

NEAT EVALUATION FOR INFOSYS:

# Digital Manufacturing Services

Market Segment: Overall

## Introduction

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This is a custom report for Infosys presenting the findings of the NelsonHall NEAT vendor evaluation for *Digital Manufacturing Services* in the *Overall* market segment. It contains the NEAT graph of vendor performance, a summary vendor analysis of Infosys for digital manufacturing services, and the latest market analysis summary for digital manufacturing services.

This NelsonHall Vendor Evaluation & Assessment Tool (NEAT) analyzes the performance of vendors offering digital manufacturing services. The NEAT tool allows strategic sourcing managers to assess the capability of vendors across a range of criteria and business situations and identify the best performing vendors overall, and with specific capability in consulting, build, and managed services.

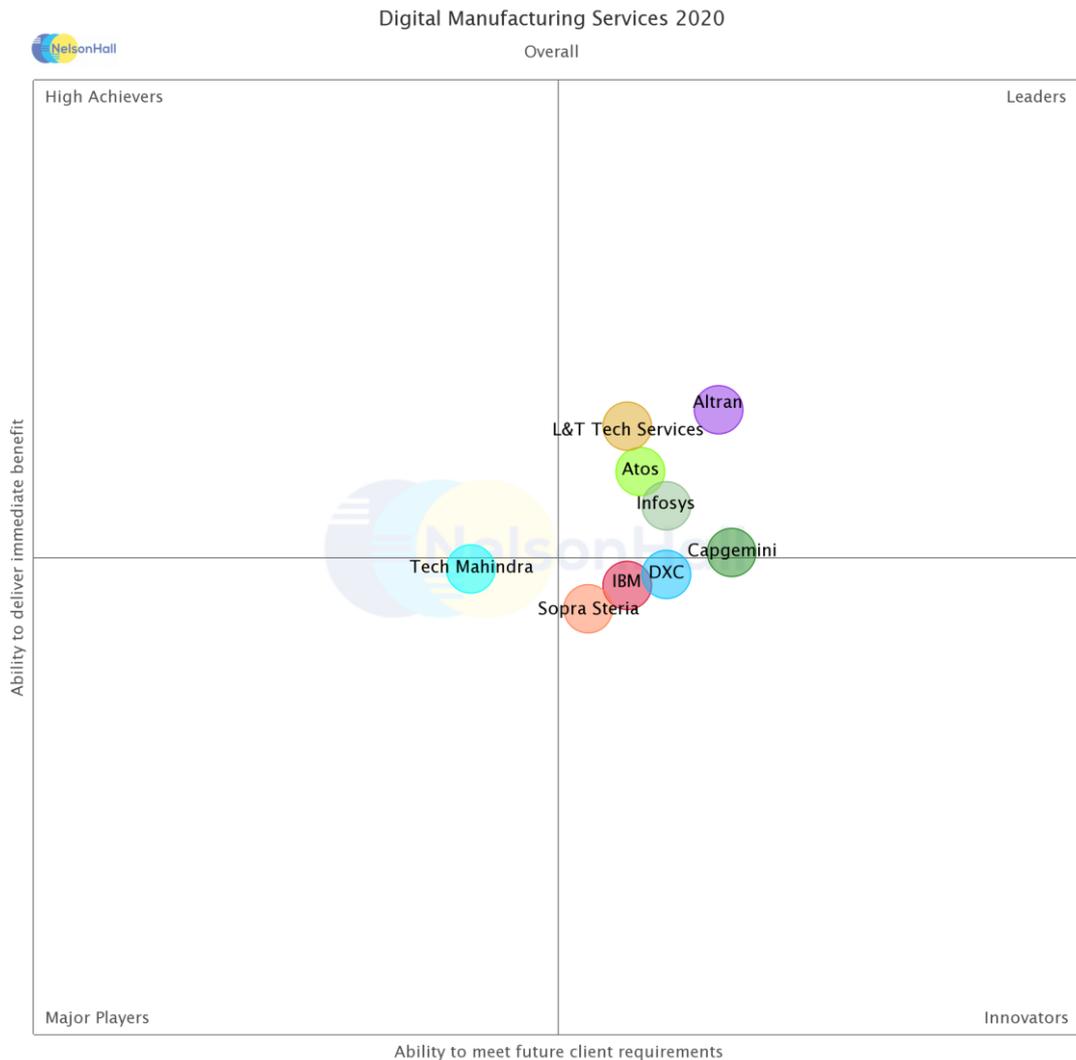
Evaluating vendors on both their 'ability to deliver immediate benefit' and their 'ability to meet client future requirements', vendors are identified in one of four categories: Leaders, High Achievers, Innovators, and Major Players.

Vendors evaluated for this NEAT are Altran, Atos, Capgemini, DXC Technology, IBM, Infosys, L&T Technology Services, Sopra Steria, and Tech Mahindra.

Further explanation of the NEAT methodology is included at the end of the report.



# NEAT Evaluation: Digital Manufacturing Services (Overall)



NelsonHall has identified Infosys as a Leader in the *Overall* market segment, as shown in the NEAT graph. This market segment reflects Infosys’ overall ability to meet future client requirements as well as delivering immediate benefits to digital manufacturing services clients.

Leaders are vendors that exhibit both a high ability relative to their peers to deliver immediate benefit and a high capability relative to their peers to meet client future requirements.

Buy-side organizations can access the *Digital Manufacturing Services* NEAT tool (*Overall*) [here](#).

## Vendor Analysis Summary for Infosys

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### Overview

Infosys highlights that its manufacturing expertise has a background in product engineering services, through its Engineering Services unit. Engineering Services is one of Infosys' nine service lines (which also include ADM, Enterprise Application Package Services, Cloud Infrastructure and Security Services, Digital Experience and Integration Services, Business Process Management, Data and Analytics, Platforms, and Independent Validation Solutions).

In the past ten years, Engineering Services has expanded its capabilities from product engineering services to services around PLM, CAx, and knowledge-based engineering, and to manufacturing applications, including services around ERPs (SAP Manufacturing Intelligence, Integration, and Analytics and SAP Plant Maintenance), MES, MoMs, robotics and other shop floor automation systems. The unit continues to invest in its manufacturing capabilities, notably with the increasing overlap between ER&D services and IT services around offerings such as digital thread and digital twins.

Infosys' manufacturing client base includes firms active in aerospace and defense, high-tech, automotive, pharmaceutical, medical device manufacturers, process, and other industrial manufacturing firms.

Infosys had ~250 manufacturing clients out of a total of 1,336 clients overall at the end of Q2 2019.

Infosys has structured its "smart manufacturing" portfolio around five main IT/OT topics:

- Application services, around supply chain, ERPs, MES, and MoMs
- Automation & control, i.e. shop-floor automation
- Big data & analytics
- Connectivity
- Cybersecurity of manufacturing systems
- Robotics and autonomous systems.

Broadly-speaking, Infosys is rejuvenating its conventional industrial IT portfolio with Industry 4.0/digital manufacturing, targeting efficiencies on the shop floor, and across the supply chain, from supplier to manufacturers and to customers.

Within its range of use cases, Infosys focuses on several key offerings, often backed by an IP or an accelerator. These areas of focus include:

- Consulting services, backed by the Industry 4.0 maturity assessment methodology. Infosys is a founding member of the Acatech consortium that developed the Industry 4.0 Maturity Index
- KRTI 4.0 and AI-based on Infosys' Nia
- Robotics
- Factory simulation and advanced planning & scheduling
- Geo-localization Server.



A priority for Infosys is to be active at the pre-project phase, to influence clients and guide them through their business and technology process, through a consultative approach to clients and use cases.

To make itself further visible, in 2016 Infosys along with partners, created its Industry 4.0 maturity assessment methodology. Infosys created the methodology in cooperation with the German university of Aachen, five other universities in Germany, and six partners.

Infosys, together with Finnish infrastructure and process industry engineering firm Pöyry (now part of ÅF Pöyry), created (in 2018) KRTI 4.0. In 2019, Nokia joined the partnership.

With KRTI 4.0, the three partners aim to capture business logic that exists in manufacturing systems, examining the code of an application across objects, relationships, and attributes. The firms highlight the necessity of conducting such an assessment in the context of manufacturing systems software developers going to retirement, with clients losing visibility of the internal dynamics and business logic in their manufacturing applications.

Geo-localization Server is part of the offerings that Infosys highlights as part of its digital manufacturing portfolio. It offers geolocation services in closed environments where clients cannot use GPS for track and trace-based use cases.

Infosys has developed its Indoor Tracking System IP to localize objects or equipment indoors. The IP uses triangulation methods based on wi-fi signals, using mostly open-source software under the MIT license (a widely-used open source license). The IP also includes a mobile app for localizing equipment and parts. It has been co-developed with the University of Cyprus.

## Financials

Infosys reports its manufacturing activity to financial investors under several segments: manufacturing, high-tech, and within life science. NelsonHall estimates that approximately 28% of Infosys' revenues are derived from manufacturing clients, representing ~\$3.2bn in 2018 and ~\$3.5bn in 2019.

NelsonHall estimates that Infosys derived ~\$150m in revenues from IT industrial services in 2018. Of this amount, NelsonHall estimates that 20% of revenues is relevant to digital manufacturing services, therefore ~\$30m in 2018.

## Strengths

- Consulting: Infosys has an Industry 4.0 assessment methodology in cooperation with the University of Aachen, in Germany, that provides credibility
- Build services: Infosys has a broad portfolio and has a specific focus on several specialized offerings
- IP: Infosys has backed several of its specialized services by an IP, such as KRTI 4.0, relying on two partners: ÅF Pöyry and Nokia, and Geo-localization Server, for locating assets in closed environments, or Infosys Autonomous Golf Kart
- Benefits from having adjacent digital skills relevant to digital manufacturing, and in particular analytics and AI.



## Challenges

- Managed services: Infosys has not formalized a managed service offering in the context of OT systems and IoT. Infosys highlights it provides application management services for industrial applications including MES, SCADA and EAM applications and provides version control for manufacturing equipment and hardware such as plcs, field devices, and handheld scanners
- Onshore presence for manufacturing is limited. At a corporate level (i.e. across all IT, BPS and engineering and R&D services), Infosys is increasing its presence onshore, having focused initially on North America, and then deploying its localization program in Europe.

## Strategic Direction

Infosys' digital manufacturing services priority remains to provide a consultative-based approach to clients. Infosys will further build up its consultative approach, using its Industry 4.0 methodology and its KRTI 4.0, initially targeting German and Nordic manufacturing firms.

Along with its consultative approach, Infosys is focused on building and deepening use cases to the manufacturing sector. The company is putting most emphasis, within digital manufacturing services, on plant simulation and overall on advanced planning & scheduling.

Finally, the last priority is 5G private networks for indoor environments.

Infosys is aiming to back up its digital manufacturing priorities with IP and accelerators. An example is its Tracking System IP to localize objects or equipment indoors.

## Outlook

Infosys will manage its commercial growth, focusing on personnel hiring, investing in pre-sales capabilities that combine business and technical expertise. The company has invested in specialized offerings and we expect it to maintain its focus on these offerings. Infosys will need to add a cybersecurity offering relevant to OT systems soon to get a full design, build, and run value proposition.

## Digital Manufacturing Services Market Summary

### Buy-Side Dynamics

Clients have two distinct approaches to digital manufacturing:

- Top-down, led at the CEO or executive level – a broad approach based on the belief that investment in digital manufacturing is needed to differentiate their operations
- Bottom-up approach that looks to digital manufacturing to solve pain points in a specific plant.

These two approaches will continue to co-exist. Over time, with contracts becoming larger, executive-led agreements will become more common and outpace growth from bottom-up projects.

Key criteria for selecting a digital manufacturing services vendor are somewhat different by client segment:

- “Strategic organizations” need a partner to guide them through their journey by bringing broad capabilities from consulting to build services, including:
  - Business consulting: demonstrating their understanding of manufacturing processes, sharing experience from other industries that are advanced in the adoption of digital manufacturing (e.g. automotive), and prioritizing use cases
  - Build services: providing the full range of services, from technology selection to implementation, while having the service integration skills for managing many different technology vendors
  - Project management capabilities.
- “Operations-focused” clients need vendors to be digital manufacturing multi-specialists:
  - Specialized technical capabilities to solve the client’s specific project requirements initially for their first projects, and then for follow-up projects
  - Speak the same manufacturing language as the client.

### Market Size & Growth

The digital manufacturing services market is a niche (\$1.25bn), but high-growth market (2018-2023 CAGR of 26%), initially driven by IoT use cases relevant to digital manufacturing.

Most contracts are small, ranging from consulting to PoCs leading to relatively small systems integration and deployment contracts. Clients award these contracts as independent ones, with few clients awarding mega-deals.

Spending will reach \$4.3bn by 2023, driven by the increased number of mid-sized systems integration contracts along with continued pre-system integration activity.

The market will shift to a greater number of systems integration and deployment contracts, as clients look to progress from their PoCs. Mega-deals will remain scarce, but mid-sized deals will be more frequent, with clients structuring their spending with a few preferred partners.

## Outlook

Over the next few years, the main challenges for digital manufacturing service vendors are to:

- Accompany client spending growth through growing headcounts initially onshore for developing client intimacy, and offshore for technical tasks
- Structure their service portfolio around CoEs that will deepen their expertise around industrial IoT, simulation and digital twins, analytics, process engineering, and AR/VR. Overtime CoEs will also expand capabilities to AI, cybersecurity, managed services and security, robotics and AGVs, drones and additive manufacturing/3D printing
- Alongside developing capabilities, invest in new use cases; for example:
  - Manufacturing process improvement (based on various technologies, including digital twins)
  - Digital instructions, e.g. remote assistance and training (mostly based on AR)
  - Specialized services, e.g. MES refresh, handling and transport robotics, additive manufacturing
  - Adjacent use cases, including logistics, transport and associated robotics
- Develop accelerators that will either support use cases or accelerate technology deployment: for example:
  - Digital twins, initially for creating 3D images for data displaying and monitoring purposes
  - Other areas, digital thread.



## NEAT Methodology for Digital Manufacturing Services

NelsonHall's (vendor) Evaluation & Assessment Tool (NEAT) is a method by which strategic sourcing managers can evaluate outsourcing vendors and is part of NelsonHall's *Speed-to-Source* initiative. The NEAT tool sits at the front-end of the vendor screening process and consists of a two-axis model: assessing vendors against their 'ability to deliver immediate benefit' to buy-side organizations and their 'ability to meet client future requirements'. The latter axis is a pragmatic assessment of the vendor's ability to take clients on an innovation journey over the lifetime of their next contract.

The 'ability to deliver immediate benefit' assessment is based on the criteria shown in Exhibit 1, typically reflecting the current maturity of the vendor's offerings, delivery capability, benefits achievement on behalf of clients, and customer presence.

The 'ability to meet client future requirements' assessment is based on the criteria shown in Exhibit 2, and provides a measure of the extent to which the supplier is well-positioned to support the customer journey over the life of a contract. This includes criteria such as the level of partnership established with clients, the mechanisms in place to drive innovation, the level of investment in the service, and the financial stability of the vendor.

The vendors covered in NelsonHall NEAT projects are typically the leaders in their fields. However, within this context, the categorization of vendors within NelsonHall NEAT projects is as follows:

- **Leaders:** vendors that exhibit both a high ability relative to their peers to deliver immediate benefit and a high capability relative to their peers to meet client future requirements
- **High Achievers:** vendors that exhibit a high ability relative to their peers to deliver immediate benefit but have scope to enhance their ability to meet client future requirements
- **Innovators:** vendors that exhibit a high capability relative to their peers to meet client future requirements but have scope to enhance their ability to deliver immediate benefit
- **Major Players:** other significant vendors for this service type.

The scoring of the vendors is based on a combination of analyst assessment, principally around measurements of the ability to deliver immediate benefit; and feedback from interviewing of vendor clients, principally in support of measurements of levels of partnership and ability to meet future client requirements.

Note that, to ensure maximum value to buy-side users (typically strategic sourcing managers), vendor participation in NelsonHall NEAT evaluations is free of charge and all key vendors are invited to participate at the outset of the project.



Exhibit 1

**‘Ability to deliver immediate benefit’: Assessment criteria**

Assessment Category	Assessment Criteria
Offerings	Horizontal technology services Use case: plant monitoring Use case: predictive maintenance and asset management Use case: connected workforce Use case: production planning Use case: plant simulation Specialized services: advisory services Specialized services: security services Specialized services: managed services Specialized services: additive manufacturing Specialized services: AR/VR Specialized services: digital twins
Delivery	Number of manufacturing consultants Strength of accelerators
Presence	Globally North America CEMEA Rest of the world
Benefits Achieved	Improved asset scheduling & utilization Reduced production downtime Reduced cost of asset maintenance Improved data quality & immediacy Improved speed of new product introduction Reduced manufacturing inventory Reduced spare part inventory Increased speed-to-market for digital initiatives Increased end-user/business satisfaction/UX Pricing approach



*Exhibit 2*

**‘Ability to meet client future requirements’: Assessment criteria**

Assessment Category	Assessment Criteria
Digital Manufacturing Investment	Continued investment in IoT technologies and use cases Accelerated investment in specialized services Development of advisory services Investment in manufacturing planning and execution technologies
Market Momentum	Digital manufacturing market momentum
Ability to Deliver Improved Outcomes in Digital Manufacturing	Mechanisms in place to deliver client innovation Extent to which client perceives that innovation has been delivered Suitability of vendor to meet future needs of clients Perception of suitability to meet future needs for emerging technologies
Financial Rating	Level of financial security

For more information on other NelsonHall NEAT evaluations, please contact the NelsonHall relationship manager listed below.



[research.nelson-hall.com](https://research.nelson-hall.com)

**Sales Enquiries**

NelsonHall will be pleased to discuss how we can bring benefit to your organization. You can contact us via the following relationship manager:

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