Digital Factory

teknowlogy | PAC

itelligence AG

**itelligence AG
Königsbreede 1
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itelligence — NTT DATA Business Solutions

teknowlogy's highlights

- Very strong background in SAP-based solutions and own SAP add-ons, with a number of highly relevant digital factory use cases.
- Strong manufacturing domain and process know-how, with a focus on midsize champions and large organizations.
- Strong use cases with project references particularly in location tracking and tracing as well as vertical integration from shop floor to top floor, which are key use cases in the digital factory.
- Strong capabilities and know-how in asset management and predictive maintenance, which are key portfolio elements of data-driven business models and processes in manufacturing ecosystems.
- Member of the Open Industry 4.0 Alliance, which is among the key initiatives in Germany driving collaboration in manufacturing operation ecosystems.

Short vendor description

- Founded in Bielefeld in 1989, the company has since grown into a full SAP service provider, mainly addressing the needs of upper and mid-market companies. Numerous SAP Pinnacle and Innovation Awards underline this.

- In 2007, itelligence merged with NTT DATA, which provided itelligence with a large amount of additional resources and the opportunity to operate on a global scale.

- itelligence focuses strongly on SAP-related services, with C&SI services accounting for a large share. In our view, itelligence is among the providers with the most complete portfolio of services on the basis of SAP technology.

- Today, itelligence has about 9,500 employees worldwide, generating total revenues of €1,038 million.

Key facts:

Web:
www.itelligencegroup.com

Employees in Germany:
3,400

Share of IT services revenues from manufacturing customers in Germany*:
60% - 70%

Offices in Germany:

- Aachen
- Bautzen
- Berlin
- Bielefeld
- Dortmund
- Dresden
- Göttingen
- Hamburg
- Heidelberg
- Jena
- Köln
- München
- Oldenburg
- Pforzheim
- Stuttgart

* PAC estimate

Advanced supplier insights

Automation and optimization of procurement processes is addressed through the use of machine learning and data mining techniques. Predictive models are leveraged to predict scenarios that impact procurement processes and to act upon issues in the procurement processes early on. Regarding the purchasing platform SAP Ariba, itelligence has a strategic partnership with apsolut GmbH.

Networked production monitoring

Solutions are built on the SAP Leonardo IoT portfolio as well as on the Microsoft Azure IoT solution portfolio.

Flexible process control in production

Advanced planning solutions are, for example, built on SAP Integrated Business Planner and Advanced Planning Optimizer. They are enriched with live machine data, which enables sophisticated planning and fast reactions to unforeseen events.

Predictive analytics/ predictive maintenance

Solutions include the utilization of platforms for the collaborative management of assets, e.g. SAP Asset Intelligence Network (SAP AIN).

Data-driven services

Data from connected assets is captured using sensors and IoT technologies; machine learning techniques are applied in a way that allows the optimization of operations and maintenance procedures for production assets.

Asset location monitoring

itelligence focuses on creating a global "Smart Logistics" portfolio that covers indoor and outdoor asset traceability in a holistic framework. This includes:

Inventory tracking

- Tracking and tracing to optimize production control; this is being addressed by leveraging RFID and ultra-wideband (UWB) for localization of assets.
- Material flow monitoring with UWB for indoor asset tracking and Bosch outdoor asset tracking with Trusted GPS Tracker.

Traceability

Services include device onboarding, development of dashboards for asset tracking (e.g. for logistics managers), as well as the development of solutions for parcel/asset condition monitoring and location-based tracking.

Connected worker

Connected worker business cases are, for example, based on Microsoft's HoloLens, and project references exist for use cases in field service and maintenance, mobile data capturing, assembly support, and warehouse picking.

teknowlogy | PAC considers itelligence AG as a relevant player in the following use case clusters. In these clusters, itelligence AG has proven to be able to cover all relevant use cases:

Asset performance management	✓
On-site asset/plant monitoring	✓
Networked production monitoring	✓

Predictive shop-floor analytics	✓
Predictive shop-floor maintenance	✓

Visual quality inspection	✓
Predictive quality control	✓
Automatic quality control	✓

Warehouse picking	✓
Safety and security	✓
Assembly support	✓
Mobile data capturing	✓
Maintenance support	✓

Asset location monitoring	✓
Inventory tracking	✓

XERVON Instandhaltung GmbH (industrial maintenance provider):

itelligence utilizes techniques from the fields of data mining, machine learning (ML), IoT, and artificial intelligence in order to enable its customer XERVON to operate cooling towers continuously and efficiently. IoT sensors are used to collect data such as water pressure, temperature, and vibrations caused by the cooling equipment. In addition, external factors such as outside temperature and humidity are taken into account. All this data is automatically transferred and analyzed in detail using ML. This allows predictions about performance and necessary maintenance tasks, and considerably reduces energy consumption.

Scheidt & Bachmann GmbH (signaling technology, fare collection systems, parking solutions):

Together with Scheidt & Bachmann, itelligence has developed a real-time locating solution that uses sensors and gateways to track the current location of goods and which automatically registers movements in the SAP chain. This is achieved with the itelligence Logistic Bridge solution, which connects technology and platform providers for gateways and tags with SAP Leonardo and SAP ERP to integrate technologies and processes. The benefits include real-time inventory transparency (both inside and outside the company), automated inventory posting through sensor-based location changes, effort reduction, and product and logistics security.

itelligence AG:
Selected partnerships

- **SAP**:
  itelligence is a SAP Platinum Partner and, from our point of view, is among the providers with the most complete portfolio of SAP-based services, including SAP C&SI, SAP hosting, and SAP managed services.

- **Microsoft**:
  For networked production monitoring use cases, itelligence partners with Microsoft, among others, leveraging its Azure IoT solution stack.

- In the field of **edge gateways**, itelligence collaborates with hardware providers such as HARTING.

- In the field of **location tracking**, itelligence collaborates with providers such as Bosch (GPS), Ubisense (UWB device tracking), HARTING (RFID), and Scheidt & Bachmann (indoor tracking).

itelligence offers a number of own SAP add-ons which are relevant for digital factory use cases. Selected SAP add-ons which are leveraged to implement digital factory use cases are:

- **Advanced supplier insights**: BI.Booster Procurement
- **Connected worker**: it.mobile maintenance and it.mobile service; it.mobile InfoCollector and itelligence AddOn 3D Visual Assembly
- **Production planning**: it.configure, it.x-connectIoT
- **Asset location monitoring**: itelligence AddOn Location-based Processing (RTLS)
- **Basics**: it.mds, it.x-press

teknowlogy's assessment

✚ Strengths

- Strong focus on innovation in the area of Industry 4.0 and IoT initiatives, with the goal to optimize processes and business models by combining both deep industry process and technology know-how.

- Besides providing solution implementation, itelligence also provides strategic consulting, such as roadmaps and strategies for digital transformation, which is a key demand from many manufacturers in Germany today.

- Strong capabilities and know-how in plant maintenance and customer service based on data-driven business models and processes in manufacturing ecosystems.

- Very strong performance in use cases related to asset tracking and localization, with a number of project references in indoor and outdoor tracking.

- Strong performance in use cases related to manufacturing planning and operations (particularly in the vertical integration from shop floor to top floor).

- As SAP plays a major role among German manufacturing customers on an enterprise application level, itelligence is very well positioned to implement and integrate digital factory use cases into existing SAP landscapes, utilizing SAP's portfolio for digital factory use cases, but also its own SAP add-ons.

- Close collaboration with RWTH Aachen University and the 'it's OWL' cluster, both of which are key players in driving Industry 4.0 initiatives.

- Member of the Open Industry 4.0 Alliance, which is driven by SAP and is among the key initiatives in Germany driving collaboration in manufacturing operations ecosystems.

> **itelligence is very well positioned as a relevant player in the digital factory space, thanks to its strong manufacturing operations know-how, its strong SAP capabilities, incl. own SAP add-ons, as well as its strong analytics and ML/AI capabilities, which have become increasingly important in a digital factory.**
>
> **Klaus Holzhauser, SVP Digital Innovation & IoT, teknowlogy | PAC**

itelligence AG:
Digital factory use cases overview

Digital Factory Use Cases	Capabilities
Advanced supplier insights	✓
Virtual commissioning	-
Flexible process control	✓
Demand-driven real-time production scheduling	✓
Asset performance management	✓
Automated replenishment	✓
On-site asset/plant monitoring	✓
Networked production monitoring	✓
Warehouse picking	✓
Safety and security	✓
Assembly support	✓
Mobile data capturing	✓
Visual quality inspection	✓
Predictive quality control	✓
Automatic quality control	✓
Energy optimization	✓
Automated energy optimization	✓
Digital production twin	✓
Next-generation factory automation	✓
Additive manufacturing	-
Material optimization	-
Factory safety and security	-
Predictive shop-floor analytics	✓
Predictive shop-floor maintenance	✓
Robotics and cobots	-
Smart intra-logistics vehicles	-
Autonomous transportation systems	-
Autonomous data-capturing devices	✓
Asset location monitoring	✓
Inventory tracking	✓
Maintenance support	✓
Data-driven business models	✓
Smart training	✓
Smart yard management	✓
Fleet and route optimization	✓
Transit tracking and tracing	✓

Sourcing

Production planning

Production

Service and support

Logistics

About teknowlogy Group

teknowlogy Group is the leading independent European research and consulting firm in the fields of digital transformation, software, and IT services. It brings together the expertise of two research and advisory firms, each with a strong history and local presence in the fragmented markets of Europe: CXP and PAC (Pierre Audoin Consultants).

We are a content-based company with strong consulting DNA. We are the preferred partner for European user companies to define IT strategy, govern teams and projects, and de-risk technology choices that drive successful business transformation.

We have a second-to-none understanding of market trends and IT users' expectations. We help software vendors and IT services companies better shape, execute and promote their own strategy in coherence with market needs and in anticipation of tomorrow's expectations.

Capitalizing on more than 40 years of experience, we are active worldwide with a network of 150 experts.

For more information, please visit www.teknowlogy.com and www.sitsi.com, and follow us on Twitter or LinkedIn.