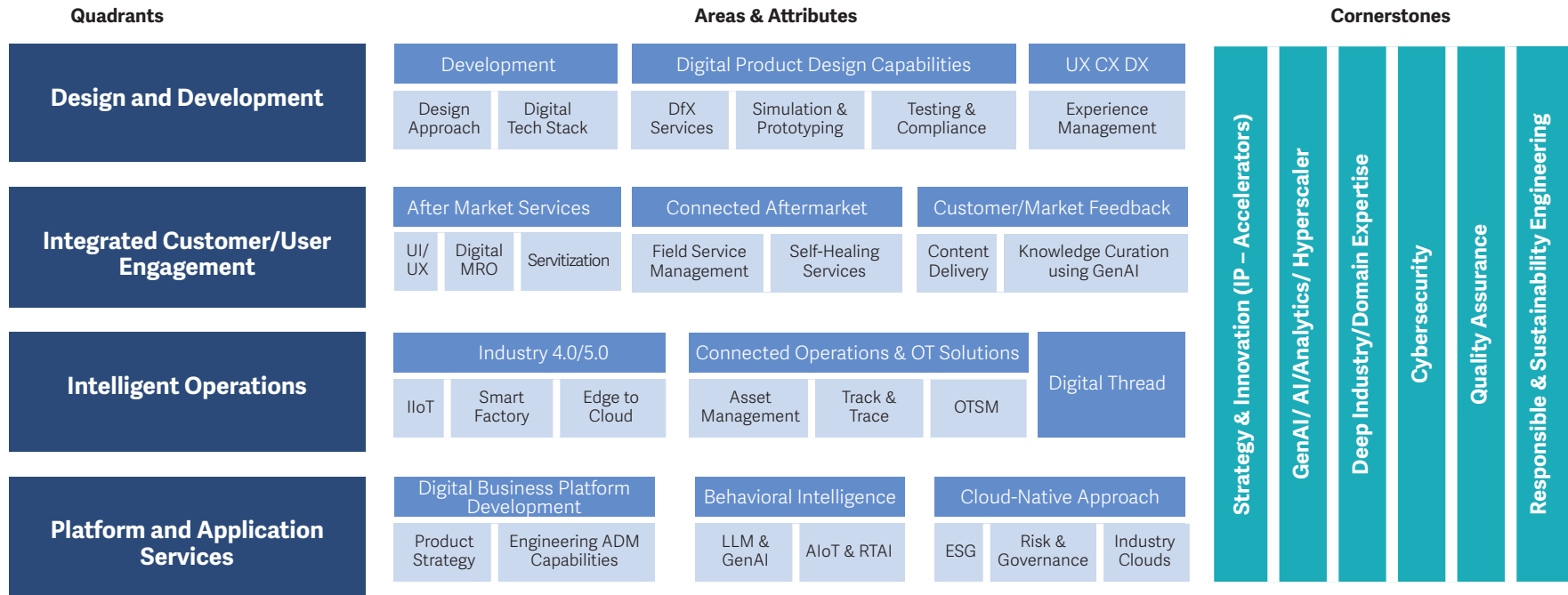
AI systems predict failures, optimize workflows and enable efficient remote operations. VLMs enhance aftermarket services with intelligent chatbots, real-time support and predictive maintenance, improving efficiency and customer satisfaction.

Industry-specific solutions, such as the Internet of Medical Things (IoMT), help smart machines autonomously process data and generate rapid insights and action triggers that can be lifesaving.

VLMs analyze images/videos to identify defects, suggest repairs and manage inventory and services. This reduces downtime, extends product lifecycles and improves efficiency and customer loyalty through data-driven and cost-effective aftermarket solutions.
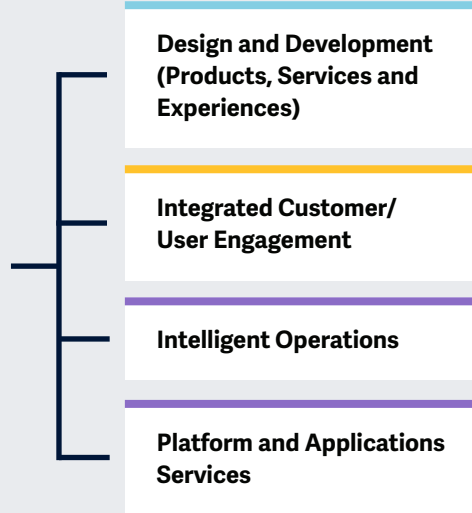
Digital Engeneering Services - Deep View

Quadrants

Areas & Attributes

Cornerstones

Design and Development

Development		Digital Product Design Capabilities			UX CX DX
Design Approach	Digital Tech Stack	DfX Services	Simulation & Prototyping	Testing & Compliance	Experience Management

Integrated Customer/User Engagement

After Market Services			Connected Aftermarket		Customer/Market Feedback	
UI/ UX	Digital MRO	Servitization	Field Service Management	Self-Healing Services	Content Delivery	Knowledge Curation using GenAI

Intelligent Operations

Industry 4.0/5.0			Connected Operations & OT Solutions			Digital Thread
IIoT	Smart Factory	Edge to Cloud	Asset Management	Track & Trace	OTSM	

Platform and Application Services

Digital Business Platform Development		Behavioral Intelligence		Cloud-Native Approach		
Product Strategy	Engineering ADM Capabilities	LLM & GenAI	AIoT & RTAI	ESG	Risk & Governance	Industry Clouds

Cornerstones:
- Strategy & Innovation (IP – Accelerators)
- GenAI/ AI/Analytics/ Hyperscaler
- Deep Industry/Domain Expertise
- Cybersecurity
- Quality Assurance
- Responsible & Sustainability Engineering

Key focus areas for **Digital Engineering Services** 2025

Simplified Illustration Source: ISG 2024

Design and Development (Products, Services and Experiences)

Integrated Customer/ User Engagement

Intelligent Operations

Platform and Applications Services

Scope of the report

The ISG Provider Lens™ Digital Engineering Services study offers the following to business and IT decision-makers:

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

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

Design and Development (Products, Services and Experiences)

Definition

This quadrant assesses providers' ability to deliver integrated hardware and software, 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 benefits include faster product innovation cycles and time-to-market, smarter and more connected digital products and an improved CX.

Key enabling capabilities include design thinking and digital product design techniques that cover the entire new product introduction (NPI) process, from ideation to pilot runs of the product and services under consideration. This process is known as idea to realization, which validates new product ideas in the form of new features to be added to the existing product.

Technologies such as computer-aided design (CAD), computer-aided manufacturing (CAM) and computer-aided engineering (CAE) enable tools and techniques to track design changes across the NPI value chain.

Recent GenAI advancements have exponentially augmented digital experience and design capabilities, such as generative design and simulations, virtual prototype design and testing, on a large scale.

Eligibility Criteria

1. Supporting digital business platform development strategies, **new product/service/business design and development capabilities**, and their integration and scaling

2. Using **design thinking capabilities**, new **product/service strategy** and requirements analysis, **market research** and generative design capabilities to support creativity and innovation

3. Developing user/human-centric design, persona-based journey mapping, design and storyboarding, **UI/UX**, industrial, service and interaction design, net new **hyperpersonalization** and platform experience design with **GenAI**. For example, personal digital avatars as service assistants

4. Addressing novel product/service/experience design through model-based system engineering, **digital twins, swift prototyping**, autonomous testing and **quality management** via platforms, product lifecycle management and data- and model-driven engineering

5. Supporting functionality **AR/VR/MR and extended/immersive reality**, additive manufacturing and 3D printing

6. Demonstrating success stories leveraging **GenAI in design** and product experience management for responsible and sustainable design approach

Integrated Customer/User Engagement

Definition

This quadrant covers providers using intelligent aftermarket services to deliver customer services and product support through digital platforms. Providers' key capabilities in this space include providing AI-enabled customer services, virtual agents, self-service knowledge support, remote services and field support, 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 end users. The degree of customer satisfaction relative to their expectations ultimately influences their decision for repeat purchases and is a critical determinant of success. Feedback in the form of the voice of the customer (VoC) obtained from various down-the-line digital sources plays a vital role in making a self-learning and auto-correcting process highly relevant to customers and CX providers.

Eligibility Criteria

1. Using **engineering data analytics, AI and ML** in **maintenance, field service management and self-healing services**

2. Possessing warranty management, lifecycle **management and maintenance**, repair and operations (MRO) capabilities. **Focus on digital experience platforms service**, customer engagement and query resolution and support

3. Innovating aftermarket services interfaces—**UI/UX design** and engineering and **product/service personalization**

4. Using digital technologies such as AI and GenAI to create and deliver **hyperpersonalized experiences**

5. Using IoT technologies, **AR/VR-powered digital avatars** and **virtual customer care assistants, real-time knowledge** support and predictive actions suggestion engines to provide remote infield customer service and support

6. Offering **autonomous and intelligent content distribution**, on-demand and **AI-powered self-service knowledge** help such as **using NLP, NLU and NLG, conversational AI** and virtual agent support

7. Utilizing customer, **field and market feedback** across all relevant channels, including social media and the Internet. **Track and trace capability** across the value chain

8. Using **GenAI** for **content development, knowledge curation and feedback mechanisms** that could support different processes

Intelligent Operations

Definition

This quadrant 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, digital twins/thread, smart factories and IIoT that significantly impact the industry.

These trends aim to make connected and autonomous operations capable of self-decision-making and auto-correction. 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. They help reduce manual dependencies and interventions, leading to increased operational efficiency.

Eligibility Criteria

1. Having experience in design, implementation, operations **technologies, methods, structures and processes** used in the context of **Industry 4.0, smart factories, smart production/operations**, intelligent supply chain, distributions and service operations

2. Offering **connected operations** for different types of industries in target regions

3. Possessing experience in **OT solutions**, especially across data, security and people aspects and integrating **IT/OT/ET environments**

4. Covering asset performance monitoring, maintenance schedules, lifetime value optimization and predictive maintenance

5. **Applying digital technologies, including various digital threads, to automate workflows** between engineering, manufacturing and supply chain functions. Using technologies such as real-time AI/ML, data engineering, edge computing, 5G, **industrial cybersecurity** and cloud engineering

6. Covering asset performance monitoring, maintenance schedules, lifetime value optimization and predictive maintenance

7. Supporting environmentally **sustainable intelligent operations**

8. Operating and optimizing **highly flexible and intelligent production** and assembly lines/flow operations and supporting new business models

9. Using **GenAI capabilities in predictive maintenance**, quality control, process optimization and documentation capabilities

Platform and Application Services

Definition

This quadrant assesses service providers' ability to design and deliver digital platform engineering competencies. Key capabilities include business and technical design proficiency and building new experiences using 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 platform paradigm represents an abstraction of standardized, modularized and well-articulated process elements across the value chain. These elements can be used as virtually independent components to address specific functionalities and define outcomes.

Platforms deliver services that are easily configurable and extendable. They offer simplified maintenance, reduced changes for variants, decreased setup and changeover time, streamlined diagnosis and enhanced reliability. They also allow plug-and-play operations and bring a heightened maturity level and consistency to the value chain.

Eligibility Criteria

1. Using **digital ecosystem orchestration** platforms to **build and operate a common platform** as a product for technology teams to **reduce time to market** and complexity

2. **Using integrated digital technology platforms** and digital experience of connected systems, hardware and software

3. 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

4. Using a **cloud-based digital platform ecosystem**

5. **Engineering ADM ability with a focus on smart and connected product** design and cloud- and digital-native design

6. Using **behavioral intelligence and predictive analytics** on real-time/streaming data from users and smart connected devices

7. Augmenting and synchronizing **users' digital experience in real time**

8. Offering services to **design, build, test, deliver, run and augment** reusable digital functions/modules

9. **Possessing experience in code capability** and multi-platform integration

10. Showcasing **success stories using GenAI** in content development and knowledge curation

Quadrants by Region

As a part of this ISG Provider Lens™ quadrant study, we are covering the following four quadrants on Digital Engineering Services 2025:

Quadrant	Europe	U.S.
Design and Development (Products, Services and Experiences)	✔	✔
Integrated Cutomer/ User Engagement	✔	✔
Intelligent Operations	✔	✔
Platform and Applications Services	✔	✔

The research phase falls in the period between October and December 2024, during which survey, evaluation, analysis and validation will take place. The results will be presented to the media in April 2025.

Milestones	Beginning	End
Survey Launch	October 23, 2024	
Survey Phase	October 23, 2024	December 06, 2024
Sneak Preview	February 2025	March 2025
Press Release & Publication	April 2025	

Collecting client testimonials via the Star of Excellence Program requires early client referrals (no official reference needed) because CX scores have a direct influence on the provider's position in the IPL quadrant and the awards.

Please refer to the link to view/download the ISG Provider Lens™ 2025 research agenda.

Access to Online Portal

You can view/download the questionnaire from here using the credentials you have already created or refer to instructions provided in the invitation email to generate a new password. We look forward to your participation!

Buyers Guide

ISG Software Research, formerly "Ventana Research," offers market insights by evaluating technology providers and products through its Buyers Guides. The findings are drawn from the research-based analysis of product and customer experience categories, ranking and rating software providers and products to help facilitate informed decision-making and selection processes for technology.

In the course of the Digital Engineering Services IPL launch, we want to take advantage of the opportunity to draw your attention to related research and insights that ISG Research will publish in 2025. For more information, refer to the Buyers Guide research schedule.

Research Production Disclaimer:

ISG collects data for the purposes of writing research and creating provider/vendor profiles. The profiles and supporting data are used by ISG advisors to make recommendations and inform their clients of the experience and qualifications of any applicable provider/vendor for outsourcing the work identified by clients. This data is collected as part of the ISG FutureSource™ process and the Candidate Provider Qualification (CPQ) process. ISG may choose to only utilize this collected data pertaining to certain countries or regions for the education and purposes of its advisors and not produce ISG Provider Lens™ reports. These decisions will be made based on the level and completeness of the information received directly from providers/vendors and the availability of experienced analysts for those countries or regions. Submitted information may also be used for individual research projects or for briefing notes that will be written by the lead analysts.

ISG Star of Excellence™ – Call for nominations

The Star of Excellence™ is an independent recognition of excellent service delivery based on the concept of "Voice of the Customer." The Star of Excellence™ is a program, designed by ISG, to collect client feedback about service providers' success in demonstrating the highest standards of client service excellence and customer centricity.

The global survey is all about services that are associated with IPL studies. In consequence, all ISG Analysts will be continuously provided with information on the customer experience of all relevant service providers. This information comes on top of existing first-hand advisor feedback that IPL leverages in context of its practitioner-led consulting approach.

Providers are invited to nominate their clients to participate. Once the nomination has been submitted, ISG sends out a mail confirmation to both sides. It is self-evident that ISG anonymizes all customer data and does not share it with third parties.

It is our vision that the Star of Excellence™ will be recognized as the leading industry recognition for client service excellence and serve as the benchmark for measuring client sentiments.

To ensure your selected clients complete the feedback for your nominated engagement please use the Client nomination section on the Star of Excellence™ website.

We have set up an email where you can direct any questions or provide comments. This email will be checked daily, please allow up to 24 hours for a reply.

Here is the email address:
ISG.star@isg-one.com

ISG Star of Excellence

Methodology & Team

The ISG Provider Lens – Digital Engineering Services 2025 research study analyzes the relevant software vendors/service providers in the Europe and U.S. 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 study will include data from the ISG Provider Lens™ program, ongoing ISG Research programs, interviews with ISG advisors, briefings with service providers and analysis of publicly available market information from multiple sources. ISG recognizes the time lapse and possible market developments between research and publishing, in terms of mergers and acquisitions, and acknowledges that those changes will not reflect in the reports for this study.

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

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ISG Provider Lens Advisors Involvement Program

ISG Provider Lens offers market assessments incorporating practitioner insights, reflecting regional focus and independent research. ISG ensures advisor involvement in each study to cover the appropriate market details aligned to the respective service lines/technology trends, service provider presence and enterprise context.

In each region, ISG has expert thought leaders and respected advisors who know the provider portfolios and offerings as well as enterprise requirements and market trends. On average, three advisors participate as part of each study's quality and consistency review team (QCRT). The QCRT ensures each study reflects ISG advisors' experience in the field, which complements the primary and secondary research the analysts conduct. ISG advisors participate in each study as part of the QCRT group and contribute at different levels depending on their availability and expertise.

The QCRT advisors:

- Help define and validate quadrants and questionnaires,

- Advise on service provider inclusion, participate in briefing calls,

- Give their perspectives on service provider ratings and review report drafts.

ISG Advisors to this study

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Principal Consultant

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Rajvanshi

Principal Consultant

Swadhin
Pradhan

**Assistant Director
and Principal Analyst
Manufacturing**

Invited Companies

If your company is listed on this page or you feel your company should be listed, please contact ISG to ensure we have the correct contact person(s) to actively participate in this research.

* Rated in previous iteration

Accenture*	CGI	Expleo	Innova Solutions
Accolite Digital*	CI&T*	e-Zest Solutions*	ITC Infotech*
ACL Digital*	Cigniti*	GlobalLogic*	KPIT*
AFRY	CoForge	Globant	LTIMindtree*
Akkodis*	Cognizant*	Grid Dynamics	LTTS*
All for One Group	Cyient*	Happiest Minds*	Mindteck
Alten	Daffodil Software	HARMAN Digital Transformation Solutions*	MMT Digital
Apexon*	DXC Technology*	HCLTech*	Motherson Technology*
Ascendion*	EDAG*	Hexaware*	Nagarro
Axiscades	eInfochips*	IBM	Ness Digital Engineering*
Bertrandt*	Encora*	Infinite Computer Solutions*	N-iX
BlueBinaries	Endava	Infogain	NTT Data*
Bosch SDS*	Engineering Industries eXcellence*	Infosys*	Onward Tech
Capgemini*	EPAM Systems*	Infovision*	Orion Innovation
Caresoft Global	Eviden	Innominds	Persistent Systems*

Invited Companies

Publicis Sapient*

Qualitest*

QuEST Global

Randstad Digital*

Safran Engineering Services

SAIC

Samsung SDS

Sasken

SLK Group

Sofftek

Softdel

Softserve

Sonata Software

Sutherland

Tata Elxsi*

Tata Technologies

TCS*

Tech Mahindra*

UST*

VVDN Technologies

Winwire*

Wipro*

Xebia

Xoriant

Zensar Technologies*

About Our Company & Research

ISG Provider Lens™

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

For more information about ISG Provider Lens™ research, please visit this webpage.

ISG Research™

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

ISG offers research specifically about providers to state and local governments (including counties, cities) as well as higher education institutions. Visit: Public Sector.

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

ISG

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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.

ISG Provider Lens™

OCTOBER, 2024

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REPORT: DIGITAL ENGINEERING SERVICES