ISG Provider Lens™

Engineering Services

Life Sciences & CPG - Manufacturing &
Plant/Process Engineering

Germany 2019

Quadrant
Report

A research report comparing provider strengths, challenges and competitive differentiators

August 2018

About this Report

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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 was current as of 30, June 2018. ISG recognizes that many mergers and acquisitions have taken place since that time but those changes are not reflected in this report.

The lead authors for this report is Rainer Suletzki.The report was edited by Heiko Henkes.

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EXECUTIVE SUMMARY

For quite some time, engineering services have been included in outsourcing and outtasking contracts; companies from technology-driven industries often leverage external suppliers that take over a significant share of the required engineering tasks. Traditionally, the focus was on constructing and designing the required components; specifically, the automotive industry uses such external services to a large extent and some of these companies have complete categories of parts such as gear units mostly developed by external providers. Similar to many other markets, the market for engineering services has been impacted by the digital transformation, which means that in the wake of technologies such as mobile connectivity, cloud data storage, IoT etc. the share of engineering services where software is key will increase significantly. To account for this trend, this study examines providers of engineering services with a focus on the digital transformation. We can distinguish the following main groups of providers:

- Companies that have been active as providers of traditional engineering services for quite some time and are advancing their portfolio to address the increasing relevance of digital components.

- Companies that have their roots in the IT services market and are leveraging these competencies to address current technological trends and provide a powerful engineering services offering.

Companies that continue to focus on traditional engineering services are not analyzed. The market for engineering services with a high share of software is relatively young; as we have observed, no classification of these services has been established yet. We have differentiated between industries and also accounted for functional differences. For the purpose of this study, our classification combines functional aspects (product engineering, process/plant engineering, software/digital & platform engineering) with industries (automotive and process industries); a more detailed description can be found under "Scope of This Study". Also, there are providers where the share of services with a focus on the digital transformation is insufficient or where it was not possible to make a reliable assessment, based on available information. Therefore, these companies were not rated, which has, of course, limited the number of analyzed providers within the individual segments.

Many of the examined providers are globally active companies with headquarters outside Germany and delivery organizations in various regions. Service providers with a focus on Germany, mostly on the automotive sector, are also engaged in global activities, but are mostly servicing locations of customers with headquarters in Germany.

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Additional relevant and differentiating aspects include the following:

- The maturity of contracting models, e.g., the share of services rendered on a time & material basis in relation to services based on an agreed outcome.

- The share of projects for specific components in relation to the development of software of general usability which has to be customized by the customers for their specific use cases.

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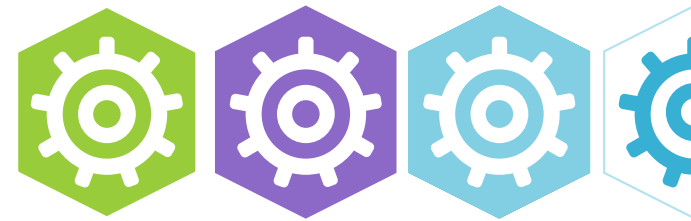
Introduction

Definition

SCOPE OF THE REPORT

For the purpose of this study, the service categories were classified in a way that combines functional aspects with industries. The following industries were selected:

1. Automotive sector
2. Process industry with a focus on chemicals and oil & gas
3. Process industry with a focus on life sciences and consumer packaged goods (CPG)

The process industry was broken down to account for the fact that the life sciences and - to a smaller extent - the CPG industry must comply with regulatory requirements that clearly differ from those of the chemicals and the oil & gas industries. Within the life sciences category, we have also included medical devices, although traditionally, they fall partly under the discrete manufacturing category. However, as a result of the digital transformation, this differentiation is often not as clear as it used to be and therefore, it makes sense to include medical devices within the context of this study. For instance, pharmaceutical companies use medical devices (e.g., injectors) for interacting directly

Simplified illustration

Engineering Services		
Automotive - Product Engineering	Chemicals and Oil & Gas - Manufacturing and Plant/Process Engineering	Life Sciences & CPG - Manufacturing & Plant/Process Engineering
Automotive - Manufacturing and Plant/Process Engineering		
Automotive - Software/Digital and Platform Engineering	Chemicals and Oil & Gas - Software/Digital and Platform Engineering	Life Sciences & CPG – Software / Digital & Platform Engineering

Source: ISG 2018

Definition (cont.)

with patients to administer medication and these devices fall under the discrete manufacturing category.

The geographical coverage of this study is Germany; considering the global activities of engineering services customers, providers' global presence also played a relevant role for the analysis.

Functionally, the following categories were analyzed:

1. Product Engineering

Product engineering services (PES) are related to the development of physical products or product sub-sections utilizing capabilities that include embedded electronics – semiconductor engineering, hardware engineering, embedded systems software, verification & validation and IoT-related services, as well as overall product and systems level engineering.

2. Manufacturing & Plant / Process Engineering

Manufacturing & plant / process engineering services are related to planning, designing, modifying, optimizing and maintaining plant or manufacturing systems and equipment – with a focus on industrial IoT / Industry 4.0 applications such as connected factories, digital asset management, predictive maintenance, 3D printing, robotics / automation etc.

3. Software / Digital & Platform Engineering

Software / digital / platform engineering services consist of application software development, independent of specific hardware. It also includes IoT software applications such as connectivity, mobility, predictive maintenance, OT data analytics (OT data refers to data pertaining to sensors, machines, location etc.), digital supply chain etc., and engineering platforms related work: such as IoT, PLM, MES etc. ERP platforms are not included in the study.

Provider Classifications

The ISG Provider Lens™ quadrants were created using an evaluation matrix containing four segments, where the providers are positioned accordingly.

Leader

The "leaders" among the vendors/ providers have a highly attractive product and service offering and a very strong market and competitive position; they fulfill all requirements for successful market cultivation. They can be regarded as opinion leaders, providing strategic impulses to the market. They also ensure innovative strength and stability.

Product Challenger

The "product challengers" offer a product and service portfolio that provides an above-average coverage of corporate requirements, but are not able to provide the same resources and strengths as the leaders regarding the individual market cultivation categories. Often, this is due to the respective vendor's size or their weak footprint within the respective target segment.

Market Challenger

"Market challengers" are also very competitive, but there is still significant portfolio potential and they clearly lag behind the "leaders". Often, the market challengers are established vendors that are somewhat slow to address new trends, due to their size and company structure, and have therefore still some potential to optimize their portfolio and increase their attractiveness.

Contender

"Contenders" are still lacking mature products and services or sufficient depth and breadth of their offering, while also showing some strengths and improvement potentials in their market cultivation efforts. These vendors are often generalists or niche players.

Provider Classifications (cont.)

Each ISG Provider Lens™ quadrant may include a service provider(s) who ISG believes has
a strong potential to move into the leader's quadrant.

Rising Star

Rising Stars are mostly product challengers with high future potential.
When receiving the "Rising Star" award, such companies have a promis-
ing portfolio, including the required roadmap and an adequate focus on
key market trends and customer requirements. Also, the "Rising Star" has
an excellent management and understanding of the local market. This
award is only given to vendors or service providers that have made ex-
treme progress towards their goals within the last 12 months and are on
a good way to reach the leader quadrant within the next 12-24 months,
due to their above-average impact and innovative strength.

Not In

This service provider or vendor was not included in this
quadrant as ISG could not obtain enough information to
position them. This omission does not imply that the
service provider or vendor does not provide this service.

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Engineering Services-Quadrant Provider Listing 1 of 2

	Automotive - Product Engineering	Automotive - Manufacturing and Plant/Process Engineering	Automotive - Software/Digital and Platform Engineering	Chemicals and Oil & Gas - Manufacturing and Plant/Process Engineering	Chemicals and Oil & Gas - Software/Digital and Platform Engineering	Lifesciences & CPG - Manufacturing and Plant/Process Engineering	Lifesciences & CPG - Software/Digital and Platform Engineering
Akka Technologies	Contender	Product Challenger	Not In	Product Challenger	Not In	Product Challenger	Not In
Alten	Product Challenger	Not In	Not In	Not In	Not In	Product Challenger	Not In
Altran	Leader	Leader	Leader	Leader	Leader	Rising Star	Rising Star
Atos	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Product Challenger	Leader	Leader
Bertrandt	Market Challenger	Not In	Market Challenger	Not In	Not In	Not In	Not In
Capgemini	Rising Star	Not In	Product Challenger	Not In	Not In	Market Challenger	Leader
Cognizant	Product Challenger	Not In	Product Challenger	Contender	Not In	Leader	Leader
EDAG	Contender	Contender	Not In	Not In	Not In	Not In	Not In
EPAM	Not In	Not In	Product Challenger	Contender	Product Challenger	Contender	Contender
HCL	Leader	Market Challenger	Leader	Not In	Contender	Not In	Product Challenger

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Engineering Services-Quadrant Provider Listing 2 of 2

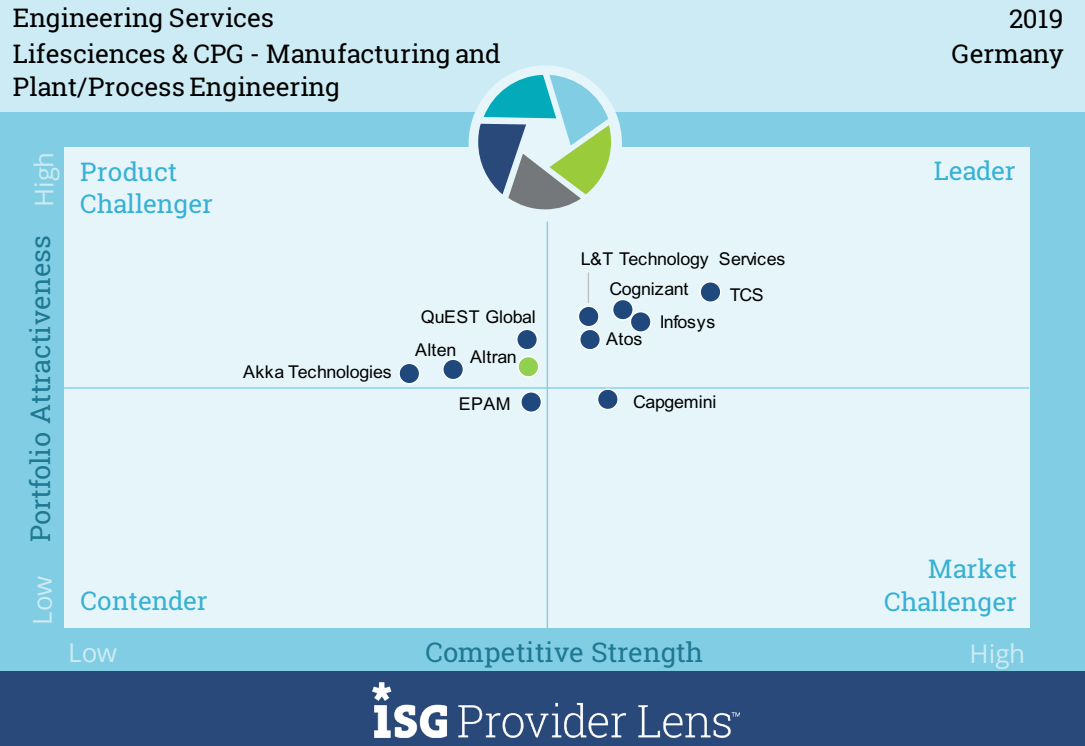|	Automotive - Product Engineering	Automotive - Manufacturing and Plant/Process Engineering	Automotive - Software/Digital and Platform Engineering	Chemicals and Oil & Gas - Manufacturing and Plant/Process Engineering	Chemicals and Oil & Gas - Software/Digital and Platform Engineering	Lifesciences & CPG - Manufacturing and Plant/Process Engineering	Lifesciences & CPG - Software/Digital and Platform Engineering
Infosys	● Leader	● Leader	● Leader	● Leader	● Leader	● Leader	● Leader
Innominds	● Not In	● Not In	● Contender	● Not In	● Contender	● Not In	● Contender
in-tech	● Not In	● Not In	● Contender	● Not In	● Not In	● Not In	● Not In
ITK Engineering	● Not In	● Not In	● Contender	● Not In	● Not In	● Not In	● Not In
KPIT	● Product Challenger	● Contender	● Product Challenger	● Not In	● Product Challenger	● Not In	● Product Challenger
L&T Technology Services	● Leader	● Leader	● Leader	● Leader	● Leader	● Leader	● Product Challenger
QuEST Global	● Product Challenger	● Product Challenger	● Leader	● Leader	● Product Challenger	● Product Challenger	● Contender
TCS	● Leader	● Leader	● Leader	● Leader	● Leader	● Leader	● Leader
Tech Mahindra	● Product Challenger	● Contender	● Product Challenger	● Not In	● Not In	● Not In	● Not In
Wipro	● Leader	● Market Challenger	● Leader	● Not In	● Not In	● Not In	● Not In

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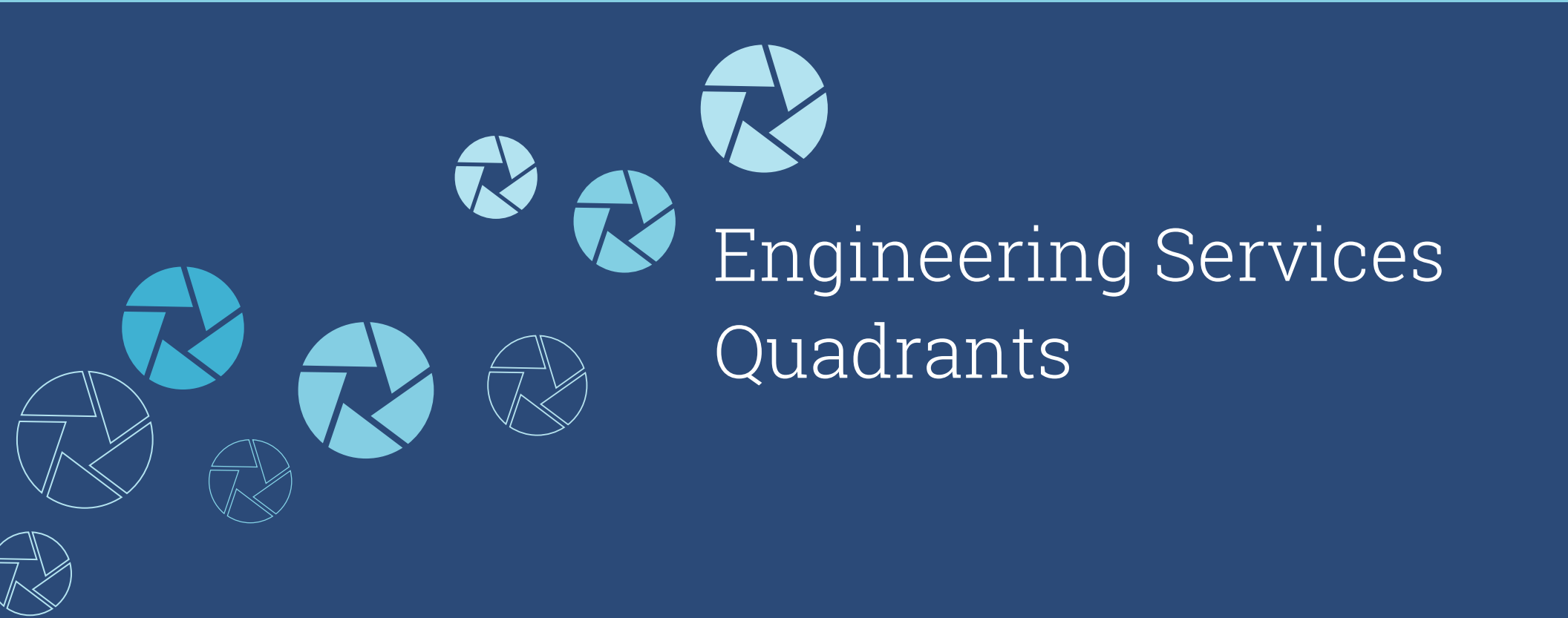
Engineering Services Quadrants

LIFE SCIENCES & CPG - MANUFACTURING & PLANT/PROCESS ENGINEERING

Definition

ES in the process industry is helping the next wave of leaders in this industry to increase their engineering quality and performance while optimizing costs and meeting stringent compliance, safety and security standards. At the same time, implement tailored Industry 4.0, IoT and analytics services and solutions to transform data into new revenue streams and boost performance, while ensuring cybersecurity. ES providers are partnering with process industry manufacturers to achieve the above. Furthermore, in life sciences & CPG the regulatory aspects are important, specifically the GMP (good manufacturing practice) requirements in pharmaceutical production.

Manufacturing and plant / process engineering services consists of planning, designing, modifying, optimizing and maintaining plant or manufacturing systems and equipment - with a focus on industrial IoT / Industry 4.0 applications such as connected factories, digital asset management, predictive maintenance, 3D printing, robotics / automation etc.

Engineering Services
Lifesciences & CPG - Manufacturing and Plant/Process Engineering

2019
Germany

Product Challenger

Leader

L&T Technology Services
Cognizant
TCS
QuEST Global
Infosys
Atos
Alten Altran
Akka Technologies
EPAM Capgemini

Portfolio Attractiveness — High / Low
Competitive Strength — Low / High

Contender

Market Challenger

Source: ISG Research 2018

LIFE SCIENCES & CPG - MANUFACTURING & PLANT/PROCESS ENGINEERING

Observations

- Regulatory requirements within this segment, often referred to as GxP requirements (e.g., GMP – good manufacturing practice), are a key differentiator for providers' positioning.

- Similar to the situation in the chemicals industry, the portfolio is sometimes characterized by a high share of plant management solutions, such as manufacturing execution systems. However, connectivity & cloud as key drivers of the digital transformation also have an impact on this industry, and solutions are evolving beyond such use cases, for instance, by connecting the MES with solutions for simulating facilities and plants or suitable mobile devices for the staff within a plant. Automation is another key driver for engineering services to achieve a highly reliable production.
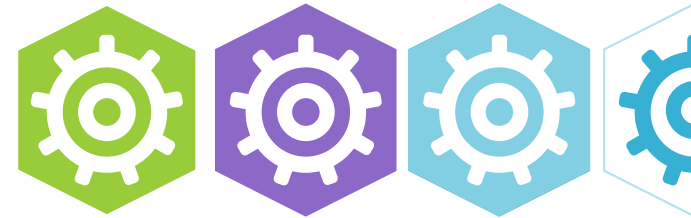
ATOS

Overview

Atos is a global IT service provider who has continually advanced and enhanced their portfolio to also include engineering services as an integral part of their offering, with a clear strategic focus on digital transformation aspects.

Caution

The share of managed projects, i.e., the take-over of joint responsibility, together with the customer, should be enhanced.

Strengths

Based on their long-standing IT service provider experience in the life sciences industry, Atos is able to enhance their engineering services continuously, positioning themselves as a competent partner in the manufacturing & plant/process engineering segment.

Within the manufacturing segment, Atos provides convincing solutions for integrating the ERP backbone with manufacturing execution systems (MES), product life cycle management (PLM) and related mobile applications, where needed.

Many services are available as prepackaged solution to ensure fast implementation.

Atos has delivery centers in all relevant regions; within the context of this study with a focus on Germany, special mention must be made of the center in Germany with its significant size and capability.

With their Codex platform Atos provides a complete set of products and functions for designing, implementing and operating digital business models that are also used within manufacturing environments.

Atos has a broad customer base and many use cases, also in Germany.

2019 ISG Provider Lens™ Leader

Based on their comprehensive capabilities that cover all relevant technologies, Atos provides a powerful manufacturing & plant process engineering portfolio for the life sciences industry.

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COGNIZANT

Overview

Cognizant is a global provider who has advanced their traditional IT services portfolio to include the cross-industry digital transformation of their customers' core business processes. A specific focus is on the life sciences industry, also in Germany.

Strengths

Cognizant has comprehensive, long-standing experiences in the segment for manufacturing & plant/process engineering for the life sciences industry, i.e., within GxP-regulated environments.

Cognizant has very extensive competencies with relevant technologies, from integration of the production control level with enterprise systems to extensive manufacturing support (manufacturing execution, automation etc.) to the integration of measurement & control technology. Solutions for simulating production environments (digital twin) are also included in the offering.

Cognizant provides a standard platform with extensive functionality to design, implement and operate connected factories, which is highly relevant for the digital transformation.

Cognizant operates delivery centers in all relevant regions and has a comprehensive network of partnerships with technology companies, universities and research institutions, which indicates great innovative strength.

The share of managed projects, i.e., the take-over of joint responsibility, together with the customer, is relatively high within this industry.

Cognizant has a very broad customer base as well as many references and use cases.

Caution

The provider should have a stronger focus on existing advanced analytics solutions, especially, the big data topic. Aggregating information in dashboards, based on analysis data, is highly important, specifically for production control purposes.

2019 ISG Provider Lens™ Leader

Within GxP-regulated environments, Cognizant is a competent and very experienced partner for the manufacturing and plant/process engineering segment within the life sciences industry.

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INFOSYS

Overview

Infosys is a global provider whose portfolio comprises traditional IT services as well as digital transformation services across industries to address customers' core business processes, with a specific focus on agile implementation. The engineering services examined within this study are one of several focus areas within the Infosys portfolio.

Strengths

Infosys has great manufacturing & plant/process engineering competence within the life sciences and CPG industries, specifically to address GxP requirements.

As one of only few providers, Infosys has a broad customer base and respective comprehensive experience in this segment.

The portfolio includes shop-floor integration solutions that provide good coverage of digital transformation (IoT, Industry 4.0) aspects. Dashboards for KPI monitoring within the digital factory are also available, as are EH&S (environment, health & safety) solutions, which are highly relevant within GxP-regulated environments.

The share of managed projects, where Infosys takes over development responsibility, is rather high.

Infosys also provides innovative solutions with cloud-based data storage and respective mobile connectivity.

Caution

The provider should better address big data aspects within this context.

The provider should strengthen their position in Germany (through delivery centers, reference projects etc.).

2019 ISG Provider Lens™ Leader

Infosys covers GxP-relevant aspects and has already demonstrated their high manufacturing & plant/ process engineering competence for the life sciences industry in many customers projects.

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L&T TECHNOLOGY SERVICES

Overview

L&T Technology Services is a global IT service provider with a specific focus on engineering and research & development. Services include product development, product life cycle management, engineering analytics, machine-to-machine connectivity and IoT.

The company has presences in all relevant regions and enjoys a strong position in Germany.

Strengths

Based on their strong position in the traditional engineering services segment L&T Technology Services is able to also provision the required digital transformation capabilities and to cover respective GxP requirements.

L&T Technology Services provides a very comprehensive and diverse portfolio of manufacturing & plant/process engineering functionality for the life sciences industry. The offering covers traditional engineering services such as mechanical engineering as well as new digitization-related areas such as digital design & implementation and digital asset management.

The share of managed projects, where the provider takes over responsibility for IT platform development, is very high, compared to other providers.

L&T Technology Services provides comprehensive coverage of GxP requirements in all relevant services, including complex areas such as automation and plant maintenance.

L&T Technology Services has a broad customer base as well as many references and use cases in this segment.

Similar to product life cycle management in the product engineering segment L&T Technology Services offers an integrated plant life cycle management for this segment which also covers relevant predictive maintenance functionality for production facilities, which is a key component of the extended supply chain, up to the end consumer.

The portfolio also includes solutions based on mobile devices.

Caution

The provider should better address big data aspects within the advanced analytics context.

2019 ISG Provider Lens™ Leader

In GxP-regulated environments L&T Technology Services is a competent manufacturing & plant/process management partner.

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TCS

Overview

The TCS portfolio provides a very comprehensive coverage of industries and a very broad function-ality of services. The provider covers traditional IT services as well as current trends and the digital transformation, also within the engineering services context which are analyzed within this study. The company has delivery centers in all important regions, including Germany.

Caution

The provider could better address big data aspects, specifically within this context.

Strengths

TCS has many years of experience in the manufacturing & plant/process engineering segment for the life sciences and CPG industries and is able to cover the relevant GxP aspects.

Current trends such as IoT and mobile connectivity are already integrated in many of these solutions, and thus, TCS is well prepared to address the digital transformation in this segment and can be recommend as a capable partner accordingly.

TCS is able to combine multiple technologies such as cloud data management, mobile connectivity and sensor technology into integrated solutions, which goes beyond pure software development and implementation, which positions TCS as a capable and powerful solution provider.

TCS can rely on a comprehensive global network of partners, including research institutions and innovation labs that are specifically relevant for this industry.

TCS also has great supply chain optimization competence.

The provider's digital transformation activities provide comprehensive coverage of cybersecurity issues.

2019 ISG Provider Lens™ Leader

TCS is a highly competent provider of manufacturing & plant/process engineering solutions, specifically for GxP-regulated environments.

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RISING STAR: ALTRAN

Overview

Altran provides a comprehensive portfolio with a clear focus on engineering and R&D. The regional focus is on Europe and North America. The services are available for a broad scope of industries.

The company pursues a clear strategy to implement trends within the digital transformation and, thus, has a strong position in the segments that are part of this study.

Strengths

In the segment manufacturing & plant/process engineering for the life sciences industry Altran provides a broad and diversified portfolio that includes consulting as well as configurable solutions. Strengths include the provider's long-standing experience in regulatory environments (GMP) as well as innovations that demonstrate Altran's digital transformation competence.

Altran's portfolio comprises a multitude of engineering services for designing and optimizing production processes, both in pharmaceutical production (active ingredients and formulation) and in medical device production. The focus is always on relevant regulatory requirements to ensure their certification, where Altran also provides comprehensive support (e.g., FDA certification).

Altran can use a dedicated World Class Center specifically for process engineering in regulated environments that addresses production aspects as well laboratory environments. One example for resulting innovations is the Connected Operator, work clothes for production staff that collect data on work conditions and other health-related parameters for analytics purposes, based on suitable sensor technology.

Altran has many reference projects, including projects in Germany.

Altran has the relevant industry-specific certifications.

Caution

The provider could enhance their presence in Germany; delivery is partly done through resources in neighboring countries.

The share of T&M-based services should be reduced further.

2019 ISG Provider Lens™ Rising Star

Altran is a highly powerful engineering services provider for production in regulated environments (GxP) and offers a broad and diversified portfolio. The company has long-standing experience, including required certification of the implemented solutions.

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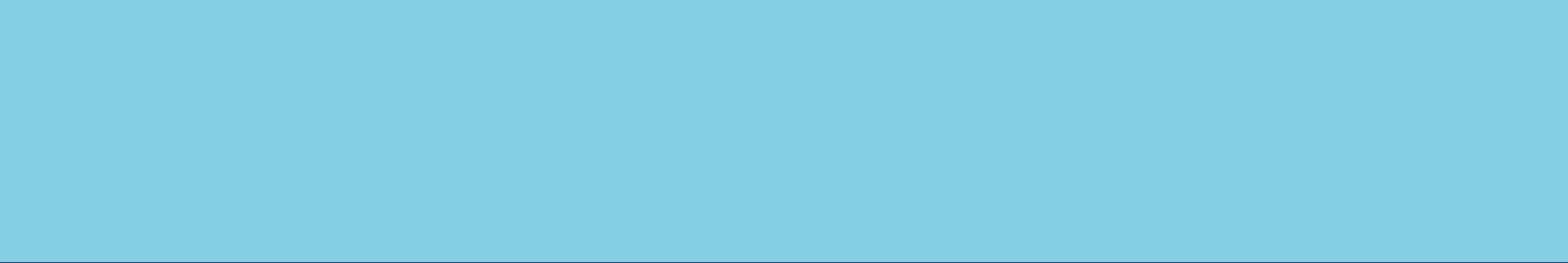
Methodology

METHODOLOGY

The ISG Provider Lens™ 2018 – Engineering Services research study analyses the relevant software vendors and service providers in the German market, based on a multi-phased research and analysis process, and positions these providers based on the ISG Research methodology.

The study was divided into the following steps:

1. Definition of Engineering Services market

2. Use of questionnaire-based surveys of service providers/vendor across all trend topics

3. Interactive discussions with service providers/vendors on capabilities & use cases

4. Leverage ISG's internal databases & advisor knowledge & experience (wherever applicable)

5. Detailed analysis & evaluation of services & service documentation based on the facts & figures received from providers & other sources.

6. Use of the following key evaluation criteria:
    − Strategy & vision
    − Innovation
    − Brand awareness and presence in the market
    − Sales and partner landscape
    − Breadth and depth of portfolio of services offered
    − Technology advancements
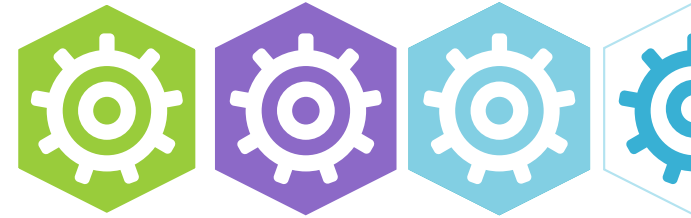
Authors and Editors

Rainer Suletzki, Author
Senior IT Management Advisor, Germany

Mr. Suletzki relies on a deep understanding of core business processes and in-depth know-how of IT management. He has more than 30 years of experience as Senior IT Manager, Senior Project Manager and – at the beginning of his career – as IT consultant. His main areas of expertise comprise IT application management, IT architecture, data modelling as well as IT sourcing strategy and execution

Rainer acts as independent consultant with a focus upon application management for SAP and specifically for SAP HANA. On behalf of ISG he conducts studies within the framework of ISG Provider Lens and takes on client projects with definition of IT strategy and the resulting sourcing decisions.

Before becoming an independent consultant, Rainer worked more than 30 years for a global German Life Science corporation.

Rainer holds graduate degrees in Economics and Computer Sciences.

Authors and Editors

Heiko Henkes, Editor

Director Advisor, ISG Research Lead

Mr. Henkes is a Director Advisor at ISG; in this role, he is responsible for strategic business management and acts as leader of ISG's team of research advisors. He is also in charge of bringing together IT trend topics within the digital transformation context and acts as keynote speaker on current and future IT trends.

Since 2013, Heiko has advised both ICT providers and users on current digital transformation topics such as Cloud Computing, Artificial Intelligence and the Mobile Enterprise.

In his work with IT Providers, he has a focus on go-to-market strategies and strategic portfolio development as well as on the strategic marketing and sales development. Heiko also analyzes and evaluates business processes, product-specific target markets and IT provider through classical competitive analyses. Within this context, Heiko supports companies to undergo continuous transformation, combining IT competencies with sustainable business strategies and change management.

His primarily focus lies on business development activities, further development and internationalization of the ISG Provider Lens™ (IPL) product-related processes beside his role as IPL Topic Leader to guide and sync all analyst team members.

Before joining ISG (Experton Group), Heiko worked as analyst manager for TechConsult GmbH.

Heiko holds a degree in economics with a major business informatics and marketing of the University of Kassel and is fluent in English.

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August 2018

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