

Software and Digitalization



Added Value by Software

23rd Edition



Added Value by Software



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The digital transformation starts with corporate management



Sebastian Betzin

When I went out for a walk recently, I noticed two elderly gentlemen coming towards me. Slowly strolling along, I heard them talking about online meetings – which operating system worked well and which browser was better. Yes, digitalization has caught up with us. Inevitably. Just a few years ago, who could have imagined how digitalized our work would be today? Please don't get me wrong: I am not saying that everything is better digitally. Nevertheless, digitalization does offer immense advantages, as we no longer have to travel hundreds of kilometres for every meeting.

But is that all there is to "digitalization"? I do not think so. As long as I am still surrounded by scanned and printed documents in my professional and private life, this can only be the beginning. As long as my money transfer doesn't reach the recipient in three seconds, there is still a need for action. And our customers? Don't they also have similar expectations?

Let's be honest: Which customer is still willing to place an order in paper form today and wait weeks for delivery, all because of several ERP systems and several manual processes that run in the background via Excel? Efficiency and productivity are the biggest drivers of digitalization

processes. This requires a healthy and efficient IT landscape. However, for far too long, IT was only seen as an accessory. The result is visible in IT-related debt, which can turn a digital transformation into a truly mammoth task.

Simultaneously though, digitalisation generates new products, new processes and new business models. And it presents us with entirely new challenges in both culture and collaboration. Digital transformation is more than just the sum of IT systems. It also involves a change in values and ways of thinking.

To master these challenges, we need clear visions. Sound strategies. And a leadership that is open to new technologies and processes. Digital transformation starts at the executive level.

Let us courageously set off on new "digital" paths. "Made in Germany" must not become "Late in Germany".

Yours sincerely,

Sebastian Betzin

Deputy Chairman of VDMA Software and Digitalization
Board member and CTO of generic.de software technologies AG

Latest technologies for the engineering sector

Prof. Claus Oetter, Managing Director VDMA Software and Digitalization



Source: Shutterstock

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The industry podcast of the VDMA



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VDMA Software and Digitalization represents successful software manufacturers and the development departments of renowned engineering firms on the market. Our association has more than 500 members. VDMA Software and Digitalization thus offers a wealth of know-how that it puts to profitable use for all other VDMA member companies.

VDMA Software and Digitalization aims to bring the engineering sector together with software and digitalization. Various topics in this brochure are covered by VDMA Software and Digitalization. The association's experts also support VDMA members with current trend topics together with fundamental aspects of modern software technology. When it comes to the digital transformation of processes, products and organisations, VDMA Software and Digitalization supports all VDMA members with a broad range of publications, events, trade-fair activities, studies and working groups. During the Corona Pandemic, VDMA Software and Digitalization offers all events digitally.

Pooling the engineering sector's IT and software know-how

We have been the centre of excellence for all IT and digitalization topics in the VDMA. Our activities form a cross-association platform for sharing information and experience in the whole mechanical and plant industry. Joint projects emerge in cooperation with other organization units of the VDMA.

We keep VDMA members supplied with the right information based on the concentrated know-how of more than 500 member companies and the accumulated experience of the association's experts. We give advice when selecting IT solutions, arrange contacts with providers or experienced users for bilateral sharing, offer support with a wealth of experience in change management and related processes or methods and provide individually compiled key IT figures from our sector related benchmarks and studies.

We turn information into production factors

Digitalization today is relevant for all parts of a company. We offer efficient support for all VDMA members during the processes, with the right strategy, the best method or process design and suitable software tools. Use this brochure to find out about the range of topics covered by VDMA Software and Digitalization.

Three years ago the „Industry Podcast of the VDMA“ has been included in our portfolio. The podcast looks at various software and digitalization topics which are relevant to the engineering sector. The topics highlight the chances and risks for engineering firms and indicate the challenges facing the sector. To this end, we talk with experts from VDMA member companies. They provide insights based on practical use cases with the new technologies, highlighting the opportunities open to providers and users when it comes to implementing software technologies.

More information about VDMA Software and Digitalization:
vdma.org/software-digitalization
and in our app.



Carbon neutrality in industrial companies requires digitalization

Michael Finkler, Managing Director at proALPHA Business Solutions GmbH and chairman at VDMA Software and Digitalization



Michael Finkler

Source: proALPHA Business Solutions GmbH

1. Mr. Finkler, how can production become more digital and sustainable at the same time?

Digitalization and carbon neutrality don't contradict each other. Sustainable carbon management even requires an extensive digitalization, including AI. This means, ERP, MES, TMS and other corporate applications are at the center of this development. As the single source of truth, the ERP system is the central success factor for determining the carbon footprint and introducing counter-measures.

2. Can you give us an example?

With the deep integration of a carbon management software like Planetly, you can follow through with a plan for carbon neutrality. Based on the data from ERP, MES and TMS (transport management systems), such software provides extensive initial analyses of the carbon emissions. Reductions in all relevant areas can be achieved on the basis of the ERP system. This includes materials planning, sales planning, product development, supply chain management, and production planning. Companies can reduce resource consumption in various fields: procurement processes, consumption of energy

and paper, and business trips. Moreover, surplus production is avoided as sales and material planning are improved.

3. But what if all potential has already been exploited here?

Manufacturing companies can then improve their carbon footprint through compensations. This can be achieved with the help of partners, for example with local or international projects for the purpose of afforestation, humus replenishment and the generation of humus certificates, or the renaturation of moors. Other options include a contribution to the reduction of plastic waste and the pollution of the oceans.

4. But aren't you supposed to do good and then talk about it?

Absolutely! Carbon footprints can be communicated on the basis of international standards. Products can be rated in terms of carbon neutrality. By monitoring all processes, you can reduce the impact on the environment. Thus, continued carbon management becomes an integral part of all ERP, MES and TMS systems.

5. Is there anything companies should keep in mind?

Carbon management must be embedded in the whole corporate organization. There are four steps to a successful implementation: understand, reduce, compensate, and communicate the carbon footprint. As the central data and process hub, the ERP system lays the groundwork for all analyses and measures to achieve an integral carbon management and eventually become carbon neutral.

How configuration has become a competitive advantage

Holger Senn, Configit GmbH

The first industrial revolution brought the design and manufacturing of products at scale, creating opportunities to increase customer specific options offered. As time progressed customers began demanding ever increasing choices, it became apparent that more sophisticated systems were needed to keep track of part numbers, materials or suppliers.

In the 1980s, systems were introduced to help manage this complexity. Enterprise Resource Planning (ERP), Customer Relationship Management (CRM), Product Lifecycle Management (PLM) and Configure Price Quote (CPQ) systems became the norm for large manufacturing corporations. The unintended result was the creation of monolithic data silos that prevented true collaboration and innovation across the enterprise. So how do you manage, control, and

optimize the billions of product choices and features without combining these data silos along the entire value chain?

New Configuration Technology

The first configuration technologies developed in the 1980s were adequate to solve relatively basic problems but were difficult to maintain. Maintenance was costly and often left these configuration engines prone to errors.

In the late 1990s, the compilation-based approach called Virtual Tabulation® was introduced, which not only provides a more powerful engine, but an entirely new way of managing most complex configuration data. The compilation-based approach extracts product configuration data from each of the existing IT core systems, calculates all valid combinations before run-time, and sends the resulting data back into the relevant systems as a compact, easily accessible file. With this 'Single Source of Configuration Truth', each discipline can quickly validate whether the selected configurations comply with the rules and specifications, and it can be ensured that product variants offered by Sales can actually be manufactured as well.

Digital Transformation and CLM

Today's compilation technology has benefits that expand far beyond previous configuration technologies. By shifting the organizational focus to product variants and configuration data, companies get a deeper understanding of their products, from how they're designed, and what materials are used, to where they're sold and how they are used in the field along the product lifecycle.

This 'digital thread' is the true backbone of digital transformation based on validated data from connected systems in a Configuration Lifecycle Management (CLM). When companies work collaboratively across systems and functions, they innovate faster, optimize product portfolios and sell more with better margins.



After the purchase is before the purchase – Integrated digital service management

André Hörnlein, eEvolution GmbH & Co. KG

The products of machinery and plant manufacturers are characterized by a particularly long life cycle. In order to establish lasting customer loyalty to one's own brand and products, a convincing performance in service management and aftersales business is also necessary.

Everyday service is often still characterized by traditional analogue instruments such as pinboards and carbon copies or semi-digitalized processes with stand-alone solutions involving Word, Outlook and Excel. When mobile devices are used, they are often not connected to a service management system and maintenance updates are reported via SMS.

Companies that understand the strategic, but also valuecreating potential of aftersales service rely on integrated service management solutions within an ERP system. With a holistic digital solution, they reduce their dependence on new customer business and increase their competitiveness.

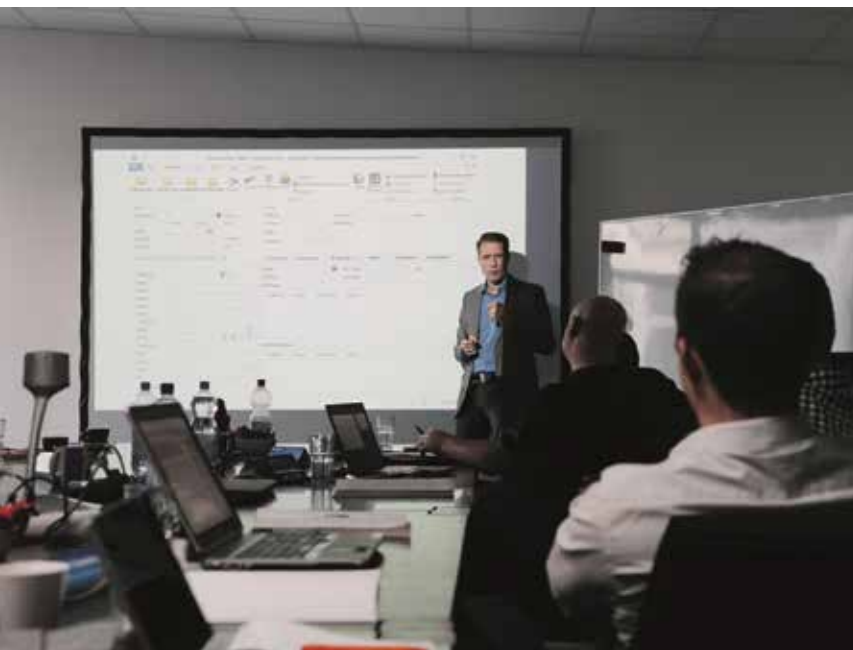
In fact, over the last few years, an increase in after sales service offerings can be seen among capital goods manufacturers. This is accompanied by a growing need for professionalization and service engineering. With an ERP-integrated service management solution, assets, service contracts, warranties, invoices and much more can be managed smoothly with digital workflows. This puts an end to inconsistent data stocks.

A service management solution ensures complete documentation of the asset or machine history starting from its delivery via the serial number. Ideally, this is coupled with a comprehensive contract management system that records the essential contractual conditions and reminds the user of deadlines or maintenance schedules. Integrated service management is ideally suited to centrally plan and control all field service operations.

Smart mobile solutions allow technicians to access all necessary data on the go. Mission data can be recorded on site and transferred to the office or workshop in real time. The completion of checklists, photo documentation and digital service reports are initiated promptly on site. With the help of knowledge databases, extensive search and evaluation options and the documentation of errors, proven solutions can be recorded and made usable for any future processing of similar cases.

With an integrated service management solution, customer service can be made more efficient and thus more cost-saving. Last but not least, customer satisfaction increases and ensures long-term and sustainable customer loyalty.

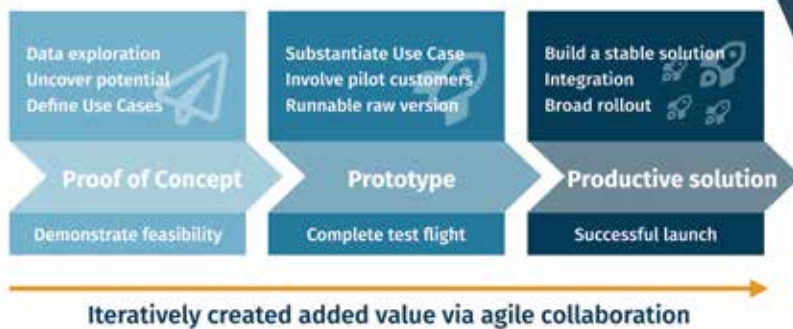
Source: eEvolution GmbH & Co. KG



Hello data craftsmanship – Goodbye AI hype

Sonja Kruse, Point 8 GmbH

Agile roadmap



Source: Point 8 GmbH

“Which added value does this offer me and how do I get there?” is a fair question that comes to mind when decision-makers in mechanical and plant engineering are confronted with data-driven projects. The following are two specific examples from customers of data science service provider Point 8.

Windmüller und Hölscher (W&H) is a supplier of machines for manufacturing and processing flexible packaging and offers a platform for data-driven added value with its own IoT system RUBY. In the field of film extrusion – a complex process with countless parameters and influences – the cooperation between W&H and Point 8 resulted in an **adaptive assistance system** for plant operators for quality assurance and reject reduction. Based on a **smart product recognition**, which automatically learns to identify products from the data while taking recipe tolerances into account, it allows for the efficient and product-specific setting of process parameters.

The close exchange between the experts from mechanical engineering, process engineering, software development and data science as well as the agile-iterative approach were decisive for success, in order to quickly investigate feasibility and continuously adapt to new findings. Thus, a productive solution with added customer value was speedily and goal-orientedly developed.

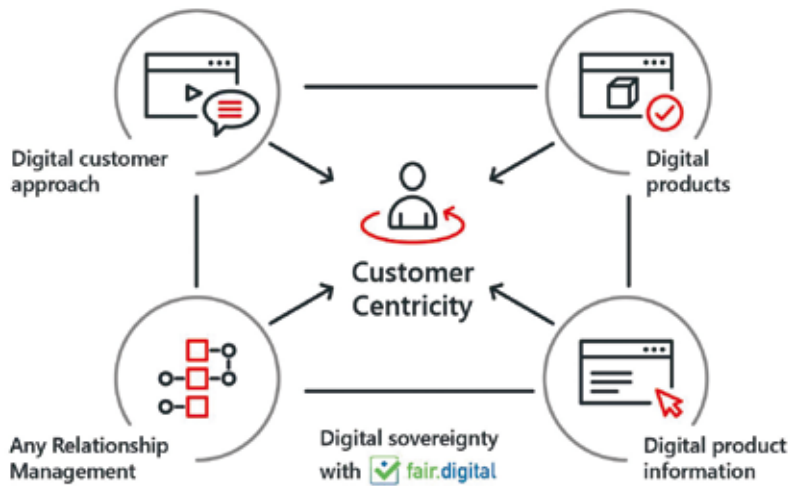
For ABEL, a manufacturer of special pumps for mining, wastewater and industry, the close partnership with the data science service provider was also essential. Within the framework of the cooperation, among other things, a roadmap was jointly drawn up, prototypes were developed, validated and expanded with targeted tests on test stands, and finally a **productive solution** was created.

As an intermediate goal on the way to **predictive maintenance**, an intelligent and scalable **anomaly detection** and **efficiency monitoring system** was created. Using physical-technical parameters and AI methods, the condition of the pumps is monitored live and operators receive automated reports on unusual occurrences. The system enables remote service to be carried out, which makes costly on-site visits by the company service staff unnecessary.

Both examples show the value of close collaboration between domain experts and data scientists on equal footing. Together, prototypes can be created quickly as “lighthouses” with tangible added value, which in turn can be quickly and purposefully transferred into a customer-oriented productive solution.

4 trends in digital sales and marketing

Dr. Thomas Genßler, CAS Software AG



Source: CAS Software AG

Any Relationship Management

Modern XRM systems integrate company-wide information about customers and other market participants in order to identify sales potential or avert risks. Often additional information from external sources such as the cloud are also used, for instance industry data, company changes, news (such as major deals and orders or a change in creditworthiness). Digital assistants support salespeople in keeping an eye on important information. A key success factor is the alignment of all company processes to long-term customer success („customer centricity“). Used correctly, XRM helps to bind customers emotionally and to identify their needs at an early stage.

Digital customer approach

Digital customer contact ranges from the use of social media or digital tools in the sales process to customer portals. This creates new touch-points through which customers can quickly and comprehensively find out about the company and its offerings. This saves time and, if used correctly, increases reach. Digital communication

helps to reduce set-up times for face-to-face appointments, increase efficiency and thus save costs. Customer portals allow customers to be digitally involved in business processes. This ranges from self-maintenance of data, quoting or ticketing systems to open-innovation.

Digital product information

Selling products that require extensive explanation requires highly qualified sales staff. The lack of qualified personnel quickly becomes a limiting factor. At the same time, it is difficult to make complex product features tangible and understandable for the customer. Digital product models („digital twins“) make products virtually tangible. Product configurators accelerate the quotation process to the point where customers can configure their desired product themselves in the customer portal.

Digitalized products

Shifting product features to software creates the basis for completely new business models. The product variance can be flexibly increased with software options in order to respond to individual requirements, even in the „long tail“. The product itself becomes a sales channel through which customers can retrofit new software-based features. At the same time, digitalized products can simplify new business models (pay-per-use, rental) and make maintenance scenarios more efficient.

Digital sovereignty as a prerequisite for sustainable success

When digitalizing corporate processes, the focus is on sustainably maintaining digital sovereignty. In addition to data protection and data security, this includes avoiding extreme dependencies and lock-in scenarios. Self-owned platforms such as open source solutions or cooperative approaches offer attractive alternatives here. Initiatives such as the German society of fair.digital¹ help to find suitable solution providers.

How digital services will result in new business opportunities for machine builders

Marius Weckes, IXON B.V.

Digital value-added services will become enormously important for machine builders in the near future. It is expected that in five years, 20% of sales will already be generated from these digital services alone. But how do you get started?

Connecting machines for the purpose of remote maintenance is now widespread – but many machine builders do not go beyond that. However, connectivity is only the first step towards generating added value by means of IIoT. Two new revenue opportunities are explained below.

Monitoring wear and tear parts

When machines suddenly and unexpectedly stop, it becomes expensive. Monetarily in the short run, but in the long run it has a negative impact on the customer experience and your reputation. Condition-based maintenance could solve this problem. Especially with wear parts, one thing is certain: sooner or later, they will need to be replaced. So, keep control of the parts in your machine and act before it comes to a breakdown.

But, it doesn't even have to come to a stop to serve its economic purpose. Let's take a concrete example from the packaging industry: In the operation of the flow pack machine, the blades dull after a while, which leads to the fact that films are no longer separated properly. As a result, more products become waste and the machine is less productive.

Data-driven analyses can help to determine when the optimal time to replace wearing parts has been reached. For a service fee, customers can then be informed and parts will be proactively replaced, resulting in happier customers and recurring revenue.

Service model for consumables

An additional service for consumables, which can, for instance, be used in the printing or packaging industry, goes one step further. Here, too, the basis is real-time monitoring of machine data.

Offer your customers a new service by supplying your own consumables (optimized for your machines). Keep an eye on machine efficiency and deliver new materials before stocks are used up.

In this way, you take the burden off your customers, as they no longer need large inventories and don't have to worry about stock. Besides the additional revenue from consumables, you can also introduce this just-in-time delivery service as a new business model.



Source: IXON B.V.

Reliable timeliness with AI – Assistance in production planning

Stipo Nad, INFORM GmbH

Communicating delivery dates externally is a great responsibility. Once evaluated, the date must be reliable for the customer, for the sake of a good relationship. A well-known problem, especially in the area of machinery and plant engineering. This is where decision-intelligent algorithms promise a remedy.

The reasons for difficulties with timeliness in the industry vary: incomprehensible lists of missing parts or the current market challenges for raw materials and purchasing parts, for instance. Most of the time, the unrealistic planning of common ERP systems against unlimited capacities lowers the adherence to schedule – an all too familiar problem for KSB SE & Co. KGaA, one of the worldwide leading manufacturers for industrial valves and pumps. In 2018, a very successful business year for KSB, the production planning had reached its limits. The order situation in the summer of 2018 was huge, which resulted in major backlogs due to the planning against unlimited capacities.

Within the scope of a company-wide digitalization project, with the goal of a worldwide smart factory, the production site Frankenthal near Mannheim was an ideal candidate for a pilot project. Every day, the site produces around

300 pumps according to customer requests. The individual and unique products require precise cross-departmental planning of material availability, production, and assembly steps. In the beginning of 2021, the manufacturer for industrial valves and pumps started using the mathematical planning and optimization algorithms of the APS system FELIOS for their production and shift planning. That way, the company receives daily updated plans, based on real capacities. The biggest benefit, though, is the consistent transparency of all orders, parts and even requirements that are planned ahead. Stock lists can now be analyzed in terms of whether there may be a shortage of a specific part and how to solve it. The system detects these disturbances by itself automatically and gives an early warning.

Thanks to the algorithms, the pump manufacturer can simulate different scenarios. In the case of an incoming rush order, it used to be difficult to find out which other orders would be delayed by the occupancy. This can now easily be tracked and responded to. Especially in assembly planning, the company is very satisfied with the optimized plans. Today, the pump manufacturer always knows when to start which order for it to be delivered on time.

Source: KSB SE & Co. KGaA



Software Defined Manufacturing for the production of tomorrow

Wolfram Schäfer, iT Engineering Software Innovations GmbH



Source: iT Engineering Software Innovations GmbH

The importance and appreciation of software has been increasing in mechanical engineering for years. The concept of Software Defined Manufacturing now raises the importance of software to a new level: Software takes over the central and controlling role of the processes as well as their optimization. In this sense, Software Defined Manufacturing revolutionizes traditional production processes and provides a high degree of flexibility in manufacturing.

Solution for the problems in traditional manufacturing processes

Processes used in traditional production plants are usually rigid and inflexible. The hardware used is highly complex. These factors increase required manual intervention and inhibit productivity. In addition, innovations are hindered by long development cycles and the potential for data-based optimization is wasted. This is precisely where Software Defined Manufacturing comes in.

Modular machines and intelligent software

The concept of Software Defined Manufacturing focuses on consistent modularization of both hardware and software components. It is important that a machine is optimally designed and equipped mechanically, electrically and in terms of control technology for a particular machining process. The application of tools should also be variable, and tool changes should be automated. The modern machine is also open to other instances and integrates itself into the overall system by means of defined interfaces.

This makes it possible for functionalities and logic to be detached from the machine control system and then be used as far up the hierarchy as possible in the form of an intelligent control system. By using them in a cloud, it becomes possible for these encapsulated software modules to be accessed as needed, by whichever machine. By bringing the information together centrally in the form of a „digital twin“, this software layer can plan, control and optimize all physical processing steps.

Numerous advantages through maximum flexibility

Software Defined Manufacturing opens up the possibility for industrial production to make the most of the potential of a flexible and agile factory. When implemented consistently, this approach enables rapid reaction and adaptability to changing conditions. Also, machines and production equipment based on the concept of modularization can be used sustainably and reused for different process flows. Last but not least, increases in productivity can be achieved and development times shortened. All these factors support the development of new product strategies and business models and promote innovative capability.

Machine learning – learning from experience



Guido Reimann

The engineering sector is increasingly interested in artificial intelligence in general and machine learning in particular, now that a number of fundamental technical framework conditions are being fulfilled. The corresponding foundation has been laid by increasing digitalization in the companies, the countless sensors that are fitted in machines, intensive connectivity of machinery, plants and IT systems, the use of cloud-based solutions, the ever increasing possibilities for saving, processing and analyzing data and the existing range of corresponding IT tools.

Machine learning lets technical systems learn from experience, something that only natural beings were capable of in the past. Established IT tools help analyze machine and process data, recognize patterns and structures and thus find corresponding algorithms. New frameworks and platforms support the broad application of these topics in everyday project work. The technology offers many new, exciting approaches particularly for the engineering sector with benefits for the process as well as for the products.

Current VDMA surveys reveal that current use and development activities focus on the processes involved in design and development, in customer support and production, while attention on the product side is on condition monitoring and remote service. More than one third of companies interviewed in the survey had already implemented corresponding projects or were still in the process of doing so.

Given the broad range of possible uses, nearly two thirds of interviewed companies were of the opinion that AI-based products or services will have a medium to very strong influence on the current business model.

Machine learning ensures that software components are increasingly the key innovation driver for the engineering sector.

Artificial Intelligence Competence Network

In 2019, the VDMA founded the Artificial Intelligence Competence Network, with the aim of pooling all the association's corresponding activities. The prime objective consists particularly in setting up corresponding information structures in the branch and accelerating the transfer of knowledge between engineering and research, as well as demonstrating the many possible uses and potential for new business models.

Within the Artificial Intelligence Competence Network in the VDMA which also includes the expert group "Machine Learning" of the VDMA Software and Digitalization, VDMA members and other partners contribute their expertise to demonstrate the profitable use of AI to the mechanical engineering industry. In addition to building up information and exchanging experiences, the focus is also on transferring knowledge about methods, possible applications and research approaches. VDMA members receive additional support in the form of guidelines, decision-making aids and studies to help them take the first steps in implementing a machine learning solution.

For more information please visit: ki.vdma.org

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eoda	www.eoda.de	SALT Solutions	www.salt-solutions.de
esentri	www.esentri.com	SAP Deutschland	www.sap.com/germany
evon	www.evon-automation.com	SERVITIZE	www.servitize.de
Fischer Information Technology	www.fischer-information.com	Solutiness	www.tele-look.com
GAL Digital	www.gal-digital.de	Sybit	www.sybit.de
GODYO Business Solutions	www.godyo.com	USU Software	www.usu.com
Google Germany	www.google.de	XITASO	www.xitaso.com
IBM Deutschland	www.ibm.de	Zühlke Engineering	www.zuehlke.com

Solutions Purchasing / Supply Chain Management / Logistics

alltrotec	www.alltrotec.de	GODYO Business Solutions	www.godyo.com
Asseco Solutions	www.assecosolutions.com	Google Germany	www.google.de
bridgefield	www.bridgefield.de	INFORM	www.felios.de
CaderaDesign	www.caderadesign.de	innoSEP	www.innosep.de/de
CIPA	www.openpack.net	Körber	www.koerber.com
Configit	www.configit.com	logicline	www.logicline.de
Configura	www.configura.com	Microsoft Deutschland	www.microsoft.com
COSMO CONSULT AG	www.cosmoconsult.com	PSI Software	www.psi.de
Dassault Systemes Deutschland	www.3ds.com	PSI Technics	www.psi-technics.com
DataArt	www.dataart.com/de	SAP Deutschland	www.sap.com/germany
datura manufacturing	www.swissdynamics.net	SPARETECH	www.sparetech.io
eoda	www.eoda.de	USU Software	www.usu.com
esentri	www.esentri.com	XITASO	www.xitaso.com
EURO-LOG	www.eurolog.com	Zühlke Engineering	www.zuehlke.com
generic.de software technologies	www.generic.de		

Solutions for further Fields of Application

abilis	www.abilis.de	Dassault Systemes Deutschland	www.3ds.com
ADVES	www.adves.one	DataArt	www.dataart.com/de
All for One Group	www.all-for-one.com	DataVision	www.datavision.software
Asseco Solutions	www.assecosolutions.com	eoda	www.eoda.de
audius	www.audius.de	EPLAN	www.eplan.de
BEUMER Maschinenfabrik	www.beumergroup.com	esentri	www.esentri.com
bridgefield	www.bridgefield.de	Fischer Information Technology	www.fischer-information.com
CaderaDesign	www.caderadesign.de	generic.de software technologies	www.generic.de
Centigrade	www.centigrade.de	GFOs	www.gfos.com
CIPA	www.openpack.net	GFT Technologies	www.gft.com/de/de/index
ClassiX Software	www.classix.de	GODYO Business Solutions	www.godyo.com
Configit	www.configit.com	Google Germany	www.google.de
COSMO CONSULT GmbH	www.cosmoconsult.com	IBM Deutschland	www.ibm.de
COSMO CONSULT AG	www.cosmoconsult.com	ICONICS Germany	www.iconics.com
daenet	www.daenet.de	incontext.technology	www.incontext.technology

Solutions for further Fields of Application

INFORM	www.felios.de	Rockwell Automation Solutions	www.rockwellautomation.com
innoSEP	www.innosep.de/de	Rockwell Automation	www.rockwellautomation.com
Jungheinrich	www.jungheinrich.de	SALT Solutions	www.salt-solutions.de
Kinexon Industries	www.kinexon-industries.com	SAP Deutschland	www.sap.com/germany
KOCH Pac-Systeme	www.koch-pac-systeme.com	SERVITIZE	www.servitize.de
konzeptpark	www.konzeptpark.de	Siemens Industry Software	www.sw.siemens.com
Körber	www.koerber.com	SMS group	www.sms-group.com/expertise/digitalization
logicline	www.logicline.de	Software Factory	www.sf.com
macio	www.macio.de	Solutiness	www.tele-look.com
MAG IAS	www.ffg-ea.com	SQL Projekt	www.sql-ag.de
Markt-Pilot	www.markt-pilot.de	Synostik	www.synostik.de
micropsi industries	www.micropsi-industries.com	talpasolutions	www.talpasolutions.com
Microsoft Deutschland	www.microsoft.com	TEDATA	www.tedata.de
Mobile Function	www.mobile-function.com	The MathWorks	www.mathworks.com
MODUS Consult	www.modusconsult.de	USU Software	www.usu.com
mpunkt	www.mpunkt.com	J.M. Voith/VPH	www.voithpaper.com
Odego	www.odego.de	WITTENSTEIN	www.wittenstein.de
PIKON Deutschland	www.pikon.com	XITASO	www.xitaso.com
Point 8	www.point-8.de	Zühlke Engineering	www.zuehlke.com
PSI Software	www.psi.de		
PSI Technics	www.psi-technics.com		

Product independent Consulting

ADVES	www.adves.one	Körber	www.koerber.com
bridgefield	www.bridgefield.de	logicline	www.logicline.de
CaderaDesign	www.caderadesign.de	M&M Software	www.mm-software.com
Centigrade	www.centigrade.de	macio	www.macio.de
COSMO CONSULT GmbH	www.cosmoconsult.com	MAG IAS	www.ffg-ea.com
daenet	www.daenet.de	Magic Software Enterprises	www.magicsoftware.com
DataArt	www.dataart.com/de	Odego	www.odego.de
DataVision	www.datavision.software	ORBIS	www.orbis.de
elunic	www.elunic.com/de	PIKON Deutschland	www.pikon.com
:em engineering methods	www.em.ag	Point 8	www.point-8.de
Empolis Information Management	www.service.express	PSI Technics	www.psi-technics.com
encoway	www.encoway.de	q.beyond	www.qbeyond.de
eoda	www.eoda.de	SALT Solutions	www.salt-solutions.de
EPLAN	www.eplan.de	SMS group	www.sms-group.com/expertise/digitalization
esentri	www.esentri.com	Software Factory	www.sf.com
generic.de software technologies	www.generic.de	Synostik	www.synostik.de
GFOS	www.gfos.com	syscon	www.syscon-online.com
GFT Technologies	www.gft.com/de/de/index	talpasolutions	www.talpasolutions.com
HEGLA-HANIC	www.hegla-hanic.de	TEDATA	www.tedata.de
HEITEC	www.heitec.de	UNITY	www.unity.de
IBM Deutschland	www.ibm.de	USU Software	www.usu.com
incontext.technology	www.incontext.technology	valantic Supply Chain Excellence	www.valantic.com
INFORM	www.felios.de	XITASO	www.xitaso.com
IT Engineering Software Innovations	www.ite-si.de		
konzeptpark	www.konzeptpark.de		

Platform economy – digital and customer oriented



Christoph Herr

Platform economy refers to digital market access via the internet, with an additional channel for matching products and services to the customers. While the medium addressing the customer changes, the basic market mechanisms remain in force and in some cases are reinforced.

This refers particularly to the market presence itself, where success depends on focused customer orientation and a strict market economy approach. The following rules need to be heeded:

- The market offering must be geared solely to the needs of the customers. It takes an attractive range of products and services to acquire customers and ensure their loyalty to a platform, offering swift sustainable added value for the customer. So rather than asking “which attributes could my product have”, the question must be “which attributes that my product has could be useful and attractive for my customers”.
- Platform access must be as easy as possible for the customer. The platform presence therefore needs a professional design which is best achieved with the help of external experts. The range on offer should be coordinated in such a way as to provide the customer with swift, initial and sustainable added value consisting of free or low-cost elements; it attracts customers and ensures their loyalty. This initial portfolio then acts as the basis for higher quality elements that the customer is willing to pay for due to his positive experience with the platform.

- Another important fundamental aspect is to come across as being open and in line with the market. Here it is the customer view that counts. The customer will not be inclined to waste time on a whole number of different platforms in order to meet his daily requirements. Instead, he will use the service that best reflects his needs and requirements. In many cases, end users frequently don't have a single brand range of machinery but take what they need from various different manufacturers. In this context, the presence of an industry platform is expedient.
- The issue of security naturally plays a great role when it comes to platforms. A platform presence can always be designed to be secure in line with the current state of the art. The platform operators offer security packages with varying attributes.

In this context, VDMA also supports the activities of the International Data Space Association (IDSA) and GAIA-X, which accord an internationally accepted status to the European concept of data security, data sovereignty and data integrity.

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IoT-Plattformen

IoT Infrastructure Provider / Middleware

247FactoryNet	www.247factorynet.com	KOCH Pac-Systeme	www.koch-pac-systeme.com
3DQR	www.3dqr.de	konzeptpark	www.konzeptpark.de
A+W Software	www.a-w.de	logi.cals	www.logicals.com
ads-tec Industrial IT	www.ads-tec.de	logi.cals automation solutions & services	www.logicals.com
AIT-Applied Information Technologies	www.aitgmbh.de	logicline	www.logicline.de
All for One Group	www.all-for-one.com	macio	www.macio.de
alltrotec	www.alltrotec.de	Microsoft Deutschland	www.microsoft.com
ams.Solution	www.ams-erp.com	MODUS Consult	www.modusconsult.de
Bosch Rexroth	www.boschrexroth.com/de/de	NIVUS	www.nivus.de
COMAN Software	www.coman-software.com	Odego	www.odego.de
compacer	www.compacer.com	Peakboard	www.peakboard.com
Configit	www.configit.com	POWERCASE FORMULA CRM	www.formulacrm.de
COSMO CONSULT GmbH	www.cosmoconsult.com	q.beyond	www.qbeyond.de
COSMO CONSULT AG	www.cosmoconsult.com	relayr	www.relayr.io/de
DataVision	www.datavision.software	Rockwell Automation Solutions	www.rockwellautomation.com
DKE Data	www.my-agrirouter.com	Rockwell Automation	www.rockwellautomation.com
e-GITS	www.e-gits.com	Sandvik Tooling Deutschland	www.sandvik.coromant.com/en-gb/products/coroplus-processcontrol/pages/default.aspx
ECOS Technology	www.ecos.de		
elunic	www.elunic.com/de	SAP Deutschland	www.sap.com/germany
eoda	www.eoda.de	Schneider Electric	www.schneider-electric.de
evon	www.evon-automation.com	SERVITIZE	www.servitize.de
FORCAM	www.forcam.com	SMS group	www.sms-group.com/expertise/digitalization
generic.de software technologies	www.generic.de		
GETT Gerätetechnik	www.gett.de	SQL Projekt	www.sql-ag.de
GFT Technologies	www.gft.com/de/de/index	symmedia	www.symmedia.de
Google Germany	www.google.de	Synostik	www.synostik.de
Grenzebach Digital	www.grenzebach.digital	talpasolutions	www.talpasolutions.com
HighConsulting	www.crsbm.biz	Thyssenkrupp Materials IoT	www.thyssenkrupp-materials-iot.com
IBM Deutschland	www.ibm.de		
IBODigital	www.ibodigital.com		
incowia	www.incowia.com		
INDUTRAX	www.indutrax.net		
INNEO Solutions	www.inneo.com		
iT Engineering Software Innovations	www.ite-si.de		
IXON	www.ixon.cloud		
Janz Tec	www.janztec.com		
Kinexon Industries	www.kinexon-industries.com		

IoT Platform Provider

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ADAMOS	www.adamos.com	DataVision	www.datavision.software
ads-tec Industrial IT	www.ads-tec.de	datura manufacturing	www.swissdynamics.net
AIT-Applied Information Technologies	www.aitgmbh.de	elunic	www.elunic.com/de
alltrotec	www.alltrotec.de	Empolis Information Management	www.service.express
audius	www.audius.de	eoda	www.eoda.de
avenit	www.avenit.de	EURO-LOG	www.eurolog.com
Beckhoff Automation	www.beckhoff.com	evon	www.evon-automation.com
Bosch Rexroth	www.boschrexroth.com/de/de	Findustrial	www.findustrial.io
bridgefield	www.bridgefield.de	Fischer Information Technology	www.fischer-information.com
CaderaDesign	www.caderadesign.de	FORCAM	www.forcam.com
CIPA	www.openpack.net	gbo datacomp	www.gbo-datacomp.de
ClassiX Software	www.classix.de	generic.de software technologies	www.generic.de
COMAN Software	www.coman-software.com	GFT Technologies	www.gft.com/de/de/index
compacer	www.compacer.com	Google Germany	www.google.de
COSMO CONSULT	www.cosmoconsult.com	Grenzebach Digital	www.grenzebach.digital
COSMO CONSULT	www.cosmoconsult.com	HALO-electronic	www.inteos.com
daenet	www.daenet.de	HEGLA-HANIC	www.hegla-hanic.de
Dassault Systemes Deutschland	www.3ds.com	HighConsulting	www.crsrm.biz

IoT Platform Provider

IBM Deutschland	www.ibm.de	PSI Technics	www.psi-technics.com
ICONICS Germany	www.iconics.com	q.beyond	www.qbeyond.de
Industrie Informatik	www.industrieinformatik.com	Reichhardt	www.reichhardt.com
INDUTRAX	www.indutrax.net	relayr	www.relayr.io/de
INNEO Solutions	www.inneo.com	Remberg	www.remberg.de
IT Engineering Software Innovations	www.ite-si.de	Rockwell Automation Solutions	www.rockwellautomation.com
IXON	www.ixon.cloud	Rockwell Automation	www.rockwellautomation.com
Janz Tec	www.janztec.com	SALT Solutions	www.salt-solutions.de
Kinexon Industries	www.kinexon-industries.com	Sandvik Tooling Deutschland	www.sandvik.coromant.com/en-gb/products/coroplus-processcontrol/pages/default.aspx
konzeptpark	www.konzeptpark.de		
KRONES	www.krones.com	SAP Deutschland	www.sap.com/germany
KUMAVISION	www.kumavision.com	Schneider Electric	www.schneider-electric.de
logicline	www.logicline.de	SEEBURGER	www.seeburger.de
M&M Software	www.mm-software.com	SERVITIZE	www.servitize.de
Magic Software Enterprises	www.magicsoftware.com	Siemens Industry Software	www.sw.siemens.com
Membrain	www.membrain-it.com	SMS group	www.sms-group.com/expertise/digitalization
Microsoft Deutschland	www.microsoft.com	Software Factory	www.sf.com
Mobile Function	www.mobile-function.com	Sybit	www.sybit.de
MODUS Consult	www.modusconsult.de	Synostik	www.synostik.de
MPDV Mikrolab	www.mpdv.com/de	talpasolutions	www.talpasolutions.com
N+P Informationssysteme	www.nupis.de	Transaction-Network	www.transaction-network.com
neogramm	www.neogramm.de	USU Software	www.usu.com
NewTec	www.newtec.de	Voith	www.voith.com
NIVUS	www.nivus.de	J.M. Voith/DSG Division Digital Ventures	www.voith.com
Odego	www.odego.de	J.M. Voith/VPH	www.voithpaper.com
oneIdentity+	www.one-identity-plus.com	XITASO	www.xitaso.com
POWERCASE FORMULA CRM	www.formulacrm.de		
PSI Software	www.psi.de		

Agile software development



Florian Klein

Agility is based on working in short intervals, taking into account different group dynamic processes and thriving from the support of specialist, non-technical stakeholders. The goal of agile software development is to make the software development process leaner and more flexible than in conventional models. Agile software development is a counter movement to conventional software development, which is often regarded as heavyweight and bureaucratic. In essence, agile product development is all about feedback processes and cyclical, iterative procedures on all levels, in programming, in the team and with the management. Agility is worthwhile if a project is subject to many planning-relevant changes during its lifecycle.

Cohesion in the development team

Modern software development is a remarkably dynamic process based on human interaction. Being a service provider in software development means carrying out a project with a team at the customer's site. The team takes centre stage in agile product development, with a focus on close, interdisciplinary collaboration. Agile methods support sharing, there is no top-down hierarchy and the collaboration of all employees is expressly desired. This helps bind the team even closer together.

Competitive advantage and quality

The most important elements for the customer, i.e. the elements which achieve the highest business value, are always completed first. This allows large parts of the new software to be implemented in a productive manner long before the whole project is completed. This cyclical approach allows individual measurements to be implemented for the respective project, enabling each member of the development team to learn directly from their experiences and thus ensuring a realistic idea of the actual development speed.

Intensive communication with the customer: flexibility and shorter development times

Agile development processes are characterized by close and constant communication with the customer. This direct communication not only helps developers to better understand what software the users actually require, but the users will be more understanding should an estimation by the developers need to be corrected.

The VDMA "Agile Software Development and Agile Project Management" expert group focuses on collecting and evaluating experiences and best practices, and making them applicable for the engineering industry. The expert group's main focus is on management tasks.

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Smart devices and mobile apps



Florian Klein

Innovations in the information technology sector that crop up at ever shorter intervals prompt new developments in engineering that have a huge impact on products, production and the companies themselves. This trend is not new. Technology carriers, such as smart devices or wearables, are making their way from the consumer market to the industrial sector.

Analyzing the mobility potential

Many companies are faced with the question of which tasks and people within the company can be supported by mobile apps. Mobility serves to optimize business processes. The tasks can influence the company goals in many different ways. For example, the maintenance of a machine can be shortened, a wider range of employees can be involved in tasks, and tasks which were previously only carried out manually can be automated. Many companies already have numerous ideas for corresponding supporting tasks. However, these tasks should be systematically analyzed in order to make a sensible decision as to which apps should be developed.

Intuitive use

App technologies are focused on creating a positive user experience which results from the actual and expected use of an interactive system or service. Apps should therefore be intuitive, fun and easy to use in a way that motivates the user. The positive effects are obvious: fewer operating errors, quicker reactions thanks to clear information, as well as less downtime in production.

Pooling expert knowledge

Without the help of expert knowledge, it is virtually impossible to design interfaces with considerably higher user experience, even when using the most cutting-edge smart devices. The collaboration of many different experts is therefore essential in order to develop technically clean software that appeals to customers.

Particularly in the case of mobile apps and smart devices, companies need to muster courage to challenge established processes and to embrace new business models that will enable them to discover the real treasure hidden in these new technologies. VDMA Software and Digitalization offers a number of aids with a checklist for new business models with smart devices and mobile apps and provides its members with a network platform to facilitate sharing across the industry.

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Usability and user experience in the engineering industry



Florian Klein

Technology can be both easy and fun to use. This applies not just to devices on the consumer sector such as smartphones, tablets or smart watches etc. but also for industry. Many engineering companies have realized that functionality is not everything. The functionality actually has to reach the users.

Manufacturers are therefore increasingly focusing on “usability”. This refers to the goal of making the operation of interactive products intuitive and easy to understand and thus more efficient. And now producers are taking things to the next level: even the human machine interface (HMI) is supposed to be fun, motivate users and make them feel good. This is what is called user experience, which describes the positive experience that a user has when using the product.

VDMA Software and Digitalization supports its members with experts from amongst their own ranks when it comes to designing HMIs according to the state of the art. This includes services such as information events, conferences and seminars.

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Software Development (Consulting & individual Development)

Requirements Engineering

A+W Software	www.a-w.de	iT Engineering Software Innovations	www.ite-si.de
abilis	www.abilis.de	IT Vision Technology	www.itvt.de
accelcon industrial engineering	www.accelcon.de	ITQ	www.itq.de
AIT-Applied Information Technologies	www.aitgmbh.de	Janz Tec	www.janztec.com
All for One Group	www.all-for-one.com	Jungheinrich	www.jungheinrich.de
Asseco Solutions	www.assecosolutions.com	konzeptpark	www.konzeptpark.de
audius	www.audius.de	Körber	www.koerber.com
Balluff	www.balluff.com	KRONES	www.krones.com
BCT Technology	www.bct-technology.com	Lino	www.lino.de
BEUMER Maschinenfabrik	www.beumergroup.com	logi.cals	www.logicals.com
bridgefield	www.bridgefield.de	logi.cals automation solutions & services	www.logicals.com
CaderaDesign	www.caderadesign.de	logicline	www.logicline.de
CATUNO	www.catuno.de	M&M Software	www.mm-software.com
CE-CON	www.ce-con.de	macio	www.macio.de
Centigrade	www.centigrade.de	Microsoft Deutschland	www.microsoft.com
ClassiX Software	www.classix.de	Mobile Function	www.mobile-function.com
Configit	www.configit.com	MODUS Consult	www.modusconsult.de
Configura	www.configura.com	N+P Informationssysteme	www.nupis.de
CONTACT Software	www.contact.de	NewTec	www.newtec.de
COSMO CONSULT GmbH	www.cosmoconsult.com	Odego	www.odego.de
COSMO CONSULT AG	www.cosmoconsult.com	Opdenhoff Technologie	www.opdenhoff.com
Dassault Systemes Deutschland	www.3ds.com	ORISA Software	www.orisa.de
DataArt	www.dataart.com/de	PIKON Deutschland	www.pikon.com
DataVision	www.datavision.software	PLANWARE Beratung & Software	www.planware.de
Dürr Aktiengesellschaft	www.durr.com	Positive Geeks	www.positivegeeks.com
e-GITS	www.e-gits.com	POWERCASE FORMULA CRM	www.formulacrm.de
EAS	www.eas-solutions.de	PSI Software	www.psi.de
Eckelmann	www.eckelmann.de	PSI Technics	www.psi-technics.com
Eckelmann FCS	www.eckelmann.de	Qualysoft	www.de.qualysoft.com
eEvolution	www.eevolution.de	Reichhardt	www.reichhardt.com
elunic	www.elunic.com/de	REINHOLZ Software & Technology	www.reinholz-sat.de
:em engineering methods	www.em.ag	S & P Computersysteme	www.sup-logistik.de
eoda	www.eoda.de	SALT Solutions	www.salt-solutions.de
EPLAN	www.eplan.de	SAP Deutschland	www.sap.com/germany
ERGOSIGN	www.ergosign.de	Schubert & Salzer Data	www.schubert-salzer.com
ERM Consulting	www.erm-consulting.de	Siemens Industry Software	www.sw.siemens.com
ERNI (Deutschland)	www.betterjoin.erni	SMS group	www.sms-group.com/expertise/digitalization
esco	www.esco-aachen.de	Software Factory	www.sfc.com
esentri	www.esentri.com	SQL Projekt	www.sql-ag.de
Fabasoft Deutschland	www.fabasoft.com/de	Sybit	www.sybit.de
FAUSER	www.fauser.ag	Synostik	www.synostik.de
GAL Digital	www.gal-digital.de	Syntax Systems	www.syntax.com/fit
generic.de software technologies	www.generic.de	syscon	www.syscon-online.com
Gesellschaft für Sonder-EDV-Anlagen	www.gfs-hofheim.de	talpasolutions	www.talpasolutions.com
GFOS	www.gfos.com	TECHNIA	www.technia.com
GFT Technologies	www.gft.com/de/de/index	Techniciency Consulting	www.techniciency.de
GODYO Business Solutions	www.godyo.com	The MathWorks	www.mathworks.com
Grenzebach Digital	www.grenzebach.digital	Thyssenkrupp Materials IoT	www.thyssenkrupp-materials-iot.com
HEGLA-HANIC	www.hegla-hanic.de	toolbox	www.toolbox-software.com
HEISAB	www.heisab.de	TopM Software	www.topm.de
HEITEC	www.heitec.de	UNITY	www.unity.de
IBM Deutschland	www.ibm.de	User Interface Design	www.uid.com
ILC	www.ilc-solutions.de	VSF Experts	www.vsf-experts.de
in-tech	www.in-tech.com	XITASO	www.xitaso.com
incowia	www.incowia.com	Your Expert Cluster	www.youexpertcluster.de
Industrie Reply	www.reply.com	znt	www.znt-richter.com
Infor (Deutschland)	www.infor.com	Zühlke Engineering	www.zuehlke.com
INFORM	www.felios.de		
INNEO Solutions	www.inneo.com		
INNOSOFT	www.innosoft.de		

Software Quality

abilis	www.abilis.de	INNOSOFT	www.innosoft.de
AIT-Applied Information Technologies	www.aitgmbh.de	ISG	www.isg-stuttgart.de
ams.Solution	www.ams-erp.com	iT Engineering Software Innovations	www.ite-si.de
Asseco Solutions	www.assecosolutions.com	IT Vision Technology	www.itvt.de
audius	www.audius.de	ITQ	www.itq.de
Balluff	www.balluff.com	Janz Tec	www.janztec.com
BEUMER Maschinenfabrik	www.beumergroup.com	Jungheinrich	www.jungheinrich.de
bridgefield	www.bridgefield.de	Kinexon Industries	www.kinexon-industries.com
CaderaDesign	www.caderadesign.de	Konzeptpark	www.konzeptpark.de
CATUNO	www.catuno.de	Körber	www.koerber.com
CE-CON	www.ce-con.de	logicline	www.logicline.de
Centigrade	www.centigrade.de	M&M Software	www.mm-software.com
Configura	www.configura.com	macio	www.macio.de
COSMO CONSULT GmbH	www.cosmoconsult.com	Microsoft Deutschland	www.microsoft.com
COSMO CONSULT AG	www.cosmoconsult.com	MODUS Consult	www.modusconsult.de
Dassault Systemes Deutschland	www.3ds.com	mpunkt	www.mpunkt.com
DataArt	www.dataart.com/de	N+P Informationssysteme	www.nupis.de
DCC global	www.dcc-global.com	NewTec	www.newtec.de
e-GITS	www.e-gits.com	Odego	www.odego.de
Eckelmann	www.eckelmann.de	Opdenhoff Technologie	www.opdenhoff.com
Eckelmann FCS	www.eckelmann.de	PIKON Deutschland	www.pikon.com
elunic	www.elunic.com/de	PLANWARE Beratung & Software	www.planware.de
:em engineering methods	www.em.ag	Positive Geeks	www.positivegeeks.com
eoda	www.eoda.de	PSI Technics	www.psi-technics.com
EPLAN	www.eplan.de	Qualysoft	www.de.qualysoft.com
ERGOSIGN	www.ergosign.de	REINHOLZ Software & Technology	www.reinholz-sat.de
ERM Consulting	www.erm-consulting.de	SALT Solutions	www.salt-solutions.de
ERNI (Deutschland)	www.betterjoin.erni	SAP Deutschland	www.sap.com/germany
esentri	www.esentri.com	Schneider Electric Systems Germany	www.se.com/de/de
Fabasoft Deutschland	www.fabasoft.com/de	Siemens Industry Software	www.sw.siemens.com
GAL Digital	www.gal-digital.de	SMS group	www.sms-group.com/expertise/digitalization
generic.de software technologies	www.generic.de	Software Factory	www.sf.com
Gesellschaft für Sonder-EDV-Anlagen	www.gfs-hofheim.de	SQL Projekt	www.sql-ag.de
GFOS	www.gfos.com	STAR Deutschland	www.star-group.net
GFT Technologies	www.gft.com/de/de/index	Sybit	www.sybit.de
GODYO Business Solutions	www.godyo.com	talpasolutions	www.talpasolutions.com
Grenzebach Digital	www.grenzebach.digital	TECHNIA	www.technia.com
HEGLA-HANIC	www.hegla-hanic.de	The MathWorks	www.mathworks.com
HEISAB	www.heisab.de	User Interface Design	www.uid.com
HEITEC	www.heitec.de	VSF Experts	www.vsf-experts.de
IBM Deutschland	www.ibm.de	WENZEL Metrology	www.wenzel-group.com
in-tech	www.in-tech.com	XITASO	www.xitaso.com
incowia	www.incowia.com	Your Expert Cluster	www.youexpertcluster.de
Industrie Informatik	www.industrieminformatik.com	znt	www.znt-richter.com
Industrie Reply	www.reply.com	Zühlke Engineering	www.zuehlke.com
Infor (Deutschland)	www.infor.com		
INFORM	www.felios.de		

Usability / Human Machine Interface / User Experience

247FactoryNet	www.247factorynet.com	avenit	www.avenit.de
3D Interaction Technologies	www.3dit.de	Balluff	www.balluff.com
3DQR	www.3dqr.de	Beckhoff Automation	www.beckhoff.com
A+W Software	www.a-w.de	BEUMER Maschinenfabrik	www.beumergroup.com
abilis	www.abilis.de	bridgefield	www.bridgefield.de
accelcon industrial engineering	www.accelcon.de	CaderaDesign	www.caderadesign.de
ADVES	www.adves.one	CE-CON	www.ce-con.de
AIT-Applied Information Technologies	www.aitgmbh.de	Centigrade	www.centigrade.de
Asseco Solutions	www.assecosolutions.com	cognitas	www.cognitas.de

Usability / Human Machine Interface / User Experience

Configit	www.configit.com	Körber	www.koerber.com
Configura	www.configura.com	kothes	www.kothes.com
COSMO CONSULT GmbH	www.cosmoconsult.com	KRONES	www.krones.com
COSMO CONSULT AG	www.cosmoconsult.com	LASCO Umformtechnik	www.lasco.com
daenet	www.daenet.de	Lino	www.lino.de
DataArt	www.dataart.com/de	logicline	www.logicline.de
DCC global	www.dcc-global.com	M&M Software	www.mm-software.com
DIENES Apparatebau	www.dienes.net	macio	www.macio.de
Dokusmiede	www.dokusmiede.de	Microsoft Deutschland	www.microsoft.com
Dürr Aktiengesellschaft	www.durr.com	MODUS Consult	www.modusconsult.de
Eckelmann	www.eckelmann.de	mpunkt	www.mpunkt.com
Eckelmann FCS	www.eckelmann.de	N+P Informationssysteme	www.nupis.de
elunic	www.elunic.com/de	NewTec	www.newtec.de
eoda	www.eoda.de	NIVUS	www.nivus.de
EPLAN	www.eplan.de	Odego	www.odego.de
ERGOSIGN	www.ergosign.de	Opdenhoff Technologie	www.opdenhoff.com
ERM Consulting	www.erm-consulting.de	Optima packaging group	www.optima-packaging.com
ERNI (Deutschland)	www.betterjoin.erni	ORBIS	www.orbis.de
esco	www.esco-aachen.de	ORISA Software	www.orisa.de
esentri	www.esentri.com	Peakboard	www.peakboard.com
ESI ITI	www.simulationx.de	Perspectix	www.perspectix.com
EURO-LOG	www.eurolog.com	PIKON Deutschland	www.pikon.com
Fabasoftware Deutschland	www.fabasoftware.com/de	PLANWARE Beratung & Software	www.planware.de
FAUSER	www.fauser.ag	Point 8	www.point-8.de
GAL Digital	www.gal-digital.de	POWERCASE FORMULA CRM	www.formulacrm.de
generic.de software technologies	www.generic.de	proALPHA Business Solutions	www.proalpha.com
Gesellschaft für Sonder-EDV-Anlagen	www.gfs-hofheim.de	PSI Software	www.psi.de
GFOS	www.gfos.com	PSI Technics	www.psi-technics.com
GFT Technologies	www.gft.com/de/de/index	Qualysoft	www.de.qualysoft.com
GLAESS Software & Automation	www.glaess-software.de	Reichhardt	www.reichhardt.com
GODYO Business Solutions	www.godyo.com	REINHOLZ Software & Technology	www.reinholz-sat.de
HALO-electronic	www.inteos.com	relayr	www.relayr.io/de
HEGLA-HANIC	www.hegla-hanic.de	S & P Computersysteme	www.sup-logistik.de
HEISAB	www.heisab.de	SALT Solutions	www.salt-solutions.de
HEITEC	www.heitec.de	SAP Deutschland	www.sap.com/germany
IBM Deutschland	www.ibm.de	Schneider Electric Systems Germany	www.se.com/de/de
ICONICS Germany	www.iconics.com	SMS group	www.sms-group.com/expertise/digitalization
ILC	www.ilc-solutions.de	Software Factory	www.sf.com
in-tech	www.in-tech.com	STAR Deutschland	www.star-group.net
Industrie Reply	www.reply.com	Sybit	www.sybit.de
INDUTRAX	www.indutrax.net	talpasolutions	www.talpasolutions.com
Infor (Deutschland)	www.infor.com	TEDATA	www.tedata.de
INFORM	www.felios.de	UNITY	www.unity.de
INNOSOFT	www.innosoft.de	User Interface Design	www.uid.com
ISG	www.isg-stuttgart.de	VÖLKELE Mikroelektronik	www.voelkel.de
iT Engineering Software Innovations	www.ite-si.de	J.M. Voith/VPH	www.voithpaper.com
IT Vision Technology	www.itvt.de	VSF Experts	www.vsf-experts.de
Janz Tec	www.janztec.com	Weidmüller GTI Software	www.gti.de
Jungheinrich	www.jungheinrich.de	XITASO	www.xitaso.com
Kinexon Industries	www.kinexon-industries.com	znt	www.znt-richter.com
KOCH Pac-Systeme	www.koch-pac-systeme.com	Zühlke Engineering	www.zuehlke.com
konzeptpark	www.konzeptpark.de		

Agile Development Methods

247FactoryNet	www.247factorynet.com	iT Engineering Software Innovations	www.ite-si.de
A+W Software	www.a-w.de	IT Vision Technology	www.itvt.de
accelcon industrial engineering	www.accelcon.de	ITQ	www.itq.de
ADITO Software	www.adito.de	Janz Tec	www.janztec.com
AIT-Applied Information Technologies	www.aitgmbh.de	Jungheinrich	www.jungheinrich.de
All for One Group	www.all-for-one.com	konzeptpark	www.konzeptpark.de
ams.Solution	www.ams-erp.com	Körber	www.koerber.com
Asseco Solutions	www.assecosolutions.com	KRONES	www.krones.com
audius	www.audius.de	logi.cals	www.logicals.com
Balluff	www.balluff.com	logi.cals automation solutions & services	www.logicals.com
BCT Technology	www.bct-technology.com	logicline	www.logicline.de
BEUMER Maschinenfabrik	www.beumergroup.com	M&M Software	www.mm-software.com
bridgefield	www.bridgefield.de	macio	www.macio.de
CaderaDesign	www.caderadesign.de	Microsoft Deutschland	www.microsoft.com
Centigrade	www.centigrade.de	Mobile Function	www.mobile-function.com
CETECOM	www.cetecom.com	MODUS Consult	www.modusconsult.de
ClassiX Software	www.classix.de	mpunkt	www.mpunkt.com
Configura	www.configura.com	N+P Informationssysteme	www.nupis.de
COSMO CONSULT GmbH	www.cosmoconsult.com	neogramm	www.neogramm.de
COSMO CONSULT AG	www.cosmoconsult.com	NewTec	www.newtec.de
daenet	www.daenet.de	Odego	www.odego.de
Dassault Systemes Deutschland	www.3ds.com	Optima packaging group	www.optima-packaging.com
DataArt	www.dataart.com/de	ORISA Software	www.orisa.de
DataVision	www.datavision.software	Perspectix	www.perspectix.com
DOCUFY	www.docufy.de	PIKON Deutschland	www.pikon.com
Dürr Aktiengesellschaft	www.durr.com	PLANWARE Beratung & Software	www.planware.de
e-GITS	www.e-gits.com	Point 8	www.point-8.de
Eckelmann	www.eckelmann.de	Positive Geeks	www.positivegeeks.com
Eckelmann FCS	www.eckelmann.de	POWERCASE FORMULA CRM	www.formulacrm.de
eEvolution	www.eevolution.de	proALPHA Business Solutions	www.proalpha.com
elunic	www.elunic.com/de	ProLeiT	www.proleit.de
:em engineering methods	www.em.ag	PROSTEP	www.prostep.com
eoda	www.eoda.de	PSI Software	www.psi.de
EPLAN	www.eplan.de	PSI Technics	www.psi-technics.com
ERGOSIGN	www.ergosign.de	q.beyond	www.qbeyond.de
ERM Consulting	www.erm-consulting.de	Qualysoft	www.de.qualysoft.com
ERNI (Deutschland)	www.betterjoin.erni	REINHOLZ Software & Technology	www.reinholz-sat.de
esentri	www.esentri.com	SALT Solutions	www.salt-solutions.de
EURO-LOG	www.eurolog.com	SAP Deutschland	www.sap.com/germany
Fabasoft Deutschland	www.fabasoft.com/de	Siemens Industry Software	www.sw.siemens.com
GAL Digital	www.gal-digital.de	SMS group	www.sms-group.com/expertise/digitalization
generic.de software technologies	www.generic.de	Software Factory	www.sf.com
GFOS	www.gfos.com	SQL Projekt	www.sql-ag.de
GFT Technologies	www.gft.com/de/de/index	Sybit	www.sybit.de
GODYO Business Solutions	www.godyo.com	symmedia	www.symmedia.de
Grenzebach Digital	www.grenzebach.digital	talpasolutions	www.talpasolutions.com
HALO-electronic	www.inteos.com	Techniciency Consulting	www.techniciency.de
HEGLA-HANIC	www.hegla-hanic.de	The MathWorks	www.mathworks.com
HEISAB	www.heisab.de	toolbox	www.toolbox-software.com
HEITEC	www.heitec.de	TopM Software	www.topm.de
IBM Deutschland	www.ibm.de	UNITY	www.unity.de
ILC	www.ilc-solutions.de	User Interface Design	www.uid.com
in-tech	www.in-tech.com	valantic Supply Chain Excellence	www.valantic.com
incowia	www.incowia.com	VSF Experts	www.vsf-experts.de
Industrie Reply	www.reply.com	XITASO	www.xitaso.com
INDUTRAX	www.indutrax.net	Zühlke Engineering	www.zuehlke.com
INFORM	www.felios.de		
INNEO Solutions	www.inneo.com		

Customized Application Development

247FactoryNet	www.247factorynet.com	HEISAB	www.heisab.de
3D Interaction Technologies	www.3dit.de	HEITEC	www.heitec.de
ACAM Engineering	www.acam.at	IBM Deutschland	www.ibm.de
accelcon industrial engineering	www.accelcon.de	ILC	www.ilc-solutions.de
ADITO Software	www.adito.de	in-tech	www.in-tech.com
AIT-Applied Information Technologies	www.aitgmbh.de	incontext.technology	www.incontext.technology
All for One Group	www.all-for-one.com	incowia	www.incowia.com
Altair Engineering	www.altair.com	Industrie Informatik	www.industrieminformatik.com
ams.Solution	www.ams-erp.com	Industrie Reply	www.reply.com
ARC Solutions	www.arcsolutions.de	INFORM	www.felios.de
ARNOLD IT Systems	www.arnold-it.com	INNEO Solutions	www.inneo.com
Asseco Solutions	www.assecosolutions.com	IPKS	www.ipks.de
audius	www.audius.de	ISG	www.isg-stuttgart.de
Balluff	www.balluff.com	iT Engineering Software Innovations	www.ite-si.de
BEUMER Maschinenfabrik	www.beumergroup.com	IT Vision Technology	www.itvt.de
BITZER Wiegetechnik	www.bitzer-waage.de	ITQ	www.itq.de
Bosch Rexroth	www.boschrexroth.com/de/de	Janz Tec	www.janztec.com
bridgefield	www.bridgefield.de	JAWA Management Software	www.jawa.at
CaderaDesign	www.caderadesign.de	KOCH Pac-Systeme	www.koch-pac-systeme.com
CATUNO	www.catuno.de	kommunikationsoptimierer.de	www.kommunikationsoptimierer.de
Centigrade	www.centigrade.de	konzeptpark	www.konzeptpark.de
CIPA	www.openpack.net	Körber	www.koerber.com
ClassiX Software	www.classix.de	kothes	www.kothes.com
cognitas.	www.cognitas.de	Lino	www.lino.de
Configura	www.configura.com	logicline	www.logicline.de
COSMO CONSULT GmbH	www.cosmoconsult.com	M&M Software	www.mm-software.com
COSMO CONSULT AG	www.cosmoconsult.com	macio	www.macio.de
daenet	www.daenet.de	Magic Software Enterprises	www.magicsoftware.com
DataArt	www.dataart.com/de	Microsoft Deutschland	www.microsoft.com
DataVision	www.datavision.software	Mobile Function	www.mobile-function.com
DCC global	www.dcc-global.com	MODUS Consult	www.modusconsult.de
DIENES Apparatebau	www.dienes.net	mpunkt	www.mpunkt.com
DOCUFY	www.docufy.de	neogramm	www.neogramm.de
Dokus Schmiede	www.dokus Schmiede.de	NewTec	www.newtec.de
Dürr Aktiengesellschaft	www.durr.com	Odego	www.odego.de
e-GITS	www.e-gits.com	ORBIS	www.orbis.de
eEvolution	www.eevolution.de	ORISA Software	www.orisa.de
Elabo	www.elabo.de	Perspectix	www.perspectix.com
elunic	www.elunic.com/de	PIKON Deutschland	www.pikon.com
:em engineering methods	www.em.ag	PLANWARE Beratung & Software	www.planware.de
entergon	www.entergon.de	Point 8	www.point-8.de
eoda	www.eoda.de	Positive Geeks	www.positivegeeks.com
EPLAN	www.eplan.de	POWERCASE FORMULA CRM	www.formulacrm.de
ERGOSIGN	www.ergosign.de	proALPHA Business Solutions	www.proalpha.com
ERM Consulting	www.erm-consulting.de	PROSTEP	www.prostep.com
ERNI (Deutschland)	www.betterjoin.erni	PSI Technics	www.psi-technics.com
esco	www.esco-aachen.de	q.beyond	www.qbeyond.de
esentri	www.esentri.com	Qualysoft	www.de.qualysoft.com
EURO-LOG	www.eurolog.com	Reichhardt	www.reichhardt.com
Fabasoft Deutschland	www.fabasoft.com/de	relayr	www.relayr.io/de
FAUSER	www.fauser.ag	SALT Solutions	www.salt-solutions.de
GAL Digital	www.gal-digital.de	Schubert & Salzer Data	www.schubert-salzer.com
generic.de software technologies	www.generic.de	SERVITIZE	www.servitize.de
Gesellschaft für Sonder-EDV-Anlagen	www.gfs-hofheim.de	SL innovativ	www.sl-i.de
GFS	www.gfos.com	SMS group	www.sms-group.com/expertise/digitalization
GFT Technologies	www.gft.com/de/de/index	Software Factory	www.sf.com
GLAESS Software & Automation	www.glaess-software.de	SQL Projekt	www.sql-ag.de
GODYO Business Solutions	www.godyo.com	STAR Deutschland	www.star-group.net
Grenzebach Digital	www.grenzebach.digital	Sybit	www.sybit.de
HALO-electronic	www.inteos.com	talpasolutions	www.talpasolutions.com
HEGLA-HANIC	www.hegla-hanic.de		

Customized Application Development

TEDATA	www.tedata.de	VÖLKELE Mikroelektronik	www.voelkel.de
Thyssenkrupp Materials IoT	<a href="http://www.thyssenkrupp-materials-
iot.com">www.thyssenkrupp-materials- iot.com	VSF Experts	www.vsf-experts.de
toolbox	www.toolbox-software.com	Werum IT Solutions	www.koerber-pharma.com
TopM Software	www.topm.de	WITTENSTEIN	www.wittenstein.de
UNITY	www.unity.de	XITASO	www.xitaso.com
untersee Unternehmensberatung	www.untersee.com	Zimmer & Kreim	www.zk-system.com
User Interface Design	www.uid.com	znt	www.znt-richter.com
valantic Supply Chain Excellence	www.valantic.com	Zühlke Engineering	www.zuehlke.com

Industrial Security – security in the digital future



Steffen Zimmermann

Industrial security protects industrial communication and production systems to ensure that industry can produce safely and reliably. The engineering sector assumes various different roles in this context. Firstly, as a system operator it aims to digitalize production processes. Secondly, as a manufacturer it develops new machines, systems, services and business models for its customers within the framework of Industry 4.0. Thirdly, it purchases components and services that it configures in machines and systems for specific customers, also operating them as the case may be. Engineering firms thus bear a great burden of responsibility when viewing security requirements and then developing, implementing and updating corresponding measures.

The engineering sector faces the challenge of having to warrant integrity, availability and confidentiality throughout the entire period of use. This starts with product development via provision and initial commissioning through to continuous operation. At the same time, in the operating role, engineering firms need to embed their existing, often self-sufficient and static production systems in agile communication structures. The machines and systems are not made for that purpose and often have to be upgraded or converted under time pressure, without corresponding adjustments being made to the legally and technically necessary requirements of standards and data security.

Compiling knowledge instead of actionism

The earlier companies integrate knowledge about potential threats, necessary measures and useful sources of information into the product life cycle, the more sustainable and reliable the implementation measures will be. Guidelines on Industry 4.0 Security, IEC 62443 and corresponding training courses offered by VDMA provide members with in-depth recommendations and implementation support for integrating security in production, products and systems.

VDMA supports its members with regard to all questions and challenges involved in industrial security. In this context, VDMA Software and Digitalization offers the “Industrial Security” and “Information Security” working groups, where VDMA members can share their sector relevant content to the industry. Since the Corona pandemic, we also have been offering a security breakfast for interested VDMA members at regular intervals.

VDMA contact

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Industrial / IT-Security

OT Security: in Manufacturing / Production

@-yet	www.add-yet.de	Microsoft Deutschland	www.microsoft.com
All for One Group	www.all-for-one.com	MODUS Consult	www.modusconsult.de
alltrotec	www.alltrotec.de	N+P Informationssysteme	www.nupis.de
Balluff	www.balluff.com	NIVUS	www.nivus.de
Bosch Rexroth	www.boschrexroth.com/de/de	ondeso	www.ondeso.com
bridgefield	www.bridgefield.de	PHOENIX CONTACT	www.innominate.com
COSMO CONSULT GmbH	www.cosmoconsult.com	ProLeiT	www.proleit.de
COSMO CONSULT AG	www.cosmoconsult.com	q.beyond	www.qbeyond.de
DELTA LOGIC	www.deltalogic.de	REINHOLZ Software & Technology	www.reinholz-sat.de
ECOS Technology	www.ecos.de	Rockwell Automation Solutions	www.rockwellautomation.com
eoda	www.eoda.de	Rockwell Automation	www.rockwellautomation.com
genua	www.genua.de	Securikett Ulrich & Horn	www.securikett.com
Google Germany	www.google.de	SMS group	www.sms-group.com/expertise/digitalization
HALO-electronic	www.inteos.com		www.sf.com
HEITEC	www.heitec.de	Software Factory	www.symmedia.de
HighConsulting	www.crsbm.biz	symmedia	www.symmedia.de
HiSolutions	www.hisolutions.com	TECHNIA	www.technia.com
IBM Deutschland	www.ibm.de	TRUMPF	www.trumpf.com
IT Engineering Software Innovations	www.ite-si.de	Voith	www.voith.com
IT Vision Technology	www.itvt.de	J.M. Voith/DSG Division Digital Ventures	www.voith.com
Janz Tec	www.janztec.com	J.M. Voith/VPH	www.voithpaper.com
Körber	www.koerber.com	WITTENSTEIN	www.wittenstein.de
KRONES	www.krones.com	XITASO	www.xitaso.com
macio	www.macio.de		

Product Security: in Products / digital Services

@-yet	www.add-yet.de	Microsoft Deutschland	www.microsoft.com
alltrotec	www.alltrotec.de	N+P Informationssysteme	www.nupis.de
Bosch Rexroth	www.boschrexroth.com/de/de	NIVUS	www.nivus.de
bridgefield	www.bridgefield.de	Odego	www.odego.de
Centigrade	www.centigrade.de	ondeso	www.ondeso.com
CIPA	www.openpack.net	POWERCASE FORMULA CRM	www.formulacrm.de
Configit	www.configit.com	ProLeiT	www.proleit.de
COSMO CONSULT GmbH	www.cosmoconsult.com	q.beyond	www.qbeyond.de
COSMO CONSULT AG	www.cosmoconsult.com	Rockwell Automation	www.rockwellautomation.com
Dassault Systemes Deutschland	www.3ds.com	Schneider Electric	www.schneider-electric.de
ECOS Technology	www.ecos.de	SMS group	www.sms-group.com/expertise/digitalization
eoda	www.eoda.de		www.sf.com
GFOS	www.gfos.com	Software Factory	www.mathworks.com
HiSolutions	www.hisolutions.com	The MathWorks	www.mathworks.com
IBM Deutschland	www.ibm.de	J.M. Voith/VPH	www.voithpaper.com
KRONES	www.krones.com	WIBU-SYSTEMS	www.wibu.com
macio	www.macio.de	Zühlke Engineering	www.zuehlke.com

IT/IS-Security – Solutions for Office and Businesses

abilis	www.abilis.de	eEvolution	www.eevolution.de
@-yet	www.add-yet.de	eoda	www.eoda.de
All for One Group	www.all-for-one.com	genua	www.genua.de
alltrotec	www.alltrotec.de	GFOS	www.gfos.com
Bosch Rexroth	www.boschrexroth.com/de/de	Google Germany	www.google.de
Computer System	www.cs-ilmeneau.de	HighConsulting	www.crsbm.biz
COSMO CONSULT GmbH	www.cosmoconsult.com	HiSolutions	www.hisolutions.com
COSMO CONSULT AG	www.cosmoconsult.com	IBM Deutschland	www.ibm.de
DataArt	www.dataart.com/de	INNEO Solutions	www.inneo.com
ECOS Technology	www.ecos.de	ISAP	www.isap.de

IT/IS-Security – Solutions for Office and Businesses

IT Vision Technology	www.itvt.de	PROSTEP	www.prostep.com
Microsoft Deutschland	www.microsoft.com	q.beyond	www.qbeyond.de
MODUS Consult	www.modusconsult.de	Rockwell Automation	www.rockwellautomation.com
N+P Informationssysteme	www.nupis.de	Voith	www.voith.com
PHOENIX CONTACT	www.innominate.com	J.M. Voith/DSG Division Digital Ventures	www.voith.com
Positive Geeks	www.positivegeeks.com	WITTENSTEIN	www.wittenstein.de
POWERCASE FORMULA CRM	www.formulacrm.de		

Product independent Security Consulting

Abass	www.abass.de	KRONES	www.krones.com
abilis	www.abilis.de	M&M Software	www.mm-software.com
@-yet	www.add-yet.de	MODUS Consult	www.modusconsult.de
All for One Group	www.all-for-one.com	neogramm	www.neogramm.de
ARC Solutions	www.arcsolutions.de	NewTec	www.newtec.de
audius	www.audius.de	ondeso	www.ondeso.com
bridgefield	www.bridgefield.de	PROSTEP	www.prostep.com
Centigrade	www.centigrade.de	REINHOLZ Software & Technology	www.reinholz-sat.de
Computer System	www.cs-ilmenau.de	Rockwell Automation	www.rockwellautomation.com
COSMO CONSULT GmbH	www.cosmoconsult.com	SMS group	www.sms-group.com/expertise/digitalization
DataArt	www.dataart.com/de	Software Factory	www.sf.com
eoda	www.eoda.de	Syntax Systems	www.syntax.com/fit
EPLAN	www.eplan.de	syscon	www.syscon-online.com
esentri	www.esentri.com	UNITY	www.unity.de
FAUSER	www.fauser.ag	Voith	www.voith.com
GEA Brewery Systems	www.gea.com	J.M. Voith/DSG Division Digital Ventures	www.voith.com
genua	www.genua.de	J.M. Voith/VPH	www.voithpaper.com
HEITEC	www.heitec.de	VSF Experts	www.vsf-experts.de
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IBM Deutschland	www.ibm.de	znt	www.znt-richter.com
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Virtual and augmented reality



Thomas Riegler

The growing need for skilled qualified workers and the increasing requirements that are being made of technology are boosting the demand for technical support in the various departments of engineering firms.

This explains the huge increase in demand for augmented and virtual reality solutions where computers extend the perception of reality with visual transmission of information. Football broadcasts already use this approach, supplementing reality with a circle or line to show the distances involved in a free kick, for example.

Industrial applications use mobile devices such as tablets, smart phones and above all, so-called smart glasses. Smart glasses not only show virtual reality but are also equipped with a camera, microphone and headphones for interaction with other people. Teams can thus work together to solve difficult tasks even if not all the experts and necessary information are on the spot.

The current VDMA IT Report shows that virtual, augmented and mixed reality is meanwhile important for around 70 percent of the respondents. A fifth of the companies are already using corresponding solutions, with the trend constantly on the increase, being driven primarily by medium and larger companies. Up to now, the main applications for these solutions have been customer service, sales and development. Other possible uses include training, simulation, production and installation as well as logistics.

VDMA supports its members with questions and challenges on this topic and offers its members a broad network of experts.

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Virtual / Augmented / Mixed Reality

Solutions for Customer Service

3D Interaction Technologies	www.3dit.de	Körber	www.koerber.com
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avenit	www.avenit.de	M&M Software	www.mm-software.com
BCT Technology	www.bct-technology.com	MAG IAS	www.ffg-ea.com
BEUMER Maschinenfabrik	www.beumergroup.com	Microsoft Deutschland	www.microsoft.com
Blauhut & Partner Informationssysteme	www.procos.de	Mobile Function	www.mobile-function.com
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CaderaDesign	www.caderadesign.de	N+P Informationssysteme	www.nupis.de
CAS Software	www.cas.de	oculavis	www.oculavis.de
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cognitas.	www.cognitas.de	proALPHA Business Solutions	www.proalpha.com
Configit	www.configit.com	q.beyond	www.qbeyond.de
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daenet	www.daenet.de	Rockwell Automation	www.rockwellautomation.com
Dassault Systemes Deutschland	www.3ds.com	SALT Solutions	www.salt-solutions.de
DataArt	www.dataart.com/de	Schneider Electric	www.schneider-electric.de
Delta Cygni Labs	www.pointr.com	Siemens Industry Software	www.sw.siemens.com
DLP Engineers	www.dlp-engineers.de	SL innovativ	www.sl-i.de
DOCUFY	www.docufy.de	SMS group	www.sms-group.com/expertise/digitalization
Eckelmann	www.eckelmann.de	Software Factory	www.sf.com
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eEvolution	www.eevolution.de	Sybit	www.sybit.de
eoda	www.eoda.de	symmedia	www.symmedia.de
Fischer Information Technology	www.fischer-information.com	TRUMPF	www.trumpf.com
GAL Digital	www.gal-digital.de	untersee Unternehmensberatung	www.untersee.com
GEA Brewery Systems	www.gea.com	User Interface Design	www.uid.com
GFT Technologies	www.gft.com/de/de/index	Viewpointsystem	www.viewpointsystem.com
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Grenzbach Digital	www.grenzbach.digital	J.M. Voith/DSG Division Digital Ventures	www.voith.com
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Solutions for Marketing and Sales

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HALO-electronic	www.inteos.com	Rockwell Automation	www.rockwellautomation.com
ICONICS Germany	www.iconics.com	SAE Applications for Digitalization	www.sae-portal.de
INNEO Solutions	www.inneo.com	SALT Solutions	www.salt-solutions.de
ISG	www.isg-stuttgart.de	Schneider Electric	www.schneider-electric.de
kothes	www.kothes.com	Siemens Industry Software	www.sw.siemens.com
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GFT Technologies	www.gft.com/de/de/index	Siemens Industry Software	www.sw.siemens.com
INNEO Solutions	www.inneo.com	SL innovativ	www.sl-i.de
ISG	www.isg-stuttgart.de	User Interface Design	www.uid.com
KOCH Pac-Systeme	www.koch-pac-systeme.com	J.M. Voith/VPH	www.voithpaper.com

Solutions for further Fields of Application

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CIPA	www.openpack.net	Grenzebach Digital	www.grenzebach.digital
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macio	www.macio.de	SL innovativ	www.sl-i.de
Microsoft Deutschland	www.microsoft.com	SMS group	www.sms-group.com/expertise/digitalization
Mobile Function	www.mobile-function.com	Software Factory	www.sf.com
MODUS Consult	www.modusconsult.de	Solutiness	www.tele-look.com
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oculavis	www.oculavis.de	Viewpointsystem	www.viewpointsystem.com
Optima packaging group	www.optima-packaging.com	Voith	www.voith.com
Perspectix	www.perspectix.com	J.M. Voith/DSG Division Digital Ventures	www.voith.com
ProLeiT	www.proleit.de	WeAre	www.weare-rooms.com
Rockwell Automation Solutions	www.rockwellautomation.com	Werum IT Solutions	www.koerber-pharma.com
Rockwell Automation	www.rockwellautomation.com	XITASO	www.xitaso.com
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SALT Solutions	www.salt-solutions.de		

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ERGOSIGN	www.ergosign.de	Tebis Technische Informationssysteme	www.tebis.com
FAUSER	www.fausser.ag	UNITY	www.unity.de
GAL Digital	www.gal-digital.de	User Interface Design	www.uid.com
GFOS	www.gfos.com	WeAre	www.weare-rooms.com
GFT Technologies	www.gft.com/de/de/index	Werum IT Solutions	www.koerber-pharma.com
HEITEC	www.heitec.de	XITASO	www.xitaso.com
IBM Deutschland	www.ibm.de	Zühlke Engineering	www.zuehlke.com
INNEO Solutions	www.inneo.com		
ISG	www.isg-stuttgart.de		

Customer relationship management and service management



Thomas Riegler

In all change processes related to digitalization, the focus remains on the customer. This begins in sales and extends to the service department. Proper interaction with customers in all business areas makes a significant contribution to the success of a business. Systems which manage all customer activities are required to maintain and optimize existing customer relations.

CRM systems and service management systems map the individual processes involved here. For some time now, these systems have been increasingly merging into one – a sensible development, as information from sales is indispensable for the service department and vice versa.

All information about the customers and the installed basis is combined in one system, making data redundancy and discontinuities a thing of the past. Systematic design of all relations and interactions with existing and potential customers creates transparency, reduces reaction times and enhances customer loyalty. Other business units such as the development and design departments also benefit from these systems.

Machine connectivity is growing ever more in the age of digitalization. Employees are also connected with mobile devices such as smartphones, tablets or smart glasses.

For 20 years, the Remote Service user forum in VDMA has been analyzing solutions which provide services via telecommunication systems.

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Customer Relationship Management (CRM)

Part of ERP

abas Software	www.abas-erp.com	HEISAB	www.heisab.de
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All for One Group	www.all-for-one.com	Infor (Deutschland)	www.infor.com
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CSS	www.css.de	proALPHA Business Solutions	www.proalpha.com
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HALO-electronic	www.inteos.com	untersee Unternehmensberatung	www.untersee.com
HEGLA-HANIC	www.hegla-hanic.de		

Stand-alone CRM / Customer Service Solution

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audius	www.audius.de	Perspectix	www.perspectix.com
CAS Software	www.cas.de	PiSA sales	www.justrelate.com/de
ClassiX Software	www.classix.de	POWERCASE FORMULA CRM	www.formulacrm.de
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COSMO CONSULT AG	www.cosmoconsult.com	q.beyond	www.qbeyond.de
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IT Vision Technology	www.itvt.de	untersee Unternehmensberatung	www.untersee.com
itmX	www.itmx.de	valantic Supply Chain Excellence	www.valantic.com
KUMAVISION	www.kumavision.com		

Remote Service Solution Provider

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GEA Brewery Systems	www.gea.com
Google Germany	www.google.de
HighConsulting	www.crsn.biz
IFS Deutschland	www.ifs.com/de
itmX	www.itmx.de
Körber	www.koerber.com
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SERVITIZE	www.servitize.de
SL innovativ	www.sl-i.de
Solutiness	www.tele-look.com
SQL Projekt	www.sql-ag.de
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TRUMPF	www.trumpf.com
Martin Wiesend Die Kundendienst-Trainer	www.kundendienst-trainer.de

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MQ result consulting	www.mqresult.de
NTI Kailer	www.nti.biz/de
Opdenhoff Technologie	www.opdenhoff.com
ORBIS	www.orbis.de
Plan Software	www.plansoft.de
Qualysoft	www.de.qualysoft.com
SERVITIZE	www.servitize.de
SL innovativ	www.sl-i.de
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UNITY	www.unity.de
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Digital spare parts catalogues in industry



Thomas Riegler

Spare parts continue to be the most important driver of turnover in the service sector. Digital spare parts catalogues are increasingly used in an effort to provide customers, service technicians and business partners with quick support and optimum order processing. This gives the user access to complex information about spare parts and services.

In addition, companies that introduce digital spare parts catalogues often pursue the following objectives:

- Reducing process costs
- Avoiding incorrect purchase orders
- Accelerating the compilation of product catalogues
- Improving availability
- Enhancing customer loyalty
- Increasing sales

Numerous advantages in the web

The Internet offers a wide range of options for implementation and support. Exploded-view drawings for example make it easier to identify parts, while customer-specific prices can be obtained from the ERP system online. Information on bills of materials can be made available and order processing can be automated up to delivery and invoicing by linking the digital spare parts catalogue to other data sources.

Up-to-date data and documents relevant for service, maintenance, repair and spare parts sale can be provided in an efficient manner, regardless of location and time. Companies also benefit from significantly easier updating of relevant data and are able to provide a wider variety of languages, which is a substantial prerequisite given the high percentage of exports in the industry. It takes the catalogue user no more than a few clicks to find the necessary information or to order spare parts. This significantly optimizes the provision of information and parts to the service staff: being equipped with the right parts, tools and information not only reduces the costs for deploying service staff but also shortens the response times in customer service. This results in significantly higher machine availability and customer satisfaction.

In this context, VDMA offers its members regular events for sharing their experiences.

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ERM Consulting	www.erm-consulting.de	SL innovativ	www.sl-i.de
GAL Digital	www.gal-digital.de	Solutiness	www.tele-look.com
Geovision	www.geovision.de	SQL Projekt	www.sql-ag.de
GS1 Germany	www.gs1-germany.de	TopM Software	www.topm.de
HEGLA-HANIC	www.hegla-hanic.de	untersee Unternehmensberatung	www.untersee.com
HEISAB	www.heisab.de	valantic Supply Chain Excellence	www.valantic.com

Stand-alone Webshop / Digital Spare Parts Catalogue / E-Commerce

3DQR	www.3dqr.de	logicline	www.logicline.de
ACBIS	www.acbis.de	MAG IAS	www.ffg-ea.com
ADAMOS	www.adamos.com	Markt-Pilot	www.markt-pilot.de
All for One Group	www.all-for-one.com	Mobile Function	www.mobile-function.com
Asseco Solutions	www.assecosolutions.com	mpunkt	www.mpunkt.com
avenit	www.avenit.de	neogramm	www.neogramm.de
CIMSOURCE	www.cimsource.com	Noxum	www.noxum.com
ClassiX Software	www.classix.de	Paradigma Software	www.paradigma-software.de
cognitas.	www.cognitas.de	Perspectix	www.perspectix.com
Configit	www.configit.com	Plan Software	www.plansoft.de
Configura	www.configura.com	proALPHA Business Solutions	www.proalpha.com
COSMO CONSULT GmbH	www.cosmoconsult.com	PROSTEP	www.prostep.com
COSMO CONSULT AG	www.cosmoconsult.com	q.beyond	www.qbeyond.de
Dassault Systemes Deutschland	www.3ds.com	Quanos Service Solutions	www.quanos-service-solutions.com
DataArt	www.dataart.com/de	SALT Solutions	www.salt-solutions.de
eEvolution	www.eevolution.de	SEEBURGER	www.seeburger.de
encoway	www.encoway.de	Siemens Industry Software	www.sw.siemens.com
ERGOSIGN	www.ergosign.de	SL innovativ	www.sl-i.de
EURO-LOG	www.eurolog.com	SMS group	www.sms-group.com/expertise/digitalization
Fischer Information Technology	www.fischer-information.com	Solutiness	www.tele-look.com
GAL Digital	www.gal-digital.de	SPARETECH	www.sparetech.io
GEA Brewery Systems	www.gea.com	SQL Projekt	www.sql-ag.de
Google Germany	www.google.de	STAR Deutschland	www.star-group.net
IBM Deutschland	www.ibm.de	Sybit	www.sybit.de
Infor (Deutschland)	www.infor.com	symmedia	www.symmedia.de
ISG	www.isg-stuttgart.de	TRUMPF	www.trumpf.com
itmX	www.itmx.de	valantic Supply Chain Excellence	www.valantic.com
kommunikationsoptimierer.de	www.kommunikationsoptimierer.de	Voith	www.voith.com
Körper	www.koerber.com	J.M. Voith/DSG Division Digital Ventures	www.voith.com
KRONES	www.krones.com	J.M. Voith/VPH	www.voithpaper.com
KUMAVISION	www.kumavision.com	VSF Experts	www.vsf-experts.de
Lino	www.lino.de		

Product independent Consulting

Abass	www.abass.de	kothes	www.kothes.com
ACBIS	www.acbis.de	logicline	www.logicline.de
alltrotec	www.alltrotec.de	Markt-Pilot	www.markt-pilot.de
ARC Solutions	www.arcsolutions.de	mpunkt	www.mpunkt.com
bridgefield	www.bridgefield.de	MQ result consulting	www.mqresult.de
Configura	www.configura.com	neogramm	www.neogramm.de
COSMO CONSULT GmbH	www.cosmoconsult.com	POWERCASE FORMULA CRM	www.formulacrm.de
daenet	www.daenet.de	PROSTEP	www.prostep.com
DataArt	www.dataart.com/de	Qualysoft	www.de.qualysoft.com
Dokus Schmiede	www.dokus Schmiede.de	SALT Solutions	www.salt-solutions.de
encoway	www.encoway.de	SERVITIZE	www.servitize.de
EPLAN	www.eplan.de	SL innovativ	www.sl-i.de
ERGOSIGN	www.ergosign.de	Syntax Systems	www.syntax.com/fit
ERM Consulting	www.erm-consulting.de	syscon	www.syscon-online.com
FAUSER	www.fauser.ag	TROVARIT	www.trovarit.com
GAL Digital	www.gal-digital.de	UNITY	www.unity.de
HEGLA-HANIC	www.hegla-hanic.de	valantic Supply Chain Excellence	www.valantic.com
IBM Deutschland	www.ibm.de	VSF Experts	www.vsf-experts.de
ITQ	www.itq.de		

Successful industry marketing – challenges and special features



Vanessa Koller

On the fiercely competitive and highly globalized B2B market, companies have to stand their ground against the competition and firmly establish themselves. Various studies indicate that more than 89 percent of B2B buyers already use the internet for research. Today it is more challenging than ever before for companies to maintain their market position, precisely because of strong competition and the ease with which to compare companies on the Internet. In our “Marketing for Software Companies” working group, you can learn by sharing with other VDMA members how you can make your company unique through strategic industry marketing.

Strategically managed marketing is indispensable for companies to get established in the B2B sector. Here many industrial companies rely on traditional, familiar communication channels. Increasing globalization not only opens up new markets and customers, but also creates new competitors against which a company has to assert itself. An industrial company that enjoys a strong, individual position has a unique impact on potential buyers. The role of industry marketing is to make the customer benefit quite clear to the market in general.

This makes it necessary for the B2B sector to increasingly operate in the digital space. As digitalization progresses and develops, it offers marketing managers a variety of possibilities, including specific provision of information and implementing data-driven marketing. Companies can use a number of online marketing instruments, such as the corporate website as the hallmark for the entire company. The website should bring together all important information, from the range of products on offer through to the corporate identity. Companies can use their website to share current topics immediately with their stakeholders. They can also provide information on how they can best be contacted. At the same time, social media marketing is today more important than ever before. Social networks have developed into important communication portals. The platforms most frequently used by medium-sized companies in Germany to achieve their own marketing targets are Facebook together with LinkedIn, Twitter and YouTube. These channels are suitable for different target groups and different content.

VDMA Software and Digitalization supports its members in choosing the right channels for their own corporate objectives. Regular exchange and interaction with other companies offers scope for sharing best practices with other VDMA members.

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Enterprise Resource Planning – advice on selection and introduction



Christoph Herr

VDMA has been supporting its members when it comes to enterprise resource planning (ERP) for more than three decades. During this time, numerous tools have been developed that provide effective assistance when searching for the right ERP solution. These tools are available to VDMA members at no cost.

Software map

Frequently it is not easy to get an overview of the software landscape that has grown in companies over the years. The VDMA software map can help here by giving a simple visual overview of the status quo and future infrastructure of the software.

Standard process description

The basis for selecting the right ERP for a company is based on having an in-depth knowledge of the company's business processes in order to stipulate the corresponding requirements for a supportive IT solution. It's not a case of abiding strictly to the standard presented by an ERP solution. Rather, what counts is ensuring that the strengths of a company can clearly be brought out in the value-added process. The VDMA method for process description makes it possible to describe the core processes of value creation within the company in a structured and comprehensive manner.

ERP reference list

References of successful ERP projects are the most important decision-making criterion when selecting an ERP system. This is why the VDMA provides its members with a sector-oriented ERP reference list. Each reference includes information about the provider, product, user companies and the number of system users. This information enables companies that are looking for a new solution to make a targeted preselection based on the experiences that other companies have had with the product.

A new ERP system won't work much better than the old one if it is fed with poor master data. It is therefore advisable to proceed with a master data project before implementing a new ERP. As a rule, expert support is necessary over a longer period of time during the selection and introduction of ERP. For this reason, the VDMA Software and Digitalization offers its members support on this topic.

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Enterprise Resource Planning (ERP)

ERP-Solution

A+W Software	www.a-w.de	ILC	www.ilc-solutions.de
abas Software	www.abas-erp.com	Infor (Deutschland)	www.infor.com
All for One Group	www.all-for-one.com	Isah	www.isah.com
alltrotec	www.alltrotec.de	KRONES	www.krones.com
ams.Solution	www.ams-erp.com	KUMAVISION	www.kumavision.com
Asseco Solutions	www.assecosolutions.com	macio	www.macio.de
ASSYST	www.assyst.de	Microsoft Deutschland	www.microsoft.com
audius	www.audius.de	MODUS Consult	www.modusconsult.de
AVISTA ERP Software	www.avista-erp.de	N+P Informationssysteme	www.nupis.de
Blauhut & Partner Informationssysteme	www.procos.de	Opdenhoff Technologie	www.opdenhoff.com
CADCABEL	www.cadcabel.com	ORBIS	www.orbis.de
CATUNO	www.catuno.de	oxaion	www.oxaion.de
ClassiX Software	www.classix.de	PIKON Deutschland	www.pikon.com
COSMO CONSULT GmbH	www.cosmoconsult.com	proALPHA Business Solutions	www.proalpha.com
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DPS Software	www.dps-software.de	Sage	www.sage.de
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EVO Informationssysteme	www.evo-solutions.com	SAP Deutschland	www.sap.com/germany
evon	www.evon-automation.com	Schneider Electric	www.schneider-electric.de
FAUSER	www.fausser.ag	schrempp edv	www.schrempp-edv.de
Geovision	www.geovision.de	Schubert & Salzer Data	www.schubert-salzer.com
GODYO Business Solutions	www.godyo.com	SL innovativ	www.sl-i.de
HALO-electronic	www.inteos.com	SQL Projekt	www.sql-ag.de
HEGLA-HANIC	www.hegla-hanic.de	Syntax Systems	www.syntax.com/fit
HEISAB	www.heisab.de	TopM Software	www.topm.de
Hexagon DEU02	www.hexagonmi.com/de-DE	TRUMPF	www.trumpf.com
IFS Deutschland	www.ifs.com/de	untersee Unternehmensberatung	www.untersee.com

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ARC Solutions	www.arcsolutions.de	Magic Software Enterprises	www.magicsoftware.com
bridgefield	www.bridgefield.de	MQ result consulting	www.mqresult.de
Centigrade	www.centigrade.de	Opdenhoff Technologie	www.opdenhoff.com
COSMO CONSULT GmbH	www.cosmoconsult.com	ORBIS	www.orbis.de
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ecosio	www.ecosio.com	syscon	www.syscon-online.com
EPLAN	www.eplan.de	Tebis Technische Informationssysteme	www.tebis.com
esentri	www.esentri.com	TROVARIT	www.trovarit.com
GODYO Business Solutions	www.godyo.com	UNITY	www.unity.de
HEGLA-HANIC	www.hegla-hanic.de	valantic Supply Chain Excellence	www.valantic.com
IBM Deutschland	www.ibm.de	znt	www.znt-richter.com
ILC	www.ilc-solutions.de		

Smart Data – Turning data into gold



Thomas Riegler

The buzzword big data refers to more than just large quantities of data. But big data is too complex, too short-lived or its structure too weak to evaluate it with conventional data processing methods. In fact, data users have to filter the data and process it intelligently. Only then is big data turned into valuable smart data. Companies can use this data, for example, to optimize logistics and production processes. When they know how to make use of the potential offered by large quantities of data and how to translate big data into smart data, companies are then able to develop new business models.

Digitalization in production facilities means that companies interconnect their machines, logistics systems and products. They do this to reduce costs, become more competitive and shorten their lead times. Companies are looking to identify and prevent disruptions and production losses at an early point in the process by analyzing the data collected by sensors and control systems. Smart data analysis lets companies identify optimization potential in production as well as in marketing, engineering and service. The challenge of translating big data into smart data lies in evaluating the steadily growing flood of data and turning it into intelligent information, so that companies can proceed with beneficial and profitable evaluations.

Image transformation

It's not difficult to imagine a time when the engineering sector sells the production capacity of its plants rather than the machines themselves. This idea is based on a pay-per-use business model. It is crucial for manufacturers to collect and evaluate all plant data in order to react promptly to failures or downtimes. This is the only way to ensure optimum, efficient operation of machines at different sites. The data paves the way for mechanical and plant engineering companies to tap innovative and successful business fields through the use of analytical processes.

Prioritizing data security

But companies must always focus on data security. The more devices and plants that are connected, the more important the topic of security becomes. Hackers may steal important production data or upload malware, thus causing production downtimes and machine failure. Investments in smart data are often quite expensive, and the return on investment is not always measurable. However, companies in the engineering sector do not want to invest just so that they can merely go with the flow: the investment also needs to be worthwhile.

VDMA supports its members in the face of these challenges with network events, publications and advice.

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Business Intelligence (BI) / Big Data Analytics

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ams.Solution	www.ams-erp.com	Infor (Deutschland)	www.infor.com
Asseco Solutions	www.assecosolutions.com	Isah	www.isah.com
ASSYST	www.assyst.de	IT Vision Technology	www.itvt.de
audius	www.audius.de	iTAC Software	www.itac.de
AVISTA ERP Software	www.avista-erp.de	itmX	www.itmx.de
BCT Technology	www.bct-technology.com	Jungheinrich	www.jungheinrich.de
Blauhut & Partner Informationssysteme	www.procos.de	KRONES	www.krones.com
CAS Software	www.cas.de	KUMAVISION	www.kumavision.com
CATUNO	www.catuno.de	Membrain	www.membrain-it.com
CIMSOURCE	www.cimsources.com	Microsoft Deutschland	www.microsoft.com
ClassiX Software	www.classix.de	Mobile Function	www.mobile-function.com
COSMO CONSULT GmbH	www.cosmoconsult.com	MODUS Consult	www.modusconsult.de
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CSS	www.css.de	ORBIS	www.orbis.de
datura manufacturing	www.swissdynamics.net	PIKON Deutschland	www.pikon.com
DOCIFY	www.docufy.de	POWERCASE FORMULA CRM	www.formulacrm.de
DPS Software	www.dps-software.de	proALPHA Business Solutions	www.proalpha.com
eEvolution	www.eevolution.de	PSI Software	www.psi.de
Empolis Information Management	www.service.express	q.beyond	www.qbeyond.de
EPLAN	www.eplan.de	Sage	www.sage.de
ERM Consulting	www.erm-consulting.de	SALT Solutions	www.salt-solutions.de
EVO Informationssysteme	www.evo-solutions.com	SAP Deutschland	www.sap.com/germany
evon	www.evon-automation.com	schrempp edv	www.schrempp-edv.de
FAUSER	www.fauser.ag	SETEX Schermuly textile computer	www.setex-germany.com
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HEISAB	www.heisab.de	znt	www.znt-richter.com

Stand-alone Business Intelligence Solution

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ams.Solution	www.ams-erp.com	ICONICS Germany	www.iconics.com
AZO	www.azo.com	Industrie Informatik	www.industrieminformatik.com
becos	www.becos.de	INDUTRAX	www.indutrax.net
BEUMER Maschinenfabrik	www.beumergroup.com	INFORM	www.felios.de
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Dassault Systemes Deutschland	www.3ds.com	Mobile Function	www.mobile-function.com
DMG MORI Digital	www.werkbliq.de	MODUS Consult	www.modusconsult.de
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Eckelmann FCS	www.eckelmann.de	Point 8	www.point-8.de
Empolis Information Management	www.service.express	ProLeIT	www.proleit.de
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eoda	www.eoda.de	PSI Technics	www.psi-technics.com
esentri	www.esentri.com	q.beyond	www.qbeyond.de
FAUSER	www.fauser.ag	Rockwell Automation Solutions	www.rockwellautomation.com
Google Germany	www.google.de	SALT Solutions	www.salt-solutions.de
GTT	www.gtt-online.de	SAP Deutschland	www.sap.com/germany
HALO-electronic	www.inteos.com	Schneider Electric Systems Germany	www.se.com/de/de

Stand-alone Business Intelligence Solution

SMS group	www.sms-group.com/expertise/digitalization	syscon	www.syscon-online.com
Soley	www.soley.io	talpasolutions	www.talpasolutions.com
		USU Software	www.usu.com

Stand-alone Big Data Analytics Solution

ams.Solution	www.ams-erp.com	Microsoft Deutschland	www.microsoft.com
AZO	www.azo.com	Mobile Function	www.mobile-function.com
Balluff	www.balluff.com	mpunkt	www.mpunkt.com
Beckhoff Automation	www.beckhoff.com	PIKON Deutschland	www.pikon.com
BEUMER Maschinenfabrik	www.beumergroup.com	Point 8	www.point-8.de
CIPA	www.openpack.net	ProLeiT	www.proleit.de
COMAN Software	www.coman-software.com	PSI Software	www.psi.de
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COSMO CONSULT GmbH	www.cosmoconsult.com	q.beyond	www.qbeyond.de
COSMO CONSULT AG	www.cosmoconsult.com	relayr	www.relayr.io/de
daenet	www.daenet.de	Rockwell Automation Solutions	www.rockwellautomation.com
DataVision	www.datavision.software	Rockwell Automation	www.rockwellautomation.com
DOCUFY	www.docufy.de	SALT Solutions	www.salt-solutions.de
Eckelmann	www.eckelmann.de	SAP Deutschland	www.sap.com/germany
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Empolis Information Management	www.service.express		
eoda	www.eoda.de	Software Factory	www.sf.com
EPLAN	www.eplan.de	SQL Projekt	www.sql-ag.de
Fischer Information Technology	www.fischer-information.com	symmedia	www.symmedia.de
gbo datacomp	www.gbo-datacomp.de	syscon	www.syscon-online.com
Google Germany	www.google.de	talpasolutions	www.talpasolutions.com
IBM Deutschland	www.ibm.de	The MathWorks	www.mathworks.com
ICONICS Germany	www.iconics.com	USU Software	www.usu.com
IFS Deutschland	www.ifs.com/de	Voith	www.voith.com
Industrie Informatik	www.industrieminformatik.com	J.M. Voith/DSG Division Digital Ventures	www.voith.com
INFORM	www.felios.de	Werum IT Solutions	www.koerber-pharma.com
INNEO Solutions	www.inneo.com	WITTENSTEIN	www.wittenstein.de
KOCH Pac-Systeme	www.koch-pac-systeme.com	XITASO	www.xitaso.com
MAG IAS	www.ffg-ea.com	Zühlke Engineering	www.zuehlke.com
Membrain	www.membrain-it.com		

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bridgefield	www.bridgefield.de	ProLeiT	www.proleit.de
Centigrade	www.centigrade.de	PROSTEP	www.prostep.com
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daenet	www.daenet.de	PSI Technics	www.psi-technics.com
DataArt	www.dataart.com/de	q.beyond	www.qbeyond.de
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esentri	www.esentri.com	SMS group	www.sms-group.com/expertise/digitalization
GFT Technologies	www.gft.com/de/de/index	Software Factory	www.sf.com
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INFORM	www.felios.de	TROVARIT	www.trovarit.com
INNEO Solutions	www.inneo.com	UNITY	www.unity.de
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M&M Software	www.mm-software.com	znt	www.znt-richter.com
macio	www.macio.de	Zühlke Engineering	www.zuehlke.com
MQ result consulting	www.mqresult.de		
ORBIS	www.orbis.de		

Manufacturing Execution Systems – optimized production control



Christoph Herr

Fiercer competition on the international stage demands continuous optimization of the value creation processes. MES solutions are important tools in this context for implementing operational Industry 4.0 scenarios.

Going over and beyond IT-based planning tools (ERP, APS), MES solutions offer the possibility of monitoring and controlling the production processes in a company, using connectivity down to the sensor level for direct communication between the production level and the control level. MES is the data hub that saves, analyzes and interprets process data from production and assembly. In operative terms, warnings are displayed and optimized solution scenarios offered or automated processes triggered. This creates efficient connection between the planning systems and the production level for overall transparency and process control. In particular, MES supports the following corporate processes:

- Production planning and control
- Operating resources management
- Materials management
- HR management
- Data acquisition
- Performance analysis
- Quality management
- Information management
- Order management
- Energy management

VDMA has been working on the topic of MES solutions for well over a decade and provides support, consultation and network events for companies that are planning to implement such a system.

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Manufacturing Execution System (MES) / Production Control Centre / Production Data Acquisition (PDA) / Machine Data Acquisition (MDA)

Part of ERP

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GODYO Business Solutions	www.godyo.com	Schubert & Salzer Data	www.schubert-salzer.com
GS1 Germany	www.gs1-germany.de	Solutiness	www.tele-look.com
HEGLA-HANIC	www.hegla-hanic.de	SQL Projekt	www.sql-ag.de
HEISAB	www.heisab.de	Syntax Systems	www.syntax.com/fit
HEITEC	www.heitec.de	TopM Software	www.topm.de
IFS Deutschland	www.ifs.com/de	Trebing & Himstedt Prozessautomation	www.t-h.de
Isah	www.isah.com	untersee Unternehmensberatung	www.untersee.com
Körber	www.koerber.com	XITASO	www.xitaso.com

Stand-alone MES Software

ACAM Engineering	www.acam.at	LF CONSULT	www.lfconsult.de
All for One Group	www.all-for-one.com	Magic Software Enterprises	www.magicsoftware.com
ams.Solution	www.ams-erp.com	Miprotek	www.miprotek.de
ARC Solutions	www.arcsolutions.de	MODUS Consult	www.modusconsult.de
AZO	www.azo.com	MPDV Mikrolab	www.mpdv.com/de
becos	www.becos.de	N+P Informationssysteme	www.nupis.de
Carl Zeiss MES Solutions	www.guardus-mes.de	neogramm	www.neogramm.de
ClassiX Software	www.classix.de	Opdenhoff Technologie	www.opdenhoff.com
COMAN Software	www.coman-software.com	ORBIS	www.orbis.de
datura manufacturing	www.swissdynamics.net	proALPHA Business Solutions	www.proalpha.com
DMG MORI Digital	www.werkbliq.de	ProLeiT	www.proleit.de
Dürr Aktiengesellschaft	www.durr.com	PROXIA Software	www.proxia.com
Eckelmann	www.eckelmann.de	PSI Software	www.psi.de
Eckelmann FCS	www.eckelmann.de	Rockwell Automation Solutions	www.rockwellautomation.com
EPLAN	www.eplan.de	Rockwell Automation	www.rockwellautomation.com
EVO Informationssysteme	www.evo-solutions.com	RTE Akustik + Prüftechnik	www.rte.de
evon	www.evon-automation.com	SALT Solutions	www.salt-solutions.de
FAUSER	www.fausser.ag	SAP Deutschland	www.sap.com/germany
FORCAM	www.forcam.com	Schneider Electric	www.schneider-electric.de
gbo datacomp	www.gbo-datacomp.de	Sedo Treepoint	www.sedo-treepoint.com
GEA Brewery Systems	www.gea.com	SETEX Schermuly textile computer	www.setex-germany.com
Geovision	www.geovision.de	Siemens Industry Software	www.sw.siemens.com
GFOS	www.gfos.com	SMS group	www.sms-group.com/expertise/digitalization
GTT	www.gtt-online.de	Software Factory	www.sf.com
HALO-electronic	www.inteos.com	Syntax Systems	www.syntax.com/fit
HEGLA-HANIC	www.hegla-hanic.de	Talpasolutions	www.talpasolutions.com
HEISAB	www.heisab.de	Tebis Technische Informationssysteme	www.tebis.com
IBODigital	www.ibodigital.com	Thyssenkrupp Materials IoT	www.thyssenkrupp-materials-iot.com
ICONICS Germany	www.iconics.com	Trebing & Himstedt Prozessautomation	www.t-h.de
Industrie Informatik	www.industrieinformatik.com	TRUMPF	www.trumpf.com
Industrie Reply	www.reply.com	untersee Unternehmensberatung	www.untersee.com
INFORM	www.felios.de	valantic Supply Chain Excellence	www.valantic.com
INNEO Solutions	www.inneo.com	Werum IT Solutions	www.koerber-pharma.com
iTAC Software	www.itac.de	znt	www.znt-richter.com
Körper	www.koerber.com		
KRONES	www.krones.com		

Stand-alone PDA / MDA Software

ACAM Engineering	www.acam.at	evon	www.evon-automation.com
accelcon industrial engineering	www.accelcon.de	FAUSER	www.fausser.ag
All for One Group	www.all-for-one.com	FORCAM	www.forcam.com
alltrotec	www.alltrotec.de	gbo datacomp	www.gbo-datacomp.de
ams.Solution	www.ams-erp.com	GEA Brewery Systems	www.gea.com
AZO	www.azo.com	Geovision	www.geovision.de
B&R Industrie-Elektronik	www.br-automation.com	GFOS	www.gfos.com
becos	www.becos.de	GFT Technologies	www.gft.com/de/de/index
bridgefield	www.bridgefield.de	GTT	www.gtt-online.de
ClassiX Software	www.classix.de	HALO-electronic	www.inteos.com
compacer	www.compacer.com	HEGLA-HANIC	www.hegla-hanic.de
COSMO CONSULT GmbH	www.cosmoconsult.com	HEISAB	www.heisab.de
COSMO CONSULT AG	www.cosmoconsult.com	ICONICS Germany	www.iconics.com
Dassault Systemes Deutschland	www.3ds.com	in-tech	www.in-tech.com
datura manufacturing	www.swissdynamics.net	Industrie Informatik	www.industrieinformatik.com
DIENES Apparatebau	www.dienes.net	Infor (Deutschland)	www.infor.com
Eckelmann	www.eckelmann.de	INFORM	www.felios.de
Eckelmann FCS	www.eckelmann.de	INNEO Solutions	www.inneo.com
elunic	www.elunic.com/de	iT Engineering Software Innovations	www.ite-si.de
EVO Informationssysteme	www.evo-solutions.com	iTAC Software	www.itac.de

Stand-alone PDA / MDA Software

Jungheinrich	www.jungheinrich.de	S & P Computersysteme	www.sup-logistik.de
Kinexon Industries	www.kinexon-industries.com	SALT Solutions	www.salt-solutions.de
konzeptpark	www.konzeptpark.de	Schneider Electric Systems Germany	www.se.com/de/de
Körber	www.koerber.com	Schneider Electric	www.schneider-electric.de
KRONES	www.krones.com	Sedo Treepoint	www.sedo-treepoint.com
KUMAVISION	www.kumavision.com	SETEX Schermuly textile computer	www.setex-germany.com
LF CONSULT	www.lfconsult.de	Siemens Industry Software	www.sw.siemens.com
logicline	www.logicline.de	SMS group	www.sms-group.com/expertise/digitalization
macio	www.macio.de	Software Factory	www.sf.com
Magic Software Enterprises	www.magicsoftware.com	symmedia	www.symmedia.de
Mobile Function	www.mobile-function.com	Syntax Systems	www.syntax.com/fit
MPDV Mikrolab	www.mpdv.com/de	talpasolutions	www.talpasolutions.com
neogramm	www.neogramm.de	Tebis Technische Informationssysteme	www.tebis.com
Odego	www.odego.de	Thyssenkrupp Materials IoT	www.thyssenkrupp-materials-iot.com
Opdenhoff Technologie	www.opdenhoff.com	Trebing & Himstedt Prozessautomation	www.t-h.de
Optima packaging group	www.optima-packaging.com	TRUMPF	www.trumpf.com
ORBIS	www.orbis.de	VÖLKEL Mikroelektronik	www.voelkel.de
Peakboard	www.peakboard.com	Voith	www.voith.com
proALPHA Business Solutions	www.proalpha.com	J.M. Voith/DSG Division Digital Ventures	www.voith.com
ProLeiT	www.proleit.de	Weidmüller GTI Software	www.gti.de
PROXIA Software	www.proxia.com	XITASO	www.xitaso.com
PSI Software	www.psi.de	znt	www.znt-richter.com
Rockwell Automation Solutions	www.rockwellautomation.com		
Rockwell Automation	www.rockwellautomation.com		

Product independent Consulting

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accelcon industrial engineering	www.accelcon.de	NewTec	www.newtec.de
ARC Solutions	www.arcsolutions.de	Opdenhoff Technologie	www.opdenhoff.com
AZO	www.azo.com	OPTIMUM datamanagement solutions	www.optimum-gmbh.de
bridgefield	www.bridgefield.de	Perfect Production	www.perfect-production.de
Centigrade	www.centigrade.de	ProLeiT	www.proleit.de
DataArt	www.dataart.com/de	PROXIA Software	www.proxia.com
DUALIS	www.dualis-it.de	q.beyond	www.qbeyond.de
eoda	www.eoda.de	REINHOLZ Software & Technology	www.reinholz-sat.de
EPLAN	www.eplan.de	SALT Solutions	www.salt-solutions.de
esentri	www.esentri.com	SMS group	www.sms-group.com/expertise/digitalization
gbo datacomp	www.gbo-datacomp.de	Software Factory	www.sf.com
GFT Technologies	www.gft.com/de/de/index	syscon	www.syscon-online.com
HEGLA-HANIC	www.hegla-hanic.de	talpasolutions	www.talpasolutions.com
HEITEC	www.heitec.de	Tebis Technische Informationssysteme	www.tebis.com
IBM Deutschland	www.ibm.de	Techniciency Consulting	www.techniciency.de
iTAC Software	www.itac.de	TROVARIT	www.trovarit.com
J&M Business Consulting	www.jmbc.io	UNITY	www.unity.de
Janz Tec	www.janztec.com	valantic Supply Chain Excellence	www.valantic.com
Körber	www.koerber.com	Werum IT Solutions	www.koerber-pharma.com
logicline	www.logicline.de	XITASO	www.xitaso.com
macio	www.macio.de	Your Expert Cluster	www.youexpertcluster.de
Magic Software Enterprises	www.magicsoftware.com	znt	www.znt-richter.com
MPDV Mikrolab	www.mpdv.com/de		
MQ result consulting	www.mqresult.de		

Creating general conditions for the future



Kai Kalusa

Whether Germany as an industrial nation can make digitalization and Industry 4.0 its business model depends not only on the companies. Important general conditions must be created together with politics, science, associations and society. To this end, the VDMA Software and Digitalization also is available for its members in Berlin.

Current developments show that digitalization is becoming more significant politically. Both the German Federal Government and the European Union (EU) have recognised the importance of issues such as digital sovereignty, artificial intelligence and block chain and have developed political strategies to address them. The VDMA Software and Digitalization is active in the central networks for national and international activities related to digitalization. Together with other stakeholders from industry, associations and science, it is committed to representing the position of its members, to developing recommendations on content and to promoting international networking.

Political interests are pursued in close coordination between the colleagues in Frankfurt, the capital city office in Berlin and the European Office in Brussels. The VDMA Software and Digitalization sees itself as a driving force, which, in conjunction with its members, has a high level of expertise in digital issues. This gives the association a leading role, which is demonstrated by its representation in committees such as the Plattform Industrie 4.0 and the workstreams of Gaia-X.

Several strategically important topics are currently in the political debate that will be trend-setting for industry in Germany. These include, in particular, a data strategy under which other digital topics will be brought together. The VDMA Software and Digitalization supports its members in getting involved in the political debate, it bundles common positions and finds the right channels into politics. We are happy to be available for exchange in this sense, please contact us.

VDMA Offers

- The VDMA Software and Digitalization represents the interests of its members in federal and EU digital policy from its Berlin office
- The „Brief Positions“ and press releases of the VDMA Software and Digitalization offer compact statements on current issues
- The position papers of the VDMA Software and Digitalization provide detailed approaches to solutions and policy recommendations
- The VDMA Software and Digitalization represents the interests of its members in various committees of economy, politics and science, among others in the platform Industry 4.0 as well as in the workstreams for Gaia-X.

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Blockchain technology has the potential to change business models sustainably



Kai Kalusa

Blockchain technology is ideally qualified to address challenges in numerous application scenarios. In the industrial environment, this includes in particular networked Industry 4.0, which has the potential to replace central platforms and establish automated, cross-organizational, and trustworthy workflows.

Industry 4.0 means the complete digitalization and automation of production processes. A prerequisite for this is that there is trust within the network in a clearly traceable handling of delivery, production and financial transactions. Possible use cases relate, for example, to automated order processing between machines, supply chain management and the logging of data and rights.

In this way, blockchain creates trust between the actors, as it is able to transparently document and prove measured values, material qualities, product properties, etc. for all authorized parties. This means that blockchain can also be used to detect and rectify possible errors in good time.

By using blockchain, the entire production process can be traced and, for example, high repair costs in after-sales service can be avoided. The data is always available in a decentralized manner in the blockchain and can be continuously shared and reconciled with each other. However, the technology also has the potential to change business models in the future. For example, payment transactions can be automated using blockchain technology and pay-per-use models can thus be digitized to the end. In this way, usage-based billing for the use of machines will be possible in the future without any paperwork and personnel costs.

Support from VDMA

Companies often still have a lack of concrete knowledge and starting points in practice for the development and implementation of blockchain use cases. The VDMA supports its members by offering digital formats in which companies are provided with, among other things, evaluation criteria for when a blockchain implementation may be worthwhile. Furthermore, VDMA promotes the exchange of use cases that can serve as an impetus for a broader blockchain deployment.

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Variant management



Thomas Riegler

The major challenges facing Germany's engineering industry include globalization, increasingly dynamic markets and individual customer wishes. Those who want to succeed on the global market need to meet market demands with products that are characterized by competitive prices and technology.

The changing market situation and the transformation of corporate structures over the last decade has forced companies to bolster their innovative strength. The new buzzword is customer-orientation, which means that product variants are now tailored to the customers' specific needs. The increasingly complex product structures go hand in hand with a rise in costs, making it more and more difficult for companies to manage complexity.

For this reason, managing product diversity and product costs has become one of the most important tasks for engineering companies. Measures for reducing and managing product and process complexity are summarized under the term "variant management". Both companies with serial production and those making customer-specific, unique products, such as those needed in plant engineering, face the challenge of introducing an effective variant management system. More often, the former are required to provide systematic product variants on the market, while plant engineering companies need to reduce the costs caused by modular product concepts.

VDMA supports know-how transfer to variant management for its member companies with numerous central and regional events. Our expertise is at your disposal if you have any questions.

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Variant Management

Part of ERP, CRM ...

A+W Software	www.a-w.de	Isah	www.isah.com
abas Software	www.abas-erp.com	itmX	www.itmx.de
ACBIS	www.acbis.de	kothes	www.kothes.com
All for One Group	www.all-for-one.com	KRONES	www.krones.com
alltrotec	www.alltrotec.de	KUMAVISION	www.kumavision.com
ams.Solution	www.ams-erp.com	Lino	www.lino.de
ARC Solutions	www.arcsolutions.de	Mobile Function	www.mobile-function.com
Asseco Solutions	www.assecosolutions.com	MODUS Consult	www.modusconsult.de
ASSYST	www.assyst.de	N+P Informationssysteme	www.nupis.de
audius	www.audius.de	Opdenhoff Technologie	www.opdenhoff.com
AVISTA ERP Software	www.avista-erp.de	ORBIS	www.orbis.de
BCT Technology	www.bct-technology.com	ORISA Software	www.orisa.de
CAS Software	www.cas.de	oxaion	www.oxaion.de
CATUNO	www.catuno.de	Perspectix	www.perspectix.com
ClassiX Software	www.classix.de	PIKON Deutschland	www.pikon.com
Configit	www.configit.com	POWERCASE FORMULA CRM	www.formulacrm.de
Configura	www.configura.com	proALPHA Business Solutions	www.proalpha.com
COSMO CONSULT GmbH	www.cosmoconsult.com	PSI Software	www.psi.de
COSMO CONSULT AG	www.cosmoconsult.com	q.beyond	www.qbeyond.de
datura manufacturing	www.swissdynamics.net	Sage	www.sage.de
DLP Engineers	www.dlp-engineers.de	SAP Deutschland	www.sap.com/germany
DOCUFY	www.docufy.de	schrempp edv	www.schrempp-edv.de
DPS Software	www.dps-software.de	Schubert & Salzer Data	www.schubert-salzer.com
DSC Software	www.dscsag.com	SETEX Schermuly textile computer	www.setex-germany.com
eEvolution	www.eevolution.de	Solutiness	www.tele-look.com
Empolis Information Management	www.service.express	SQL Projekt	www.sql-ag.de
ERM Consulting	www.erm-consulting.de	Sybit	www.sybit.de
FAUSER	www.fauser.ag	Syntax Systems	www.syntax.com/fit
GODYO Business Solutions	www.godyo.com	TopM Software	www.topm.de
HEGLA-HANIC	www.hegla-hanic.de	untersee Unternehmensberatung	www.untersee.com
HEISAB	www.heisab.de	viastore SOFTWARE	www.viastoresoftware.com
IFS Deutschland	www.ifs.com/de	znt	www.znt-richter.com
ILC	www.ilc-solutions.de	Zuken E3	www.zuken.com
Infor (Deutschland)	www.infor.com		

Stand-alone Variant Management / Configure Price Quote

3D Interaction Technologies	www.3dit.de	Fischer Information Technology	www.fischer-information.com
abilis	www.abilis.de	GAL Digital	www.gal-digital.de
ACATEC Software	www.acatec.de	ID-Consult	www.id-consult.com
ACBIS	www.acbis.de	ILC	www.ilc-solutions.de
ams.Solution	www.ams-erp.com	INNEO Solutions	www.inneo.com
ARC Solutions	www.arcsolutions.de	ISAP	www.isap.de
Bosch Rexroth	www.boschrexroth.com/de/de	JAWA Management Software	www.jawa.at
bridgefield	www.bridgefield.de	Lino	www.lino.de
camos Software und Beratung	www.camos.de	Mobile Function	www.mobile-function.com
CAS Software	www.cas.de	ORBIS	www.orbis.de
ClassiX Software	www.classix.de	ORISA Software	www.orisa.de
Configit	www.configit.com	Perspectix	www.perspectix.com
Configura	www.configura.com	PIKON Deutschland	www.pikon.com
COSMO CONSULT GmbH	www.cosmoconsult.com	Plan Software	www.plansoft.de
COSMO CONSULT AG	www.cosmoconsult.com	PLANWARE Beratung & Software	www.planware.de
Dassault Systemes Deutschland	www.3ds.com	SAE Applications for Digitalization	www.sae-portal.de
DLP Engineers	www.dlp-engineers.de	Siemens Industry Software	www.sw.siemens.com
EAS	www.eas-solutions.de	Sofon Deutschland	www.sofon.com
Elabo	www.elabo.de	Software Factory	www.sf.com
Empolis Information Management	www.service.express	Soley	www.soley.io
encoway	www.encoway.de	Solutiness	www.tele-look.com

Stand-alone Variant Management / Configure Price Quote

Sybit	www.sybit.de	Zuken E3	www.zuken.com
TRUMPF	www.trumpf.com		

Product independent Consulting

ACBIS	www.acbis.de	NTI Kailer	www.nti.biz/de
accelcon industrial engineering	www.accelcon.de	Opdenhoff Technologie	www.opdenhoff.com
ARC Solutions	www.arcsolutions.de	OPTIMUM datamanagement solutions	www.optimum-gmbh.de
bridgefield	www.bridgefield.de	PIKON Deutschland	www.pikon.com
Centigrade	www.centigrade.de	POWERCASE FORMULA CRM	www.formulacrm.de
Configura	www.configura.com	ProLeiT	www.proleit.de
COSMO CONSULT GmbH	www.cosmoconsult.com	PROSTEP	www.prostep.com
DataArt	www.dataart.com/de	Qualysoft	www.de.qualysoft.com
DLP Engineers	www.dlp-engineers.de	SL innovativ	www.sl-i.de
Dokus Schmiede	www.dokus Schmiede.de	Sofon Deutschland	www.sofon.com
encoway	www.encoway.de	Software Factory	www.sf.com
eoda	www.eoda.de	syscon	www.syscon-online.com
EPLAN	www.eplan.de	Tebis Technische Informationssysteme	www.tebis.com
ERM Consulting	www.erm-consulting.de	Techniciency Consulting	www.techniciency.de
HEGLA-HANIC	www.hegla-hanic.de	TROVARIT	www.trovarit.com
ILC	www.ilc-solutions.de	UNITY	www.unity.de
J&M Business Consulting	www.jmbc.io	VSF Experts	www.vsf-experts.de
Lino	www.lino.de	Your Expert Cluster	www.youexpertcluster.de
MQ result consulting	www.mqresult.de	znt	www.znt-richter.com

Driving digitalization in logistics



Florian Klein

In recent years, new developments and products focusing on digitalization and Industrie 4.0 have been launched on the market. However, in terms of practical engineering applications, these developments and products are not yet widely used. This situation becomes apparent in current logistics processes. How can this be changed?

Digitalization of the logistics processes must be adapted step by step. Industrie 4.0 will not work without corresponding improvements in logistics processes that support internal production and serve as the direct external link to the customer. The development of efficient value chains within the company serves to standardize processes, making these independent of other influencing factors such as time or persons. Standardization is thus a central cornerstone for the digitalization of company-related processes.

Demand for “smart logistics”

Trends such as personalized, individual products with batch size 1 demand new solutions in intralogistics. Traditional storage and logistics concepts no longer offer sufficient capacity to cope with the complex, swiftly changing product diversity. The skills shortage makes the situation even more challenging. There is a demand for scalable, autonomous, flexible systems so that the flow of materials can be optimized and also automated with logistics robots.

Great significance of data quality

When the logistics process is freed from all inefficient elements, the next step is to select the suitable digital tool and connect it to the other processes. But this does not mean that logistics employees always need “smart assistants” such as smartphones or tablets. Handheld scanners, for example, have the same effect when it comes to collecting data promptly in a first step so it can be transferred to existing IT systems. Additional equipment such as scales or 3D scanners can also significantly increase data quality in the process, for example by comparing actual values such as weight, dimensions, temperature, etc. with the target values in the system and adapting these values, or by recording status information. The preparation of automated processes, in which the product becomes the key player and controls the entire logistics process, requires high-quality data, transparency and standardization.

VDMA supports and informs its members with questions about logistics by organizing events and working groups. Here, members have an opportunity for sharing experience and insights as well as discussing current trends and developments.

VDMA contact

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Warehouse Logistics / Production Logistics / Supply Chain Management (SCM)

Part of ERP

A+W Software	www.a-w.de	IPKS	www.ipks.de
abas Software	www.abas-erp.com	Isah	www.isah.com
abilis	www.abilis.de	Jungheinrich	www.jungheinrich.de
All for One Group	www.all-for-one.com	Kinexon Industries	www.kinexon-industries.com
alltrotec	www.alltrotec.de	Körber	www.koerber.com
Asseco Solutions	www.assecosolutions.com	KRONES	www.krones.com
ASSYST	www.assyst.de	KUMAVISION	www.kumavision.com
audius	www.audius.de	Membrain	www.membrain-it.com
Blauhut & Partner Informationssysteme	www.procos.de	Microsoft Deutschland	www.microsoft.com
CATUNO	www.catuno.de	Mobile Function	www.mobile-function.com
ClassiX Software	www.classix.de	MODUS Consult	www.modusconsult.de
Configura	www.configura.com	N+P Informationssysteme	www.nupis.de
COSMO CONSULT GmbH	www.cosmoconsult.com	ORBIS	www.orbis.de
COSMO CONSULT AG	www.cosmoconsult.com	oxaion	www.oxaion.de
datura manufacturing	www.swissdynamics.net	PIKON Deutschland	www.pikon.com
Dematic	www.dematic.com	proALPHA Business Solutions	www.proalpha.com
DPS Software	www.dps-software.de	PSI Software	www.psi.de
eEvolution	www.eevolution.de	q.beyond	www.qbeyond.de
EVO Informationssysteme	www.evo-solutions.com	Rockwell Automation	www.rockwellautomation.com
evon	www.evon-automation.com	Sage	www.sage.de
FAUSER	www.fauser.ag	SALT Solutions	www.salt-solutions.de
Geovision	www.geovision.de	SAP Deutschland	www.sap.com/germany
GODYO Business Solutions	www.godyo.com	schrempp edv	www.schrempp-edv.de
GS1 Germany	www.gs1-germany.de	Schubert & Salzer Data	www.schubert-salzer.com
HEGLA-HANIC	www.hegla-hanic.de	SQL Projekt	www.sql-ag.de
HEISAB	www.heisab.de	Syntax Systems	www.syntax.com/fit
HEITEC	www.heitec.de	TopM Software	www.topm.de
IFS Deutschland	www.ifs.com/de	untersee Unternehmensberatung	www.untersee.com
Infor (Deutschland)	www.infor.com	znt	www.znt-richter.com

Stand-alone Warehouse Management Solution

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Blauhut & Partner Informationssysteme	www.procos.de	Kinexon Industries	www.kinexon-industries.com
ClassiX Software	www.classix.de	Körber	www.koerber.com
Dassault Systemes Deutschland	www.3ds.com	KRONES	www.krones.com
DataArt	www.dataart.com/de	MINDA Industrieanlagen	www.minda.com/de
Dematic	www.dematic.com	PSI Software	www.psi.de
Dürr Aktiengesellschaft	www.durr.com	q.beyond	www.qbeyond.de
Eckelmann	www.eckelmann.de	S & P Computersysteme	www.sup-logistik.de
Eckelmann FCS	www.eckelmann.de	SALT Solutions	www.salt-solutions.de
GFOS	www.gfos.com	SAP Deutschland	www.sap.com/germany
Google Germany	www.google.de	Schneider Electric Systems Germany	www.se.com/de/de
HALO-electronic	www.inteos.com	SMS group	www.sms-group.com/expertise/digitalization
HEGLA-HANIC	www.hegla-hanic.de	Thyssenkrupp Materials IoT	www.thyssenkrupp-materials-iot.com
HEISAB	www.heisab.de	toolbox	www.toolbox-software.com
IBM Deutschland	www.ibm.de	viastore SOFTWARE	www.viastoresoftware.com
Industrie Informatik	www.industrieminformatik.com	viastore SYSTEMS	www.viastore.de
Industrie Reply	www.reply.com		
INDUTRAX	www.indutrax.net		

Stand-alone advanced Planning and Scheduling (APS)- / SCM Solution

All for One Group	www.all-for-one.com	IPKS	www.ipks.de
Asprova	www.asprova.eu	iTAC Software	www.itac.de
bridgefield	www.bridgefield.de	Kinexon Industries	www.kinexon-industries.com
ClassiX Software	www.classix.de	Körber	www.koerber.com
compacer	www.compacer.com	KRONES	www.krones.com
Configura	www.configura.com	LF CONSULT	www.lfconsult.de
COSMO CONSULT GmbH	www.cosmoconsult.com	Membrain	www.membrain-it.com
COSMO CONSULT AG	www.cosmoconsult.com	MPDV Mikrolab	www.mpdv.com/de
Dassault Systemes Deutschland	www.3ds.com	ORBIS	www.orbis.de
DataVision	www.datavision.software	PIKON Deutschland	www.pikon.com
Dematic	www.dematic.com	PROXIA Software	www.proxia.com
Dürr Aktiengesellschaft	www.durr.com	PSI Software	www.psi.de
Eckelmann	www.eckelmann.de	q.beyond	www.qbeyond.de
Eckelmann FCS	www.eckelmann.de	SALT Solutions	www.salt-solutions.de
EURO-LOG	www.eurolog.com	SAP Deutschland	www.sap.com/germany
EVO Informationssysteme	www.evo-solutions.com	Securikett Ulrich & Horn	www.securikett.com
FAUSER	www.fauser.ag	Siemens Industry Software	www.sw.siemens.com
gbo datacomp	www.gbo-datacomp.de	SMS group	www.sms-group.com/expertise/digitalization
Geovision	www.geovision.de	Software Factory	www.sf.com
Google Germany	www.google.de	Soley	www.soley.io
HALO-electronic	www.inteos.com	toolbox	www.toolbox-software.com
IBM Deutschland	www.ibm.de	valantic Supply Chain Excellence	www.valantic.com
Industrie Informatik	www.industrieminformatik.com		
INFORM	www.felios.de		

Product independent Consulting

Abass	www.abass.de	OPTIMUM datamanagement solutions	www.optimum-gmbh.de
accelcon industrial engineering	www.accelcon.de	ORBIS	www.orbis.de
AZO	www.azo.com	Perfect Production	www.perfect-production.de
bridgefield	www.bridgefield.de	PIKON Deutschland	www.pikon.com
Configura	www.configura.com	PROSTEP	www.prostep.com
COSMO CONSULT GmbH	www.cosmoconsult.com	PROXIA Software	www.proxia.com
DataArt	www.dataart.com/de	S & P Computersysteme	www.sup-logistik.de
EPLAN	www.eplan.de	SALT Solutions	www.salt-solutions.de
FAUSER	www.fauser.ag	SMS group	www.sms-group.com/expertise/digitalization
GEA Brewery Systems	www.gea.com	Software Factory	www.sf.com
HEGLA-HANIC	www.hegla-hanic.de	syscon	www.syscon-online.com
HEITEC	www.heitec.de	Tebis Technische Informationssysteme	www.tebis.com
IBM Deutschland	www.ibm.de	Techniciency Consulting	www.techniciency.de
Industrie Reply	www.reply.com	toolbox	www.toolbox-software.com
IPKS	www.ipks.de	TROVARIT	www.trovarit.com
iTAC Software	www.itac.de	UNITY	www.unity.de
Janz Tec	www.janztec.com	valantic Supply Chain Excellence	www.valantic.com
Körber	www.koerber.com	viastore SOFTWARE	www.viastoresoftware.com
Magic Software Enterprises	www.magicsoftware.com	Your Expert Cluster	www.youexpertcluster.de
MQ result consulting	www.mqresult.de	znt	www.znt-richter.com
neogramm	www.neogramm.de		

Traceability in the value creation network



Florian Klein

The digitalization of products and processes in the engineering sector has added considerable significance to traceability. Combinations with product protection technologies facilitate clear identification and also authenticity verification. In the value creation network, this generates the degree of trust that is crucial for Industry 4.0 so that new business models can be established, offering customized and product-related added-value services.

In order to achieve the required level of traceability, it is necessary to leave “identifiable traces” that remain visible to all process participants for an adequate amount of time. The type of marking used on products or packaging and the duration for which this information is available depends on the individual application and the general conditions. The wide-scale use of consistent marking proves beneficial not only in logistics processes, but also in other areas of the company, such as in production, quality management or in service.

Global databases as networking partners

Cross-company databases also provide a quick and easy option for supplying relevant information to other participants in the value creation network, such as customers, suppliers or service providers. This allows for quicker data sharing and, ideally, global use of this data, independent of the in-house IT infrastructure. For small and medium-sized companies, the latter aspect is of particular importance when it comes to implementing a global traceability solution. It simplifies the incoming goods process for products, significantly improves process efficiency and provides customers with transparent shipment tracking in real time. For serialized products, such as safety-related components, the resulting clear identification also paves the way for additional, customized added-value services. Ideally, clear product labelling is based on globally valid, established standards.

Additional solution modules are necessary to ensure that data and products are not tampered with, and to prevent counterfeit products from infiltrating the value creation or distribution network. Various options (physical, chemical, digital etc.) are available for product authentication.

VDMA organizes various events and working groups that look into the whole traceability issue, thus ensuring the availability of comprehensive information with plenty of scope for productive sharing.

VDMA contact

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Traceability

Product Component of ERP, MES ...

A+W Software	www.a-w.de	iTAC Software	www.itac.de
abas Software	www.abas-erp.com	Kinexon Industries	www.kinexon-industries.com
abilis	www.abilis.de	KRONES	www.krones.com
All for One Group	www.all-for-one.com	KUMAVISION	www.kumavision.com
alltrotec	www.alltrotec.de	Membrain	www.membrain-it.com
ams.Solution	www.ams-erp.com	Mobile Function	www.mobile-function.com
Asseco Solutions	www.assecosolutions.com	MODUS Consult	www.modusconsult.de
AZO	www.azo.com	MPDV Mikrolab	www.mpdv.com/de
BCT Technology	www.bct-technology.com	N+P Informationssysteme	www.nupis.de
BEUMER Maschinenfabrik	www.beumergroup.com	ORBIS	www.orbis.de
COSMO CONSULT GmbH	www.cosmoconsult.com	oxaion	www.oxaion.de
COSMO CONSULT AG	www.cosmoconsult.com	PIKON Deutschland	www.pikon.com
datura manufacturing	www.swissdynamics.net	proALPHA Business Solutions	www.proalpha.com
evon	www.evon-automation.com	ProLeiT	www.proleit.de
FAUSER	www.fauser.ag	PSI Software	www.psi.de
gbo datacomp	www.gbo-datacomp.de	q.beyond	www.qbeyond.de
GEA Brewery Systems	www.gea.com	Rockwell Automation	www.rockwellautomation.com
GFOS	www.gfos.com	SALT Solutions	www.salt-solutions.de
GODYO Business Solutions	www.godyo.com	SAP Deutschland	www.sap.com/germany
GS1 Germany	www.gs1-germany.de	schrempp edv	www.schrempp-edv.de
HALO-electronic	www.inteos.com	Sedo Treepoint	www.sedo-treepoint.com
HEGLA-HANIC	www.hegla-hanic.de	SETEX Schermuly textile computer	www.setex-germany.com
HEISAB	www.heisab.de	SQL Projekt	www.sql-ag.de
HEITEC	www.heitec.de	Trebing & Himstedt Prozessautomation	www.t-h.de
IBODigital	www.ibodigital.com	untersee Unternehmensberatung	www.untersee.com
IFS Deutschland	www.ifs.com/de	Werum IT Solutions	www.koerber-pharma.com
Industrie Informatik	www.industrieminformatik.com	Zuken E3	www.zuken.com
Isah	www.isah.com		

Stand-alone Traceability Solution

A+W Software	www.a-w.de	iT Engineering Software Innovations	www.ite-si.de
All for One Group	www.all-for-one.com	Kinexon Industries	www.kinexon-industries.com
avenit	www.avenit.de	KOCH Pac-Systeme	www.koch-pac-systeme.com
AZO	www.azo.com	Körber	www.koerber.com
Balluff	www.balluff.com	KRONES	www.krones.com
bridgefield	www.bridgefield.de	macio	www.macio.de
COMAN Software	www.coman-software.com	Microsoft Deutschland	www.microsoft.com
compacer	www.compacer.com	Mobile Function	www.mobile-function.com
Configit	www.configit.com	neogramm	www.neogramm.de
COSMO CONSULT AG	www.cosmoconsult.com	oneIdentity+	www.one-identity-plus.com
Dassault Systemes Deutschland	www.3ds.com	Perschmann Calibration	www.perschmann-calibration.de
DataVision	www.datavision.software	ProLeiT	www.proleit.de
Dürr Aktiengesellschaft	www.durr.com	PROXIA Software	www.proxia.com
Elabo	www.elabo.de	PSI Technics	www.psi-technics.com
elunic	www.elunic.com/de	Rockwell Automation Solutions	www.rockwellautomation.com
:em engineering methods	www.em.ag	SALT Solutions	www.salt-solutions.de
EURO-LOG	www.eurolog.com	SAP Deutschland	www.sap.com/germany
evon	www.evon-automation.com	Schneider Electric	www.schneider-electric.de
FORCAM	www.forcam.com	Siemens Industry Software	www.sw.siemens.com
GEA Brewery Systems	www.gea.com	SMS group	www.sms-group.com/expertise/digitalization
SC Gemini CAD Systems SRL	www.geminicad.com		
Google Germany	www.google.de	Software Factory	www.sf.com
GS1 Germany	www.gs1-germany.de	SQL Projekt	www.sql-ag.de
HEGLA-HANIC	www.hegla-hanic.de	TRUMPF	www.trumpf.com
IBM Deutschland	www.ibm.de	Werum IT Solutions	www.koerber-pharma.com
ICONICS Germany	www.iconics.com	Zuken E3	www.zuken.com

Product independent Consulting

accelcon industrial engineering	www.accelcon.de	macio	www.macio.de
ams.Solution	www.ams-erp.com	MQ result consulting	www.mqresult.de
Centigrade	www.centigrade.de	neogramm	www.neogramm.de
DataArt	www.dataart.com/de	oneIdentity+	www.one-identity-plus.com
:em engineering methods	www.em.ag	Perfect Production	www.perfect-production.de
EPLAN	www.eplan.de	PIKON Deutschland	www.pikon.com
FAUSER	www.fausser.ag	ProLeiT	www.proleit.de
GFT Technologies	www.gft.com/de/de/index	SALT Solutions	www.salt-solutions.de
HEGLA-HANIC	www.hegla-hanic.de	SMS group	www.sms-group.com/expertise/digitalization
HEITEC	www.heitec.de	Software Factory	www.sf.com
IBM Deutschland	www.ibm.de	syscon	www.syscon-online.com
INDUTRAX	www.indutrax.net	UNITY	www.unity.de
iT Engineering Software Innovations	www.ite-si.de	valantic Supply Chain Excellence	www.valantic.com
iTAC Software	www.itac.de	VSF Experts	www.vsf-experts.de
Janz Tec	www.janztec.com	Werum IT Solutions	www.koerber-pharma.com
Körber	www.koerber.com		

Technical product documentation

Technical product documentation is an asset for the value chain and enhances acceptance of the products supplied. Editorial systems are an integral part of the overall process from product development to product delivery.

- Reduced costs for documentation creation
- Shorter production time for the documents
- Enhanced quality thanks to the repeated use of modules
- Added value through use in various areas such as service, internal and external training, support of sales

Expectations made of product documentation have grown significantly in recent years. Multi-media content is embedded and provided so that users can quickly familiarize themselves with the product. This is indispensable in light of the increasing product complexity and the growing range of machine features. In addition to textual descriptions, machine operators are also helped by videos, animations, interactive graphics and apps, along with augmented and virtual reality applications.

Mechanical engineering companies have come to master these challenges with ease by using computer systems for documentation creation. The results speak for themselves:

Product documentation goes through further development as part of cross-departmental information and project management, with information being added at every stage of the product development process. The document management system records, manages, stores, and versions all types of information generated during this process and makes it available in its original form. It assists employees in their daily work. The benefits are tangible in terms of quality, while also resulting in quantitative advantages thanks to material cost savings and increased cash discount income through reduced lead time.

VDMA has published guidelines on both these topics. The guidelines show how to implement such systems, how to use them for your goals and how to integrate them with other IT systems in the company.

Technical Product Documentation

Part of ERP

abas Software	www.abas-erp.com	GS1 Germany	www.gs1-germany.de
All for One Group	www.all-for-one.com	HEISAB	www.heisab.de
ams.Solution	www.ams-erp.com	ILC	www.ilc-solutions.de
ASSYST	www.assyst.de	kothes	www.kothes.com
BCT Technology	www.bct-technology.com	Microsoft Deutschland	www.microsoft.com
CATUNO	www.catuno.de	Mobile Function	www.mobile-function.com
ClassiX Software	www.classix.de	ORBIS	www.orbis.de
COSMO CONSULT GmbH	www.cosmoconsult.com	PIKON Deutschland	www.pikon.com
COSMO CONSULT AG	www.cosmoconsult.com	proALPHA Business Solutions	www.proalpha.com
DSC Software	www.dscsag.com	PSI Software	www.psi.de
Empolis Information Management	www.service.express	Sage	www.sage.de
EPLAN	www.eplan.de	schrempp edv	www.schrempp-edv.de
EVO Informationssysteme	www.evo-solutions.com	SL innovativ	www.sl-i.de
evon	www.evon-automation.com	Solutiness	www.tele-look.com
FAUSER	www.fauser.ag	SQL Projekt	www.sql-ag.de
Fischer Information Technology	www.fischer-information.com	Syntax Systems	www.syntax.com/fit
GAL Digital	www.gal-digital.de	znt	www.znt-richter.com
GODYO Business Solutions	www.godyo.com	Zuken E3	www.zuken.com

Stand-alone Software for Product Documentation / CMS

3D Interaction Technologies	www.3dit.de	INNEO Solutions	www.inneo.com
abilis	www.abilis.de	kothes	www.kothes.com
ACAM Engineering	www.acam.at	Lino	www.lino.de
alltrotec	www.alltrotec.de	N+P Informationssysteme	www.nupis.de
ARC Solutions	www.arcsolutions.de	NTI Kailer	www.nti.biz/de
audius	www.audius.de	oculavis	www.oculavis.de
b_digital UG	www.skemdit.com	Perschmann Calibration	www.perschmann-calibration.de
CE-CON	www.ce-con.de	Perspectix	www.perspectix.com
COMAN Software	www.coman-software.com	PROSTEP	www.prostep.com
COSMO CONSULT GmbH	www.cosmoconsult.com	PSI Technics	www.psi-technics.com
COSMO CONSULT AG	www.cosmoconsult.com	q.beyond	www.qbeyond.de
Dassault Systemes Deutschland	www.3ds.com	Qualysoft	www.de.qualysoft.com
DOCUFY	www.docufy.de	Quanos Content Solutions	www.quanos-content-solutions.com
Dokus Schmiede	www.dokus Schmiede.de	Quanos Service Solutions	www.quanos-service-solutions.com
Elabo	www.elabo.de	Securikett Ulrich & Horn	www.securikett.com
Empolis Information Management	www.service.express	Siemens Industry Software	www.sw.siemens.com
EPLAN	www.eplan.de	SL innovativ	www.sl-i.de
EVO Informationssysteme	www.evo-solutions.com	Solutiness	www.tele-look.com
evon	www.evon-automation.com	STAR Deutschland	www.star-group.net
Fabasoft Deutschland	www.fabasoft.com/de	Sybit	www.sybit.de
Fischer Information Technology	www.fischer-information.com	untersee Unternehmensberatung	www.untersee.com
GAL Digital	www.gal-digital.de	J.M. Voith/VPH	www.voithpaper.com
gds	www.gds.eu	WSCAD	www.wscad.com
HALO-electronic	www.inteos.com	Zuken E3	www.zuken.com
ILC	www.ilc-solutions.de		

Stand-alone Software for Translation Management

DCC global	www.dcc-global.com	kothes	www.kothes.com
DOCUFY	www.docufy.de	Perspectix	www.perspectix.com
Dokus Schmiede	www.dokus Schmiede.de	Quanos Content Solutions	www.quanos-content-solutions.com
EAS	www.eas-solutions.de	SL innovativ	www.sl-i.de
Empolis Information Management	www.service.express	STAR Deutschland	www.star-group.net
EPLAN	www.eplan.de	Sybit	www.sybit.de
Fischer Information Technology	www.fischer-information.com	Trados	www.sdl.com
GAL Digital	www.gal-digital.de		

Product independent Consulting

A+W Software	www.a-w.de	NewTec	www.newtec.de
Abass	www.abass.de	NTI Kailer	www.nti.biz/de
ARC Solutions	www.arcsolutions.de	PIKON Deutschland	www.pikon.com
bridgefield	www.bridgefield.de	PROSTEP	www.prostep.com
cognitas.	www.cognitas.de	Qualysoft	www.de.qualysoft.com
COSMO CONSULT GmbH	www.cosmoconsult.com	Dr.Rieland Technische Dokumentation	www.rieland-doku.com
DataArt	www.dataart.com/de	SL innovativ	www.sl-i.de
DCC global	www.dcc-global.com	syscon	www.syscon-online.com
Dokus Schmiede	www.dokus Schmiede.de	Techniciency Consulting	www.techniciency.de
EPLAN	www.eplan.de	tecteam	www.tecteam.de
ERM Consulting	www.erm-consulting.de	UNITY	www.unity.de
FAUSER	www.fausser.ag	Werum IT Solutions	www.koerber-pharma.com
Fischer Information Technology	www.fischer-information.com	Martin Wiesend Die Kundendienst-Trainer	www.kundendienst-trainer.de
ILC	www.ilc-solutions.de	WSCAD	www.wscad.com
J&M Business Consulting	www.jmbc.io	Your Expert Cluster	www.yourexpertcluster.de
kothes	www.kothes.com	ZINDEL	www.zindel.de
MQ result consulting	www.mqresult.de	znt	www.znt-richter.com

Document Management System (DMS) / Enterprise Content Management (ECM)

Part of ERP, CRM ...

abas Software	www.abas-erp.com	HEITEC	www.heitec.de
abilis	www.abilis.de	IFS Deutschland	www.ifs.com/de
ADITO Software	www.adito.de	ILC	www.ilc-solutions.de
All for One Group	www.all-for-one.com	Infor (Deutschland)	www.infor.com
alltrotec	www.alltrotec.de	Isah	www.isah.com
ams.Solution	www.ams-erp.com	IT Vision Technology	www.itvt.de
ARC Solutions	www.arcsolutions.de	itmX	www.itmx.de
Asseco Solutions	www.assecosolutions.com	KRONES	www.krones.com
ASSYST	www.assyst.de	KUMAVISION	www.kumavision.com
audius	www.audius.de	Microsoft Deutschland	www.microsoft.com
AVISTA ERP Software	www.avista-erp.de	Mobile Function	www.mobile-function.com
BCT Technology	www.bct-technology.com	MODUS Consult	www.modusconsult.de
CAS Software	www.cas.de	N+P Informationssysteme	www.nupis.de
CATUNO	www.catuno.de	ORISA Software	www.orisa.de
ClassiX Software	www.classix.de	oxaion	www.oxaion.de
COI	www.coi.de	POWERCASE FORMULA CRM	www.formulacrm.de
COSMO CONSULT GmbH	www.cosmoconsult.com	proALPHA Business Solutions	www.proalpha.com
COSMO CONSULT AG	www.cosmoconsult.com	PSI Software	www.psi.de
CSS	www.css.de	Qualysoft	www.de.qualysoft.com
DataArt	www.dataart.com/de	Sage	www.sage.de
datura manufacturing	www.swissdynamics.net	SAP Deutschland	www.sap.com/germany
DSC Software	www.dscsag.com	schrempp edv	www.schrempp-edv.de
eEvolution	www.eevolution.de	Schubert & Salzer Data	www.schubert-salzer.com
Empolis Information Management	www.service.express	SETEX Schermuly textile computer	www.setex-germany.com
ERM Consulting	www.erm-consulting.de	SL innovativ	www.sl-i.de
EVO Informationssysteme	www.evo-solutions.com	Solutiness	www.tele-look.com
evon	www.evon-automation.com	SQL Projekt	www.sql-ag.de
GAL Digital	www.gal-digital.de	Sybit	www.sybit.de
Geovision	www.geovision.de	Syntax Systems	www.syntax.com/fit
GODYO Business Solutions	www.godyo.com	TopM Software	www.topm.de
GS1 Germany	www.gs1-germany.de	znt	www.znt-richter.com
HEISAB	www.heisab.de	Zuken E3	www.zuken.com

Stand-alone Document Management / ECM

alltrotec	www.alltrotec.de	Fabasoft Deutschland	www.fabasoft.com/de
ams.Solution	www.ams-erp.com	Fischer Information Technology	www.fischer-information.com
ARC Solutions	www.arcsolutions.de	FORCAM	www.forcam.com
Asseco Solutions	www.assecosolutions.com	GAL Digital	www.gal-digital.de
Blauhut & Partner Informationssysteme	www.procos.de	Geovision	www.geovision.de
CE-CON	www.ce-con.de	GODYO Business Solutions	www.godyo.com
COI	www.coi.de	Google Germany	www.google.de
COMAN Software	www.coman-software.com	IBM Deutschland	www.ibm.de
CONTACT Software	www.contact.de	ILC	www.ilc-solutions.de
COSMO CONSULT GmbH	www.cosmoconsult.com	Infor (Deutschland)	www.infor.com
COSMO CONSULT AG	www.cosmoconsult.com	INGTechnik	www.ingtechnik.de
CSS	www.css.de	INNEO Solutions	www.inneo.com
Dassault Systemes Deutschland	www.3ds.com	INTENSIO Software und Consulting	www.intensio.de
DataArt	www.dataart.com/de	ISAP	www.isap.de
datura manufacturing	www.swissdynamics.net	KUMAVISION	www.kumavision.com
DMG MORI Digital	www.werkbliq.de	Mobile Function	www.mobile-function.com
DOCUFY	www.docufy.de	MODUS Consult	www.modusconsult.de
Dürr Aktiengesellschaft	www.durr.com	mpunkt	www.mpunkt.com
EAS	www.eas-solutions.de	Noxum	www.noxum.com
eEvolution	www.eevolution.de	NTI Kailer	www.nti.biz/de
:em engineering methods	www.em.ag	oculavis	www.oculavis.de
Empolis Information Management	www.service.express	PROCAD	www.procad.de
EVO Informationssysteme	www.evo-solutions.com	PSI Software	www.psi.de
evon	www.evon-automation.com	q.beyond	www.qbeyond.de

Stand-alone Document Management / ECM

Qualysoft	www.de.qualysoft.com	USU Software	www.usu.com
Siemens Industry Software	www.sw.siemens.com	Voith	www.voith.com
SL innovativ	www.sl-i.de	J.M. Voith/VPH	www.voithpaper.com
Tebis Technische Informationssysteme	www.tebis.com	Zuken E3	www.zuken.com
untersee Unternehmensberatung	www.untersee.com		

Product independent Consulting

A+W Software	www.a-w.de	ILC	www.ilc-solutions.de
Abass	www.abass.de	INGTechnik	www.ingtechnik.de
accelcon industrial engineering	www.accelcon.de	INNEO Solutions	www.inneo.com
ARC Solutions	www.arcsolutions.de	Körber	www.koerber.com
Centigrade	www.centigrade.de	kothes	www.kothes.com
cognitas.	www.cognitas.de	Magic Software Enterprises	www.magicsoftware.com
COI	www.coi.de	MQ result consulting	www.mqresult.de
COSMO CONSULT GmbH	www.cosmoconsult.com	NTI Kailer	www.nti.biz/de
DataArt	www.dataart.com/de	ORBIS	www.orbis.de
DLP Engineers	www.dlp-engineers.de	POWERCASE FORMULA CRM	www.formulacrm.de
Dokus Schmiede	www.dokus Schmiede.de	Qualysoft	www.de.qualysoft.com
:em engineering methods	www.em.ag	SL innovativ	www.sl-i.de
EPLAN	www.eplan.de	syscon	www.syscon-online.com
ERM Consulting	www.erm-consulting.de	Tebis Technische Informationssysteme	www.tebis.com
esentri	www.esentri.com	Techniciency Consulting	www.techniciency.de
FAUSER	www.fausser.ag	TROVARIT	www.trovarit.com
GFT Technologies	www.gft.com/de/de/index	UNITY	www.unity.de
HEGLA-HANIC	www.hegla-hanic.de	Your Expert Cluster	www.yourexpertcluster.de
HEITEC	www.heitec.de	znt	www.znt-richter.com
IBM Deutschland	www.ibm.de		

Simulation within the product development process

Engineering firms are increasingly using simulation tools to improve and accelerate the product development process. In doing so, they pay particular attention to increasing quality, reducing costs and enhancing customer satisfaction.

Digital simulation in all its various shapes and sizes is becoming an integral part of the entire product development process. It is used in virtually all phases of the product life cycle. Based on the relevant technologies such as the finite element method in construction, collision testing in process engineering, process simulation in production, visualization in virtual commissioning processes, and AR and VR applications in service, simulation contributes significantly to making production more efficient and sustainable.

VDMA has founded the “Simulation and Visualization in the Product Life Cycle” working group to support this development. The aim of the working group is to motivate small and medium-sized companies to use these technologies. Beginning in the early stages of product development – still in a digital format – findings can be included directly in the development, thus increasing product and production quality and reducing the development time.

The VDMA publication “Simulation and visualization in the product life cycle” contains use cases showing the benefit of digital simulation tools. Here companies from different sectors describe the benefits they have generated using these systems, and the savings and improvements they have achieved. The publication highlights the fact that all companies need to address the use of such technologies to satisfy customer demands and reach the respective markets on time, while not losing sight of costs and quality.

The members of the “Simulation and visualization in the product life cycle” working group have set out to cover and address all relevant aspects and facets relating to simulation. Besides expert know-how and publications, VDMA also offers regular webinars.

Product Lifecycle Management / Product Engineering

Mechanical CAD

ACAM Engineering	www.acam.at	HEGLA-HANIC	www.hegla-hanic.de
All for One Group	www.all-for-one.com	Heinen Automation	www.heinen-automation.de
alltrotec	www.alltrotec.de	INNEO Solutions	www.inneo.com
ams.Solution	www.ams-erp.com	Isah	www.isah.com
ARC Solutions	www.arcsolutions.de	ISAP	www.isap.de
ARNOLD IT Systems	www.arnold-it.com	Lino	www.lino.de
BCT Technology	www.bct-technology.com	N+P Informationssysteme	www.nupis.de
CADCABEL	www.cadcabel.com	NTI Kailer	www.nti.biz/de
Configura	www.configura.com	Siemens Industry Software	www.sw.siemens.com
COSMO CONSULT GmbH	www.cosmoconsult.com	SIMERICS	www.simerics.de
Dassault Systemes Deutschland	www.3ds.com	SL innovativ	www.sl-i.de
data M Sheet Metal Solutions	www.datam.de	Software Factory	www.sf.com
DLP Engineers	www.dlp-engineers.de	Tebis Technische Informationssysteme	www.tebis.com
DPS Software	www.dps-software.de	TECHNIA	www.technia.com
DSC Software	www.dscsag.com	TRIC	www.tric.de
:em engineering methods	www.em.ag		

Electrical CAD

alltrotec	www.alltrotec.de	Isah	www.isah.com
Altair Engineering	www.altair.com	logi.cals	www.logicals.com
ams.Solution	www.ams-erp.com	logi.cals automation solutions & services	www.logicals.com
AUCOTEC	www.aucotec.com	N+P Informationssysteme	www.nupis.de
CADCABEL	www.cadcabel.com	NTI Kailer	www.nti.biz/de
COSMO CONSULT GmbH	www.cosmoconsult.com	Schneider Electric	www.schneider-electric.de
Dassault Systemes Deutschland	www.3ds.com	Siemens Industry Software	www.sw.siemens.com
DPS Software	www.dps-software.de	SIMERICS	www.simerics.de
DSC Software	www.dscsag.com	SL innovativ	www.sl-i.de
EPLAN	www.eplan.de	TECHNIA	www.technia.com
Heinen Automation	www.heinen-automation.de	WeAre	www.weare-rooms.com
ILC	www.ilc-solutions.de	WSCAD	www.wscad.com
INNEO Solutions	www.inneo.com	Zuken E3	www.zuken.com

Computer aided Manufacturing (CAM)

A+W Software	www.a-w.de	Infor (Deutschland)	www.infor.com
ACAM Engineering	www.acam.at	INNEO Solutions	www.inneo.com
alltrotec	www.alltrotec.de	Isah	www.isah.com
ams.Solution	www.ams-erp.com	Lino	www.lino.de
ARC Solutions	www.arcsolutions.de	N+P Informationssysteme	www.nupis.de
ARNOLD IT Systems	www.arnold-it.com	NTI Kailer	www.nti.biz/de
BCT Technology	www.bct-technology.com	OPEN MIND Technologies	www.openmind-tech.com
CGTech Deutschland	www.vericut.de	Sandvik Tooling Deutschland	www.sandvik.coromant.com/en-gb/products/coroplus-processcontrol/pages/default.aspx
COSMO CONSULT GmbH	www.cosmoconsult.com		
Dassault Systemes Deutschland	www.3ds.com	Schneider Electric	www.schneider-electric.de
DIENES Apparatebau	www.dienes.net	Siemens Industry Software	www.sw.siemens.com
DPS Software	www.dps-software.de	SMS group	www.sms-group.com/expertise/digitalization
DSC Software	www.dscsag.com		
Eckelmann	www.eckelmann.de	Software Factory	www.sf.com
Eckelmann FCS	www.eckelmann.de	Tebis Technische Informationssysteme	www.tebis.com
esco	www.esco-aachen.de	TECHNIA	www.technia.com
SC Gemini CAD Systems SRL	www.geminicad.com	TRUMPF	www.trumpf.com
Geovision	www.geovision.de	Zuken E3	www.zuken.com
Hexagon DEU02	www.hexagonmi.com/de-DE		
IFS Deutschland	www.ifs.com/de		

Simulation Solution

3D Interaction Technologies	www.3dit.de	Heinen Automation	www.heinen-automation.de
A+W Software	www.a-w.de	HEISAB	www.heisab.de
ACAM Engineering	www.acam.at	Hexagon DEU02	www.hexagonmi.com/de-DE
alltrotec	www.alltrotec.de	INNEO Solutions	www.inneo.com
ARC Solutions	www.arcsolutions.de	ISG	www.isg-stuttgart.de
ARNOLD IT Systems	www.arnold-it.com	Lino	www.lino.de
ASSYST	www.assyst.de	machineering	www.machineering.com
AZO	www.azo.com	N+P Informationssysteme	www.nupis.de
BCT Technology	www.bct-technology.com	NTI Kailer	www.nti.biz/de
CADFEM	www.cadfem.net/de/de	OPEN MIND Technologies	www.openmind-tech.com
CGTech Deutschland	www.vericut.de	REINHOLZ Software & Technology	www.reinholz-sat.de
CMC Engineers	www.cmc-engineers.de/de	Rockwell Automation Solutions	www.rockwellautomation.com
Configit	www.configit.com	Rockwell Automation	www.rockwellautomation.com
Configura	www.configura.com	Schneider Electric Systems Germany	www.se.com/de/de
COSMO CONSULT GmbH	www.cosmoconsult.com	Schneider Electric	www.schneider-electric.de
Dassault Systemes Deutschland	www.3ds.com	Siemens Industry Software	www.sw.siemens.com
DPS Software	www.dps-software.de	SIMERICS	www.simerics.de
Eckelmann	www.eckelmann.de	SMS group	www.sms-group.com/expertise/digitalization
Eckelmann FCS	www.eckelmann.de	STAR Deutschland	www.star-group.net
:em engineering methods	www.em.ag	Tebis Technische Informationssysteme	www.tebis.com
esco	www.esco-aachen.de	TECHNIA	www.technia.com
ESI ITI	www.simulationx.de	TEDATA	www.tedata.de
Google Germany	www.google.de	The MathWorks	www.mathworks.com
HEGLA-HANIC	www.hegla-hanic.de		

Product Data Management (PDM)

A+W Software	www.a-w.de	IFS Deutschland	www.ifs.com/de
abilis	www.abilis.de	ILC	www.ilc-solutions.de
All for One Group	www.all-for-one.com	Infor (Deutschland)	www.infor.com
alltrotec	www.alltrotec.de	INNEO Solutions	www.inneo.com
Altair Engineering	www.altair.com	Isah	www.isah.com
ams.Solution	www.ams-erp.com	ISAP	www.isap.de
ARC Solutions	www.arcsolutions.de	Lino	www.lino.de
ARNOLD IT Systems	www.arnold-it.com	Microsoft Deutschland	www.microsoft.com
BCT Technology	www.bct-technology.com	Mobile Function	www.mobile-function.com
CE-CON	www.ce-con.de	mpunkt	www.mpunkt.com
compacer	www.compacer.com	N+P Informationssysteme	www.nupis.de
Configura	www.configura.com	NTI Kailer	www.nti.biz/de
CONTACT Software	www.contact.de	ORBIS	www.orbis.de
COSMO CONSULT GmbH	www.cosmoconsult.com	ORISA Software	www.orisa.de
COSMO CONSULT AG	www.cosmoconsult.com	Paradigma Software	www.paradigma-software.de
Dassault Systemes Deutschland	www.3ds.com	proALPHA Business Solutions	www.proalpha.com
DIENES Apparatebau	www.dienes.net	PROCAD	www.procad.de
DLP Engineers	www.dlp-engineers.de	PROSTEP	www.prostep.com
DMG MORI Digital	www.werkbliq.de	Quanos Content Solutions	www.quanos-content-solutions.com
DPS Software	www.dps-software.de	Rockwell Automation Solutions	www.rockwellautomation.com
DSC Software	www.dscsag.com	Rockwell Automation	www.rockwellautomation.com
:em engineering methods	www.em.ag	SAP Deutschland	www.sap.com/germany
Empolis Information Management	www.service.express	Schneider Electric Systems Germany	www.se.com/de/de
eoda	www.eoda.de	schrempp edv	www.schrempp-edv.de
EVO Informationssysteme	www.evo-solutions.com	Siemens Industry Software	www.sw.siemens.com
evon	www.evon-automation.com	SL innovativ	www.sl-i.de
Fabasoft Deutschland	www.fabasoft.com/de	Software Factory	www.sf.com
FAUSER	www.fausser.ag	Soley	www.soley.io
Fischer Information Technology	www.fischer-information.com	SPARETECH	www.sparetech.io
gbo datacomp	www.gbo-datacomp.de	STAR Deutschland	www.star-group.net
SC Gemini CAD Systems SRL	www.geminicad.com	Sybit	www.sybit.de

Product Data Management (PDM)

Syntax Systems	www.syntax.com/fit	VSF Experts	www.vsf-experts.de
Tebis Technische Informationssysteme	www.tebis.com	WSCAD	www.wscad.com
TECHNIA	www.technia.com	znt	www.znt-richter.com

Product independent Consulting

accelcon industrial engineering	www.accelcon.de	NTI Kailer	www.nti.biz/de
ARC Solutions	www.arcsolutions.de	OPTIMUM datamanagement solutions	www.optimum-gmbh.de
AZO	www.azo.com	PROSTEP	www.prostep.com
Centigrade	www.centigrade.de	q.beyond	www.qbeyond.de
COSMO CONSULT GmbH	www.cosmoconsult.com	REINHOLZ Software & Technology	www.reinholz-sat.de
DSC Software	www.dscsag.com	SEEBURGER	www.seeburger.de
:em engineering methods	www.em.ag	SERVITIZE	www.servitize.de
EPLAN	www.eplan.de	SL innovativ	www.sl-i.de
FAUSER	www.fauser.ag	Software Factory	www.sf.com
gds	www.gds.eu	syscon	www.syscon-online.com
GFT Technologies	www.gft.com/de/de/index	Tebis Technische Informationssysteme	www.tebis.com
HEGLA-HANIC	www.hegla-hanic.de	Techniciency Consulting	www.techniciency.de
ID-Consult	www.id-consult.com	TROVARIT	www.trovarit.com
ILC	www.ilc-solutions.de	UNITY	www.unity.de
ISG	www.isg-stuttgart.de	valantic Supply Chain Excellence	www.valantic.com
J&M Business Consulting	www.jmbc.io	VSF Experts	www.vsf-experts.de
macio	www.macio.de	Your Expert Cluster	www.youexpertcluster.de
MAG IAS	www.ffg-ea.com	znt	www.znt-richter.com
MQ result consulting	www.mqresult.de	Zühlke Engineering	www.zuehlke.com
N+P Informationssysteme	www.nupis.de		

Project Management (PM)

Part of ERP, CRM ...

abas Software	www.abas-erp.com	ILC	www.ilc-solutions.de
abilis	www.abilis.de	Infor (Deutschland)	www.infor.com
All for One Group	www.all-for-one.com	Isah	www.isah.com
alltrotec	www.alltrotec.de	IT Vision Technology	www.itvt.de
ams.Solution	www.ams-erp.com	itmX	www.itmx.de
ARC Solutions	www.arcsolutions.de	KRONES	www.krones.com
Asseco Solutions	www.assecosolutions.com	KUMAVISION	www.kumavision.com
ASSYST	www.assyst.de	Membrain	www.membrain-it.com
audius	www.audius.de	Microsoft Deutschland	www.microsoft.com
AVISTA ERP Software	www.avista-erp.de	Mobile Function	www.mobile-function.com
BCT Technology	www.bct-technology.com	MODUS Consult	www.modusconsult.de
Blauhut & Partner Informationssysteme	www.procos.de	N+P Informationssysteme	www.nupis.de
CAS Software	www.cas.de	Opdenhoff Technologie	www.opdenhoff.com
CATUNO	www.catuno.de	ORBIS	www.orbis.de
ClassiX Software	www.classix.de	oxaion	www.oxaion.de
COSMO CONSULT GmbH	www.cosmoconsult.com	PIKON Deutschland	www.pikon.com
COSMO CONSULT AG	www.cosmoconsult.com	POWERCASE FORMULA CRM	www.formulacrm.de
CSS	www.css.de	proALPHA Business Solutions	www.proalpha.com
datura manufacturing	www.swissdynamics.net	PROCAD	www.procad.de
DOCUFY	www.docufy.de	PSI Software	www.psi.de
DPS Software	www.dps-software.de	q.beyond	www.qbeyond.de
eEvolution	www.eevolution.de	Qualysoft	www.de.qualysoft.com
ERM Consulting	www.erm-consulting.de	Sage	www.sage.de
EVO Informationssysteme	www.evo-solutions.com	SAP Deutschland	www.sap.com/germany
evon	www.evon-automation.com	schrempp edv	www.schrempp-edv.de
FAUSER	www.fauser.ag	SQL Projekt	www.sql-ag.de
GAL Digital	www.gal-digital.de	STAR Deutschland	www.star-group.net
Geovision	www.geovision.de	Sybit	www.sybit.de
GODYO Business Solutions	www.godyo.com	Syntax Systems	www.syntax.com/fit
HEISAB	www.heisab.de	TopM Software	www.topm.de
HEITEC	www.heitec.de	untersee Unternehmensberatung	www.untersee.com
IFS Deutschland	www.ifs.com/de	Zuken E3	www.zuken.com

Stand-alone Project Management Software

ams.Solution	www.ams-erp.com	INFORM	www.felios.de
CETECOM	www.cetecom.com	INNEO Solutions	www.inneo.com
COI	www.coi.de	INNOSOFT	www.innosoft.de
COMAN Software	www.coman-software.com	JAWA Management Software	www.jawa.at
CONTACT Software	www.contact.de	KUMAVISION	www.kumavision.com
COSMO CONSULT GmbH	www.cosmoconsult.com	LF CONSULT	www.lfconsult.de
COSMO CONSULT AG	www.cosmoconsult.com	Membrain	www.membrain-it.com
CSS	www.css.de	Microsoft Deutschland	www.microsoft.com
Dassault Systemes Deutschland	www.3ds.com	Mobile Function	www.mobile-function.com
DataVision	www.datavision.software	Perspectix	www.perspectix.com
EAS	www.eas-solutions.de	PIKON Deutschland	www.pikon.com
EPLAN	www.eplan.de	PSI Technics	www.psi-technics.com
evon	www.evon-automation.com	Siemens Industry Software	www.sw.siemens.com
Fabasoft Deutschland	www.fabasoft.com/de	Sybit	www.sybit.de
GAL Digital	www.gal-digital.de	Techniciency Consulting	www.techniciency.de
GFT Technologies	www.gft.com/de/de/index	untersee Unternehmensberatung	www.untersee.com
HEISAB	www.heisab.de	valantic Supply Chain Excellence	www.valantic.com
Hexagon DEU02	www.hexagonmi.com/de-DE	VSF Experts	www.vsf-experts.de
ILC	www.ilc-solutions.de	Zuken E3	www.zuken.com

Product independent Consulting

Abass	www.abass.de	J&M Business Consulting	www.jmbc.io
accelcon industrial engineering	www.accelcon.de	macio	www.macio.de
ams.Solution	www.ams-erp.com	MQ result consulting	www.mqresult.de
ARC Solutions	www.arcsolutions.de	NewTec	www.newtec.de
bridgefield	www.bridgefield.de	NTI Kailer	www.nti.biz/de
Centigrade	www.centigrade.de	Opdenhoff Technologie	www.opdenhoff.com
COI	www.coi.de	ORBIS	www.orbis.de
COSMO CONSULT GmbH	www.cosmoconsult.com	PIKON Deutschland	www.pikon.com
DataArt	www.dataart.com/de	POWERCASE FORMULA CRM	www.formulacrm.de
:em engineering methods	www.em.ag	PROSTEP	www.prostep.com
eoda	www.eoda.de	Qualysoft	www.de.qualysoft.com
EPLAN	www.eplan.de	SERVITIZE	www.servitize.de
ERM Consulting	www.erm-consulting.de	syscon	www.syscon-online.com
esentri	www.esentri.com	Tebis Technische Informationssysteme	www.tebis.com
FAUSER	www.fausser.ag	Techniciency Consulting	www.techniciency.de
GAL Digital	www.gal-digital.de	TROVARIT	www.trovarit.com
GFT Technologies	www.gft.com/de/de/index	UNITY	www.unity.de
HEITEC	www.heitec.de	valantic Supply Chain Excellence	www.valantic.com
IBM Deutschland	www.ibm.de	VSF Experts	www.vsf-experts.de
ILC	www.ilc-solutions.de	Werum IT Solutions	www.koerber-pharma.com
iT Engineering Software Innovations	www.ite-si.de	Your Expert Cluster	www.youexpertcluster.de
ITQ	www.itq.de	Zühlke Engineering	www.zuehlke.com

Other IT Solution Provider and Consulting Firms

Solution Provider for commercial and technical Processes

A+W Software	www.a-w.de	Krehl & Partner	www.krehl.com
Abass	www.abass.de	Laetus	www.laetus.com
abilis	www.abilis.de	Lino	www.lino.de
accelcon industrial engineering	www.accelcon.de	logi.cals	www.logicals.com
alltrotec	www.alltrotec.de	logi.cals automation solutions & services	www.logicals.com
ams.Solution	www.ams-erp.com	logicline	www.logicline.de
ANTARES Life Cycle Solutions	www.antes-lcs.de	macio	www.macio.de
Avalution	www.avalution.net	Magic Software Enterprises	www.magicsoftware.com
Blauhut & Partner Informationssysteme	www.procos.de	Microsoft Deutschland	www.microsoft.com
BOC Information Technologies Consulting	www.boc-group.com	Mobile Function	www.mobile-function.com
bridgefield	www.bridgefield.de	mobileX	www.mobilexag.de
BridgingIT	www.bridging-it.de	MODUS Consult	www.modusconsult.de
Configit	www.configit.com	neogramm	www.neogramm.de
Configura	www.configura.com	PIKON Deutschland	www.pikon.com
DLP Engineers	www.dlp-engineers.de	Point 8	www.point-8.de
ecosio	www.ecosio.com	proCtec	www.proctec.de
esentri	www.esentri.com	REINHOLZ Software & Technology	www.reinholz-sat.de
evon	www.evon-automation.com	S & P Computersysteme	www.sup-logistik.de
gbo datacomp	www.gbo-datacomp.de	SAP Deutschland	www.sap.com/germany
gds	www.gds.eu	schrempp edv	www.schrempp-edv.de
GEA Brewery Systems	www.gea.com	SEEBURGER	www.seeburger.de
SC Gemini CAD Systems SRL	www.geminicad.com	SERVITIZE	www.servitize.de
GFOS	www.gfos.com	Syslog	www.syslog.de
GS1 Germany	www.gs1-germany.de	TRUMPF	www.trumpf.com
HEGLA-HANIC	www.hegla-hanic.de	UNITY	www.unity.de
HEITEC	www.heitec.de	Vollmer & Scheffczyk	www.v-und-s.de
INNOSOFT	www.innosoft.de	VSF Experts	www.vsf-experts.de
itmX	www.itmx.de	WSCAD	www.wscad.com
Janz Tec	www.janztec.com	XITASO	www.xitaso.com
JAWA Management Software	www.jawa.at	znt	www.znt-richter.com
Körber	www.koerber.com		

Solution Provider for electrical Automation

A+W Software	www.a-w.de	DLP Engineers	www.dlp-engineers.de
abilis	www.abilis.de	DS Automation	www.ds-automation.com
ACBIS	www.acbis.de	Eaton Industries	www.eaton.de
ads-tec Industrial IT	www.ads-tec.de	ecosio	www.ecosio.com
ADVES	www.adves.one	eoda	www.eoda.de
ARNOLD IT Systems	www.arnold-it.com	esco	www.esco-aachen.de
AZO	www.azo.com	esentri	www.esentri.com
B&R Industrie-Elektronik	www.br-automation.com	EURO-LOG	www.eurolog.com
Bachmann electronic	www.bachmann.info	evon	www.evon-automation.com
Balluff	www.balluff.com	Festo	www.festo.com
Beckhoff Automation	www.beckhoff.com	GEA Brewery Systems	www.gea.com
BEUMER Maschinenfabrik	www.beumergroup.com	SC Gemini CAD Systems SRL	www.geminicad.com
BITZER Wiegetechnik	www.bitzer-waage.de	Gesellschaft für Sonder-EDV-Anlagen	www.gfs-hofheim.de
Blauhut & Partner Informationssysteme	www.procos.de	GETT Gerätetechnik	www.gett.de
BOC Information Technologies Consulting	www.boc-group.com	GFOS	www.gfos.com
Bosch Rexroth	www.boschrexroth.com/de/de	GLAESS Software & Automation	www.glaess-software.de
bridgefield	www.bridgefield.de	Grenzbach Digital	www.grenzbach.digital
Configit	www.configit.com	HATEC Automatisationsges.	www.hatec.co.at
Configura	www.configura.com	HEGLA-HANIC	www.hegla-hanic.de
COPA-DATA	www.copadata.de	Heinen Automation	www.heinen-automation.de
Dassault Systemes Deutschland	www.3ds.com	HEITEC	www.heitec.de
DCC global	www.dcc-global.com	Hofmann Maschinen- und Anlagenbau	www.hofmannmaschinen.com
DELTA LOGIC	www.deltalogic.de	ICONICS Germany	www.iconics.com
Dematic	www.dematic.com	in-tech	www.in-tech.com
DIENES Apparatebau	www.dienes.net	incowia	www.incowia.com

Solution Provider for electrical Automation

INDUTRAX	www.indutrax.net	RTE Akustik + Prüftechnik	www.rte.de
INTER CONTROL	www.intercontrol.de	SALT Solutions	www.salt-solutions.de
IPKS	www.ipks.de	Sandvik Tooling Deutschland	www.sandvik.coromant.com/en-gb/products/coroplus-processcontrol/pages/default.aspx
ISG	www.isg-stuttgart.de		
itmX	www.itmx.de		
Janz Tec	www.janztec.com	Sarissa	www.sarissa.de
Jungheinrich	www.jungheinrich.de	Schneider Electric Systems Germany	www.se.com/de/de
KOCH Pac-Systeme	www.koch-pac-systeme.com	Schneider Electric	www.schneider-electric.de
Körber	www.koerber.com	Sedo Treepoint	www.sedo-treepoint.com
Laetus	www.laetus.com	SMS group	www.sms-group.com/expertise/digitalization
LASCO Umformtechnik	www.lasco.com		
logi.cals	www.logicals.com	Softing Industrial Automation	www.industrial.softing.com
logi.cals automation solutions & services	www.logicals.com	Software Factory	www.sf.com
logicline	www.logicline.de	talpasolutions	www.talpasolutions.com
M&M Software	www.mm-software.com	TRIC	www.tric.de
machineering	www.machineering.com	TRUMPF	www.trumpf.com
macio	www.macio.de	UNITY	www.unity.de
MAG IAS	www.ffg-ea.com	VMT	www.vmt-vision-technology.com
Microsoft Deutschland	www.microsoft.com	VÖLKEL Mikroelektronik	www.voelkel.de
Mobile Function	www.mobile-function.com	VSF Experts	www.vsf-experts.de
neogramm	www.neogramm.de	WAGO	www.wago.com
NIVUS	www.nivus.de	Weidmüller GTI Software	www.gti.de
ONTEC Automation	www.ontec.de	WENZEL Metrology	www.wenzel-group.com
Opdenhoff Technologie	www.opdenhoff.com	WITTENSTEIN	www.wittenstein.de
PIKON Deutschland	www.pikon.com	WITTENSTEIN alpha	www.wittenstein-alpha.de
proCtec	www.proctec.de	WSCAD	www.wscad.com
Reichardt	www.reichardt.com	XITASO	www.xitaso.com
REINHOLZ Software & Technology	www.reinholz-sat.de	Zimmer & Kreim	www.zk-system.com
Rockwell Automation Solutions	www.rockwellautomation.com	znt	www.znt-richter.com
Rockwell Automation	www.rockwellautomation.com		

SELL SUCCESSFULLY

Selling versatile products successful with the ACBIS B2B web portal: make complex product knowledge easily available - and waste less time with queries.



Easier. Quicker. Better. Quoting and integrated product configuration from ACBIS



ACBIS provides advanced quoting with integrated product configuration (CPQ) and order processing solutions for business with customer-specific products and services. ACBIS solutions are designed in such a way that no IT specialists is needed: the development and maintenance of the rules can be done by product specialists.

Sales System/CPQ Quotation System

The "SalesManager Professional" sales system with integrated ePOS configurator supports sales from initial contact through to the quote and all the way up to the order. The core function of the SalesManager is the shopping cart, in which quote positions are sorted into a multilevel structure, similar to the printout of the quote. Positions in the shopping cart are known items, configuration items and new positions.

The SalesManager can be operated in the enterprise network and offline on a notebook. Users have reported reductions in quote preparation costs of more than 80%.

B2B Web Portal/Web shop

The B2B Web Portal allows product selection, configuration and pricing for the preparation of quotes and orders on the web. Distributors, sales partners and customers worldwide can access the central product knowledge, prepare quotes and enter orders without any time restrictions. A web shop for spare parts and consumables strengthens customer loyalty and reduces the processing time and costs.

Product configuration integrated in the ERP System

The ePOS configurator, integrated into the ERP system, configures customer-specific products and services and generates the corresponding quote documents. During the order processing, the ePOS configurator creates parts lists, routings and further production documents.



ACBIS GmbH • Neureuter Straße 37 b • 76185 Karlsruhe • Germany
Phone +49 721 957 952-0 • E-Mail vertrieb@acbis.de
Internet www.acbis.de

Navigation systems help us master traffic jams and other complex traffic factors in an elegant and time-saving manner.

The simcron PPS planning solution achieves a similar result in production. The high-performance Manufacturing Operations Management (MOM) system developed by alltrotec GmbH in Dresden is for use in the context of modern production systems (ERP) and ensures high lead time reductions, maximum adherence to delivery dates, robust production processes and more.



GPS for navigating production

The driving innovation behind simcron PPS is the discrete event simulation and its use as an assistance system not only for production, but also for sales, forecasting, purchasing and controlling. It plans for limited capacity and considers any number of rules defined for takt times, batches and setup-times as well as all resource combinations (including personnel).

Process optimization with the “drive simulator”

Just like driving on the road, there are many ways to reach the aim in manufacturing too. But which way is the best? A “digital twin” modeled ad hoc from live ERP data can be used analogously to a driving simulator to analyze which parameters of a production process best fit various target values. The insights thus gained provide the basis for optimizing the organization of lean manufacturing processes.

Your daily planning sessions therefore result in only releasing production plans with the most efficient process chains and provide realistic alternatives when disruptions occur.

Good key figures in daily planning

simcron PPS enables very well qualified production plans and long-term forecasts. At the push of a button, the assistance system processes the current data for products, resources, sales orders and procurements in the ERP system and in completion confirmations. At one stroke it calculates suggested work orders and the resources they require along with precise delivery dates. The gantt planner displays reports such as critical processes and allows you to manipulate the data manually.

The alltrotec GmbH IT systems company with more than 60 employees offers the experience of over 200 national and international ERP and planning projects in medium-sized manufacturing firms, and provides all the initial and ongoing support required for implementing your project.



Increasingly, medium-sized mechanical engineering companies see the need to add intelligent capabilities to their products in order to gain an even better market position by offering smart products. With Altair's comprehensive simulation and data analytics solutions, companies can quickly address complex problems when shifting to smart products and develop innovative solutions – while improving product quality and operational efficiency.



Innovation, Quality, and Efficiency – Altair Solutions for the Machine Building Industry



Since Altair started more than 35 years ago, more than 5,000 companies in the mechanical engineering, automotive, aerospace, medical device, and consumer products industries have relied on Altair's best-in-class engineering software. Altair provides simulation and data analytics solutions that enable small and medium-sized companies to better understand their data and develop innovative products faster.

Altair Technology: Pioneer for Engineering Innovation

Altair's simulation solutions for mechanical engineering enable analysis and optimization of the complete system model through accurate 3D simulation of machinery elements, components, and drive and provide valuable insight into their interactions through straightforward co-simulation. Virtual prototypes help reducing cycle times and improve vibration behavior as well as machine dynamics.

By using Altair solutions, companies not only ensure on-schedule delivery and commissioning but also increase customer satisfaction!

The performance of Altair's data analytics solutions is based on a single, scalable data analytics platform that allows for seamless model implementation. With easy-to-understand and intuitive workflows as well as comprehensive visualizations, even inexperienced users can make informed decisions and efficiently solve complex problems.

Altair's simulation and data analytics solutions make the difference in engineering – for higher operational efficiency and more satisfied customers.

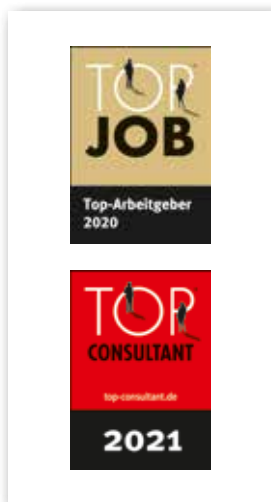
Discover Altair solutions for your digitization strategy!



Consulting and software company
ams.Solution AG, a member of the ams.Group, specialises in the project management requirements of make-to-order, assemble-to-order and variant manufacturers. Based on the branch-oriented business software ams.erp lean and dynamic company processes are implemented along the entire value chain.



The ERP specialist for efficient project management



ams.erp forms the central data hub for all company processes. The software offers a wide range of application modules that can be combined to suit the needs of your specific company. Users thus obtain sleek ERP solutions that allow them to fully realise the strengths of their business. ams.erp synchronises all information in real time, allowing everyone involved in the project to work with a single set of data. And cross-order evaluations allow project manufacturers to reliably gauge the performance of their company at all times. The flexible business software thus increases the planning security, profitability and competitiveness of companies. The resulting process reliability is the key to ensuring the commercial success of your company.

Control complex project transactions safely

ams's know how impresses companies in the sectors of machinery, plant and apparatus engineering; packaging engineering; tool and mould construction; steel, metal and turnkey construction; shipbuilding and the maritime industry; shopfitting and interior fitting; special-purpose vehicle construction; and contract manufacturing. Our portfolio includes consulting, training and service as well as a comprehensive

management consultancy. And with a large team of consultants, software developers and support representatives at locations in Germany, Austria and Switzerland, ams is never far from its customers.

How successfully ams has been working for over 30 years is proven by a large number of awards.

Benefits for the customer

- Multi-project planning
- End-to-end order referencing
- Consistent separation of order BOM and master BOM
- Items with/without item number
- Management of external production including material staging
- Preliminary, simultaneous and final costing – all online
- Semi-finished product evaluation by order
- Sub final invoice

Solutions

ERP, CRM/XRM, Finance, Controlling/BI, Project, PDM/DMS/CAD/CAM, Machine data analysis, PDC, HR, T&A, Mobile, Control Centre, Export, Intercompany, Taskmanager

No matter if contract manufacture, variant production, or serial production, the requirements in mechanical and plant engineering are stringent: the highest standards of quality and efficiency are the first priority. As a visionary in the ERP sector, for already over 25 years Asseco Solutions has already offered tailor-made solutions for the upper mid-market, with a focus on areas such as mechanical engineering, plant construction, automotive construction, or serial production.



ERP Partner for the Digital Future



Intelligent ERP for Flexible Manufacture

At the centre of the solution is the web-based ERP software APplus. With numerous specific functions, this software flexibly supports both production models for serial or make-to-stock production as well as project-based production and service. In this manner, it is ideally placed to meet the complex requirements in mechanical and plant engineering.

Thanks to the extensive PLM and CAD integration, users have immediate access to all development and production data, so that existing construction processes can be completed in the most efficient manner. The innovative product configurator ensures maximum flexibility and productivity in the structuring of bill of materials and logics. Using "Growing BOMs", products that are to be manufactured can be broken down step by step and individual assemblies can be pre-manufactured as soon as possible.

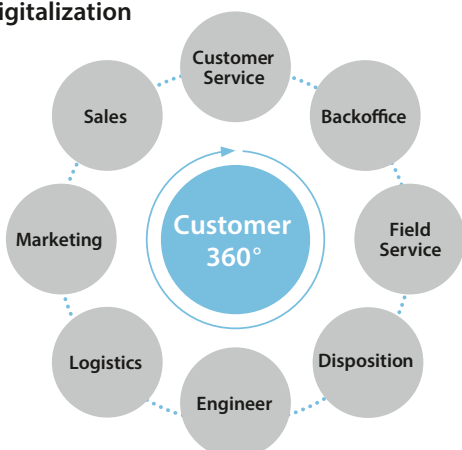
Head into the Digital Age

APplus already today relies on the latest AI technology to cope with the most varied of tasks. Using intelligent functions, anomalies in the production process can be detected in a preventive manner, or optimization plans for warehousing created. As part of this, Asseco supports its customers in an experienced advisory role in their preparation for the Smart future and provides support in the development of a personalized digitalization concept.

The Comfort of Customer Focus with the Security of an International Corporation

Dependable at all times and on equal terms – complete with an absolute security of your investment. As part of the ASSECO Group with over 28,000 employees, Asseco Solutions acts as a technological pioneer within one of the most innovative and highest growth software corporations in Europe. A traditional medium-sized company with the security of the sixth-largest IT provider in Europe. The perfect combination for the success of our customers.

Digitalization



audius: The strong digitization partner at your side



For more than 30 years, we have been supporting companies on their journey to a successful digital future.

What sets us apart?

We **listen** to our customers and **understand their challenges** before working with them to develop **customized software solutions**.

Often, standard software does not go far enough, so we add the missing components as **custom software** to give the customer the perfect IT package for their needs.

Putting the customer front and center

Our solutions ensure the **end-to-end digitization of business processes** in companies, seamlessly linking actors from various different areas with no system discontinuity. This permits a 360° view

of the customer, who, thanks to our professional support, is then able to concentrate fully on the core business.

Expertise in mechanical and plant engineering

The **audius industry solution** for the manufacturing industry based on Microsoft Dynamics 365 combines a CRM system with ERP components and can also be expanded with add-ons for production control, purchasing, and picking. All business processes are mapped digitally. For **plant maintenance and servicing**, audius also offers proven, powerful solutions based on **Dynamics 365 Field Service**.

Mobile, fully digitized service visits

Besides DPG, machine builders such as Fette Compacting are also benefiting from audius' services. The world market leader for tablet presses was looking to digitize its field service and found the perfect partner in audius. Since Dynamics 365 runs **entirely in the cloud**, field service technicians can now log their **visit data** directly on site **on their mobile devices**.

"We still have many plans for the next few years and feel that we are in extremely reliable hands with our partner audius. We look forward to our continuing relationship."

Oliver Ort, Managing Director DPG

Learn more and schedule
a free consultation!



audius

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Phone +49 7151 36900-0 • E-Mail info@audius.de
Internet www.audius.de

A few years ago, the cloud was still a red rag for medium-sized machine builders. However, that has changed fundamentally. Analysts and market observers agree that the future of PLM lies in the cloud. PLM software manufacturers and systems houses are also noticing a growing interest in the cloud among their customers and are developing corresponding solution offerings.



Source: Siemens

Machine builders are open to PLM from the cloud



It is not only the lower investment costs that make a cloud infrastructure interesting for companies in the mechanical engineering sector; the increasing shortage of IT specialists can also be better managed by using the cloud. Computer capacity and storage media can be flexibly adapted to the number of users.

Scalability also applies to the connected authoring systems. It is not uncommon that designers from external service providers must be integrated in the event of capacity bottlenecks. The cloud solution makes it easy to provide a fully-fledged CAD workstation in the browser. At the same time, intellectual property remains protected, as the external employees only see streamed views of the CAD models.

However, cloud requirements vary from customer to customer, depending on whether they are long-standing PLM users or newcomers. Medium-sized machine builders in particular attach importance to a cloud PLM offering that is as comprehensive and versatile as possible. They want to benefit from the advantages of a cloud infrastructure without necessarily having to forego the advantages of a PLM solution seam-

lessly integrated into their process and system landscape. BCT Technology's flexible Cloud4PLM strategy takes this into account.

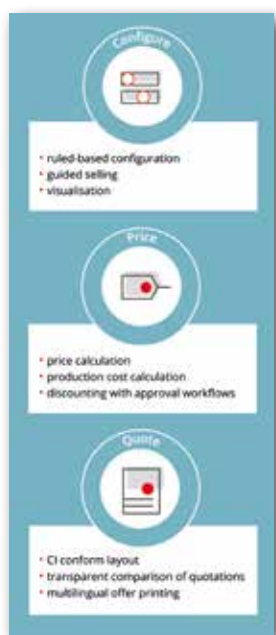
In close contact with its customers and in consideration of their requirements, the long-standing partner of Siemens Digital Industries Software has developed a comprehensive cloud PLM offering around the Teamcenter product family from Siemens. With its solution "BCT Cloud4PLM" BCT closes the gap between the SaaS model of Siemens and the requirements of customers from the mechanical engineering sector.

The Siemens partner is an expert in all aspects of solutions for CAD and PDM/PLM as well as mechatronics and the integration of enterprise applications. With its many years of experience, the company is dedicated to a wide range of digitization topics – from low-code platforms to IoT – and does so both in classic implementation environments and in the cloud. According to BCT, cloud PLM is the silver bullet for responding quickly to new customer requirements and driving digitization forward.





Offers that impress your customers



Customer-specific products, systems and plants require comprehensible and convincing offers. Companies that impress with outstanding user experience in the quotation process and offer the individual product quickly and accurately achieve clear competitive advantages.

If you digitalise your sales with camos CPQ 365, you highlight your customer's enthusiasm. Products are configured to suit customer requirements (configure), prices are reliably calculated (price) and personalised quotations are created (quote). camos CPQ 365 masters both simple and highly complex configuration scenarios. The camos software was developed to achieve a high level of efficiency where other CPQ solutions reach their limits due to the large number of rules, dependencies or positions in the quote.

Multichannel sales

camos CPQ 365 provides optimum support for sales staff at the customer's site, but also in virtual sales discussions without personal customer contact (remote selling). In addition, it enables online product configuration via the company website right through to check-out in the online shop.

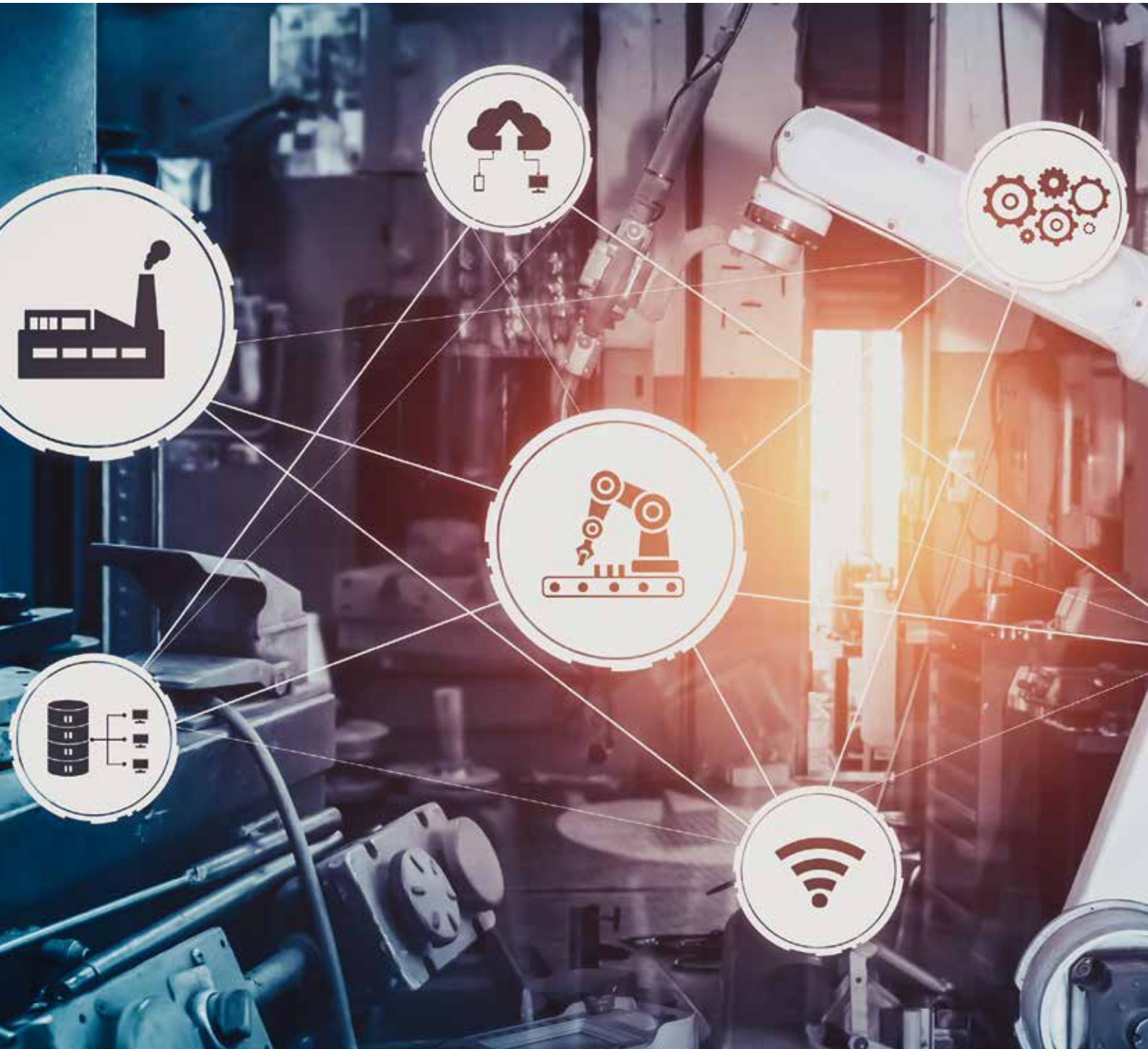
An overview of the benefits of camos CPQ 365:

- **Modelling without programming knowledge:** Product and object knowledge is built up quickly and clearly, even for complex products.
- **Inspire with quotes:** The quotation process convinces with optimal user experience, a 3D visualisation of the configured products and quotation documents in the corporate design.
- **Increase turnover and profit:** Rule-based workflows replace approvals. The sales cycle is significantly shortened. Efficiency in the sales process, optimal pricing as well as cross- & up-selling increase turnover and profit.

camos CPQ software integrates seamlessly into CRM and ERP systems and enables process-safe end-to-end automation. It can be operated in the cloud, on-premise and also on mobile devices online and offline. Among camos' satisfied customers are: ABB, Kone, Haver & Boecker, HOMAG, KSB, Liebherr, MAN, Siemens, TROX and VOITH.



Industry 4.0 for existing plants: digital. integrated. connected. analyzed & evaluated.



compacer is a software provider in the field of integration and automation of business-critical processes. Our solutions “made in Germany” for a format-independent data exchange between IT systems, machines and devices ensure fast, reliable business processes and ensure that your (I)IoT project is running.

In a digital world, data is more important than ever. Integrating and visualizing them smartly ensures automated and lean processes and ultimately sustainable business success. To get there, data of various origins and formats must be consolidated and integrated using an integration platform. This is where compacer comes into play with **edbic**.

By connecting systems, machines, assets, devices or other applications on **edbic**, the data generated from different instances, in a variety of formats and sizes, can be quickly and easily integrated and pushed into the respective target application. As a data hub, **edbic** combines any endpoints, data sources, applications, services, interfaces and workflows in such a way that a single, end-to-end process is created that is orchestrated. Once the basis has been laid, the IoT integration can also take place.

Central aspects of an IoT integration

Less manual effort

Integration of various business-critical applications. This increases productivity and safety, brings new knowledge and reduces manual effort. A modern integration strategy has a number of positive effects.

Improved logistics and sensor data

The acquisition of data from machines, sensors, surveillance cameras and security incidents increases knowledge, not least through the enrichment, conversion and correlation of data. The distribution of the data to further processing systems through an IoT / B2B gateway makes the process smarter.

Transparent processes

By exchanging data in quasi real time, processes become more homogeneous. Monitoring in production, of goods, people and traffic flows provides an improved overview. By setting standards instead of in-house developments, there is increased transparency.

Fast amortization

Standardized processes result in maximum transparency and significantly accelerated implementation with an excellent cost-benefit ratio. This is also confirmed by our customers and success stories.

Source: @Blue Planet Studio /
adobestock

Do you want to start an IoT-project?
Then you will find a lot of assets and
further information on our website.



System Configuration Software – Shorten lead times significantly with CET Material Handling



The planning of intralogistics and material handling projects require enormous specialty knowledge. From pre-sales to installation, laying out conveyor or pallet racking solutions is complex. High customer expectations and the demand for quick turnaround has forced manufacturers to re-evaluate how they do business.

Planning error-free intralogistics projects

Manufacturers must simplify their sales and layout process, and efficiently distribute knowledge and expertise throughout teams.

With Configura's software CET Material Handling, manufacturers can model structures and functions for extensive intralogistics and system projects. Using 2D/3D digital representations of actual products, CET automatically generates sales documents including installation drawings, quotes, BOM, photo-realistic visuals and more.

Configura transforms the way complex systems and spaces are designed by improving efficiency, eliminating errors and automating tasks.

Through our platform, manufacturers can create, manage, publish and consume their data across software solutions, including Configura's product CET Material Handling, to reduce drawing times from months to days and sometimes even hours.

Seamlessly integrate Configura's platform into your IT infrastructure or with other solutions such as enterprise resource planning (ERP), product data management (PDM), customer relationship management (CRM) and Engineering solutions, to optimize data usage and further align departmental processes.

CET Material Handling brings salespeople, project managers, engineers and other departments into one software to design, build, implement and sustain material handling solutions using real manufacturers products and pricing.

To survive the new era of digital transformation, companies must take the next step towards digital convergence. By stepping away from singular solutions such as Configure Price Quote (CPQ), Computer-aided Design (CAD), Excel and



Learn how Configura can simplify complex selling and increase your project win rate.



home-grown tools, manufacturers can merge their tools and processes together into one platform with Configura's solution.

What can CET Material Handling do for manufacturers?

Increase Efficiencies

- Make specifying products easy. Using 2D/3D digital representations of products, eliminate errors and easily train new employees to become product experts.

Decrease total project time from months to days

- Spend less time on projects and more time taking on new ones. Increase revenue by shortening time to quote, design, modify and deliver on projects.
- Eliminate departmental gaps by providing a single solution that all teams can use.

Enhanced customer experience

- Exceed customer expectations by delivering layouts, quotes and revisions faster. Provide photo-realistic 3D visuals to ensure layouts are correct and meet project intent.

About Configura

Headquartered in Linköping, Sweden, Configura has offices in Germany, United States, Malaysia, China and Japan. Configura's software is used worldwide by engineers, designers, salespeople, dealerships, system integrators and manufacturers. Configura has revolutionized the way complex products and systems are configured and sold in the material handling and commercial interiors industries. More than 100 manufacturers – including Dematic, DeLaval, Dexion, Linde Material Handling, NEDCON and Nederman – use CET to sell and visualize systems configuration and products.

Let's dare to be more democratic



“Let’s dare to be more democratic” – over half a century ago, Germany’s Chancellor at the time Willy Brandt summed up his political vision in this famous sentence, a sentence that, amazingly, is just as relevant today as it was back then despite its age. But what does that have to do with software?

A lot, as it turns out. So much, in fact, that Microsoft’s current head Satya Nadella could have lifted his vision of the digital future directly from Willy Brandt: Democratization “to me is Microsoft’s core identity.” At first glance, that might seem strange. Democracy is after all not usually the first thing you think of when you think of software and business technology.

Why “democratization”?

Democracy is a term from the political field, but the principle is universal: It is about universal participation. No one is excluded. Everyone is given the chance to make a contribution, to make a change and, above all, to make things better. Looking at it that way makes what Satya Nadella means clearer: “We talk about our mission a lot. It’s to empower every person in every organization on the planet to achieve more.” But how can a software provider like COSMO CONSULT help make this happen?

First of all, it can create tools to help people foster their own individual strengths. Routine jobs can be automated to give people more free space for creative work, for example. Intelligent assistants can help ensure people make the best decisions possible. People can profit from the knowledge of others, and people can work together closely, no matter where they are.

The future belongs to everyone

Modern information technology is what makes all this possible. And there is more yet to come: Democratization means making these tools available to everyone. It would be a catastrophe if only the big companies and corporations, the big players, were able to afford such technology. Or, to quote Satya Nadella again: We have to ensure that it’s not just the “high priests” of industry that will shape the future.

This is exactly where COSMO CONSULT’s cloud platforms based on Microsoft Azure come into play. It doesn’t matter if it’s a start-up, a traditional medium-sized “Mittelstand” company or a corporate group: there’s no difference in the cloud. This gives all companies, regardless of their size, access to the highest levels of digital technology. Installation is easier than ever before. Companies can concentrate on their own real strengths without having to become IT specialists themselves.

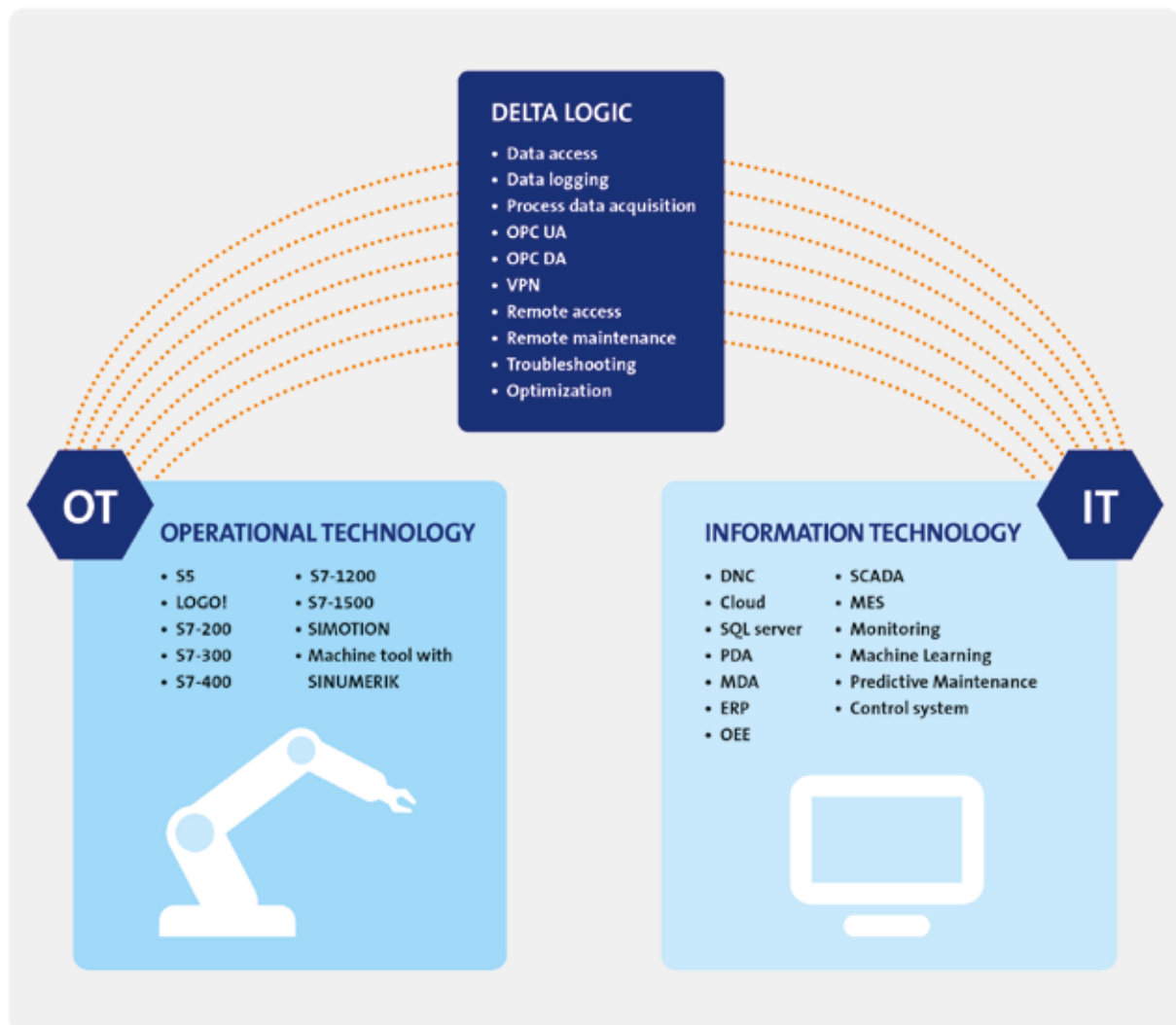
Software for people

It’s clear that “being more democratic” is certainly a question of technology. The opportunities presented by the cloud, AI and other technologies are enormous. Apart from all the euphoria, though, we should not forget that digital tools only make sense if they benefit people and people actually use them. It is people that bring democracy to life, their participation, their enthusiasm and the special talents of each individual. It is no different today than it was in Willy Brandt’s time.

Software solutions that move the world



We connect
your **OT** with your **IT**



Since 1993, DELTA LOGIC Automatisierungstechnik GmbH has been successfully developing software and hardware for manufacturing and process automation in the field of Siemens control systems. Be it packaging machines or elevators, whether sewage treatment plants or combined heat and power plants, coffee roasters or beverage bottling plants: our customers are mechanical and plant engineers, engineering firms and manufacturing companies of almost every industry and size. Many well-known manufacturers and world market leaders rely on DELTA LOGIC products.

Where there are controls and automation technology is mostly know-how of DELTA LOGIC in action

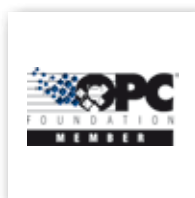
Machine builders and plant operators are often faced with the challenge of having PC-based software and Siemens controllers communicate with each other. In order to build a two-way communication (reading and writing) between these different technical spheres, a special interface is required. DELTA LOGIC builds the bridge from your OT to your IT. Whether it is an S7 controller, an electric drive, a machine tool with SINUMERIK 840d or optimized access to the S7-1200 or S7-1500 configured with the Siemens TIA Portal, solutions from DELTA LOGIC ensure smooth data exchange between PCs and PLC.

You do not have to worry about the details and can easily capture, log and reuse your process data.

There are many different types of access available for this: OPC UA, various machine protocols or access via VPN for remote maintenance and remote control. Using process data acquisition and data logging, you have the option of quality assurance, troubleshooting and the optimization of your processes and procedures.

Our solutions provide you with the data you need for your further applications: connection to your ERP or Manufacturing Execution System (MES), to production data acquisition (PDA) and machine data acquisition (MDA), Distributed Numerical Control (DNC), machine learning (ML), SCADA, Predictive Maintenance and many more. We support you in efficiency analysis, production control and quality management. You want to determine the key performance indicators of your systems and determine the Overall Equipment Effectiveness (OEE)? Do you use the Arburg control system (ALS) in your company? Maybe you'd rather save your data in the cloud or SQL database?

With DELTA LOGIC, you choose the right partner for your tasks.



Your Companion for Integrative PLM



**Do you already use SAP as an ERP system?
Do you also want to manage your product and manufacturing data centrally using intelligent processes? Then this is what you are looking for!**

DSC Software AG stands for more than 30 years of expertise in the development, consulting, sales, and implementation of integration solutions for SAP PLM. It comes as no surprise that more than 700 customers worldwide, including numerous world market leaders, rely on DSC's expertise. As an SAP partner with Platinum status, we accompany our customers on their individual Digital Transformation journey.

Fascination with Integration

Our core competence is integrating leading authoring tools into SAP PLM. The standard integration platform for SAP PLM, SAP Engineering Control Center | SAP ECTR, allows the integration of all engineering data in SAP PLM, and the inclusion of this data in subsequent, intelligent processes. Direct interfaces are available for all common MCAD and ECAD systems. This way, locally produced product data and documents are available company-wide within the SAP system. The value added is a Digital Thread: It is the start of a continuous process from Design to Operate, and simultaneously the data basis for the Digital Twin. SAP ECTR provides an intuitive user interface that is especially tailored to the specific needs of engineers, for working directly in the SAP system.

Smart manufacturing processes – fully integrated in SAP

The transition from product development to manufacturing proves to be a particular challenge for many companies. Different data and processes come together, making work



difficult. With the SAP-integrated manufacturing solution Factory Control Center | FCTR, these challenges can be met. FCTR integrates CAM systems, manages all tool data within the SAP system, and integrates manufacturing planning into the SAP-aided product development process. It also integrates shop floor systems and supplies these automatically with the relevant data from the SAP system. This way, all follow-up processes such as determining tool requirements, or providing NC programs, can be organized seamlessly in the SAP system. With the Worker Information System | WIS designed for mobile use, FCTR provides all relevant information from the SAP system for workers in an easy and intuitive way, so that they can efficiently fulfill their tasks.

CROSS-POINT |

Connecting people and information

Whether it is engineering, manufacturing, purchasing, or sales – all company departments benefit from a quick document and material search. CROSS-POINT allows you to quickly and efficiently search, find, and display the valuable data in the SAP system. Based on cutting-edge web technologies, CROSS-POINT enables the search for documents and materials in the SAP system, even without special SAP knowledge, anytime and everywhere – at the office or remote.



www.dscsag.com

Mechanical engineers are currently facing fierce competition at both national and global level. In this environment, the ability to make time-critical business decisions and respond with agility to customer demands is key. Dassault Systèmes is supporting companies through many years of expertise and suitable solutions.



Source: iStock.com/sompong_tom

Driving the Future of Industrial Equipment



Source: Monty Rakusen/
Getty Imagestom

Flexibility and innovative spirit: These core skills are critical for mechanical engineers, both now and in the future, to meet the demands of the market. As an innovative partner, Dassault Systèmes helps them keep up to speed, accelerate the digital transformation, and pave the way toward disruptive product development and manufacturing.

Innovative for 40 years

More than 300,000 customers from over 140 countries around the world rely on the products supplied by Europe's second-largest software provider, which has been in business since 1981. Around 20,000 employees are providing solutions for mastering current and future challenges. Dassault Systèmes is thus driving forward new design and manufacturing processes together with companies from industrial equipment, transportation & mobility, aerospace, and nine other industries.

Right from the start, Dassault Systèmes has been a pioneer of new technologies that have been shown to blaze the way for the whole industry: Whether it was the first 3D digital mock-up or 3D product lifecycle management (PLM) – thanks

to Dassault Systèmes, companies have been able to benefit from efficient design and simulation solutions and make their ideas become reality. Dassault Systèmes also shaped the platform idea at an early stage: For almost ten years now, its 3DEXPERIENCE platform has enabled the real world to be simulated in the virtual world, networked added value to be realized, and innovations to be developed efficiently. And since 2020, Dassault Systèmes has been going one step further with the virtual twin of the human body. The aim is to harmonize product, nature, and life in order to create a holistic approach for businesses of the future.

Dassault Systèmes' longstanding experience and solutions, combined with the desire of the mechanical engineers to embrace change, lay the ideal foundations for cultivating new areas of business – from offering new services and using real-time data for machine maintenance through to ensuring functional, cost-efficient supply chains. With Dassault Systèmes, the challenges of the future can be mastered together.

With LEEGOO BUILDER from EAS you get a flexibly adaptable CPQ standard software including product configuration, price and cost calculation, document generation and other modules.



LEEGOO BUILDER – The Powerful CPQ Solution



“Keeping the overview...”

LEEGOO BUILDER creates transparency and traceability throughout the proposal process as well as integration with CRM, ERP and CAD.

Efficiency and quality

Fast and simple creation of error-free, extensive proposals in a coherent workflow.

Experience and methodology

LEEGOO BUILDER is currently in use in more than 65 companies around the world. You too can benefit from the vast experience EAS has gathered in the field of CPQ solutions.

Product configuration “Do it yourself”

Creating Product configurators is easy to learn and requires no programming skills. The result is a faster, more secure proposal preparation.

Proposal calculation

Proposal calculation includes cost and price calculation. The generation of a calculation sheet showing profit and contribution margins provides an important result for the internal evaluation.

Document generation

Generation of results documentation provides performant support for both text-based documents and datasheets. Dual-language proposals, e. g. English and Chinese side by side can also be generated.

LEEGOO BUILDER – The Powerful CPQ Solution

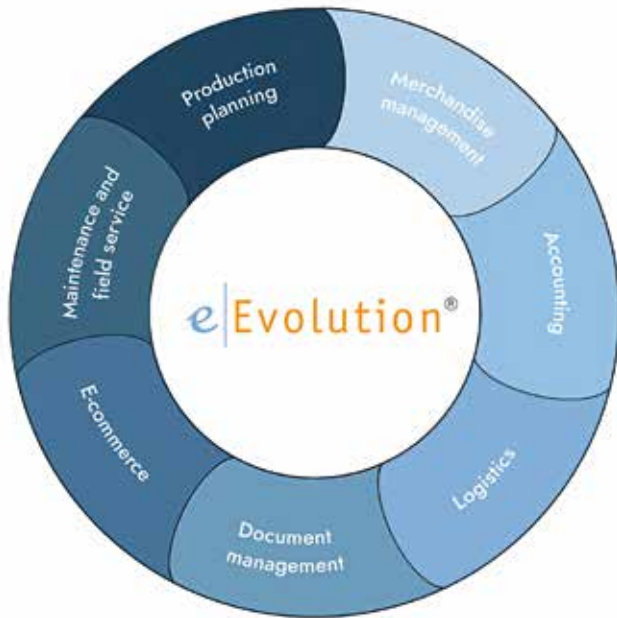
For Consistent Proposal And Project Engineering

In Mechanical And Plant Engineering



EAS Engineering Automation Systems GmbH
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Phone +49 2723 928950 • E-Mail sales@eas-solutions.de
Internet www.eas-solutions.de

eEvolution-ERP: Simple. Fast. Relevant.



eEvolution offers all the functions and flexibility to fulfil the complex demands of medium-sized manufacturers in the mechanical engineering industry in the area of customer-specific manufacturing and project management.

As manufacturing companies rely Benning Elektrotechnik und Elektronik GmbH & Co. KG and Sturm Holding GmbH on the ERP system eEvolution. In addition to the highly functional production control, warehouse and logistics processes and customer service are also perfectly integrated.

With eEvolution, both production planning and production control can be implemented within a company in a well targeted and sustainable manner. This not only provides you with an overview of your entire production process with material requirements planning and capacity utilisation, but also increases efficiency in order processing.

Faster order throughput

The Sturm Group is one of the leading manufacturers of coating systems. With eEvolution, production planning, order processing and project management are completely and transparently implemented.

The deep integration between stock management and logistics processes ensures time savings and the reduction of error sources. As a result, the throughput times of orders were reduced considerably.

Effortless workforce planning for field service

The Benning Group is a supplier of smart efficiency power supplies for industry. In order to further expand customer service and after-sales business, eEvolution Service Management is used. In addition to the workshop area, the technical control centre and customer support, the Service Mobile solution is of particular importance for optimising field service. Not only can operations be coordinated more easily, but field service data can be recorded directly on site and transferred to the office or workshop in real time.



Implementing partner DACH region:
 COMPRA GmbH
 Speicherstr. 9
 31134 Hildesheim
 Phone +49 5121 748602
 E-Mail info@compra.de
 Internet www.compra.de

Source:
 Gorodenkoff/Shutterstock.com

Both examples show how eEvolution supports you in mapping all business processes with the help of easy-to-use modules. This provides you with sustainable and efficient solutions for your individual requirements and tasks throughout the entire life cycle of your products.

**Through transparency, flexibility and speed,
 we gain crucial competitive advantages. In this,
 eEvolution is an essential tool for us.**

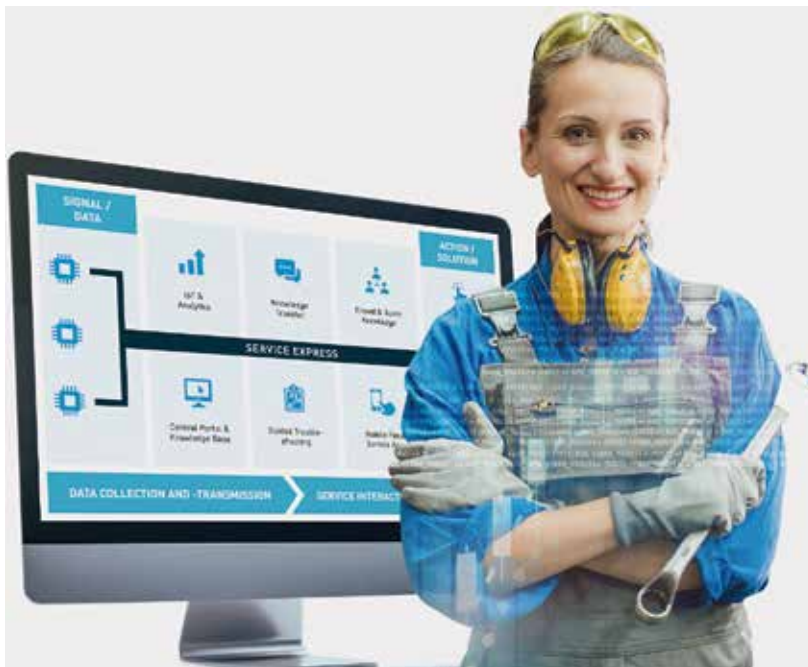
**Reinhold Schultes,
 Managing Director of Sturm Blechverarbeitung GmbH**

Manage your entire company in one single solution with robust end-to-end functionality. Create seamless connections between sales, production, warehouse, customer service and finance.

- High scalability through modular design
- Real-time view through all operations
- Role-based, user-configurable dashboards
- Powerful analytical tools and reports
- Mobile solutions
- Real-time collaboration and data exchange

Optimise your business processes with the eEvolution ERP system – a future-proof platform already trusted by more than 1,000 small and medium-sized enterprises.

Standardized SaaS products for service, aftersales, and customer experience



Knowledge is the critical resource for success in digitalization. Often, all the information is available, but hidden by the mass of irrelevant data. Empolis' standardized SaaS products use artificial intelligence to unlock business-critical knowledge and make the right information available in the right place at the right time.

Empolis Service Express® is the all-in-one platform for **data-driven service and aftersales**. A company's entire service knowledge is brought together in a central knowledge hub and made available to service technicians, sales staff, technical writers, or end customers on a situational basis.

In the **knowledge portal**, users can access all relevant information securely and in seconds – regardless of where or in what format it is stored.

Guided troubleshooting also enables new employees to solve complex problems quickly and independently.

With the mobile **field service app**, the complete range of features can be used offline and remotely without limitations. The **team app** also supports **active knowledge transfer**. The **knowledge panel** can be utilized to maximize sales in aftersales and spare parts business. Service employees and customers automatically receive suggestions for the ideal products and resources to buy or sell.



ABOUT EMPOLIS SERVICE EXPRESS®



ABOUT EMPOLIS CONTENT EXPRESS®



Source: Empolis

The **turnkey IIoT solution “Industrial Analytics”** rounds off the range of services with predefined analytic bots. It monitors machines using AI-based data analysis and also makes it easier for SMEs to get started with the Industrial Internet of Things. In this way, machine and plant failures can be anticipated and avoided.

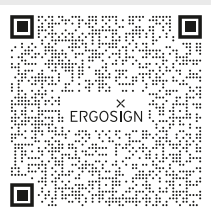
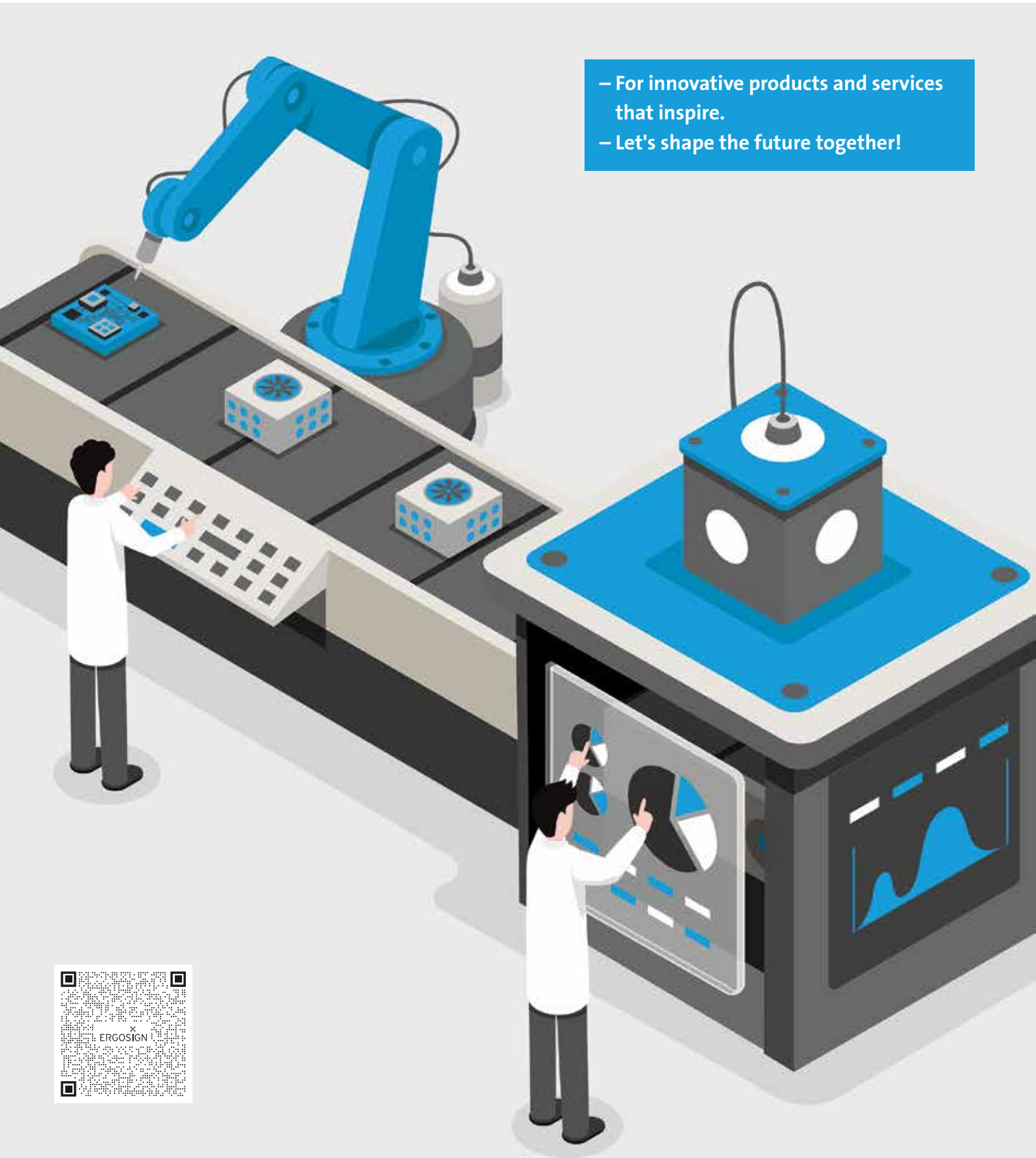
Get a first impression of Empolis Service Express® in just a few minutes! With a free trial version, you will learn how to optimize your customer service in no time.

Empolis Content Express® enables your customers to have the **best possible product experience**. With its unique combination of knowledge graph technology and content delivery platform, the solution creates lightweight, **digital information twins**. In this single source of truth, all product

information is mapped and then delivered in a customized manner. Empolis Content Express® dramatically reduces maintenance effort for product data and editorial content, while customers benefit from a unique **customer product experience** and become true fans.

Custom-made digitalization with Ergosign

- For innovative products and services that inspire.
- Let's shape the future together!



We develop digital strategies and design solutions that advance your company.

From smart production to intelligent supply chains to data-based business models – digital transformation offers excellent potential. At the same time, it requires a clear vision, cross-departmental collaboration, and skills in human-centered design with modern technologies. Ergosign supports you in defining and implementing a digitalization strategy tailored to your needs.

Whether it is an existing machine HMI, a new development, or a platform-based business model – technology can then be used to develop value-adding, future-proof products, and services if there is a common understanding of people's needs and expectations about a company's offering. Our human-centered approach to designing industry-related applications helps you translate technology trends into solutions that support users in achieving their goals better.

A good experience is not a luxury – it is essential for corporate success. Human-centered design allows companies to exploit the full potential of digitalization for the best user experience of the services and applications offered.

With Ergosign as your digitalization partner, you develop a company-wide vision that ensures everyone involved – from management to individual employees – pulls together. A roadmap serves as a visible red thread for implementation. Ergosign accompanies your digitalization initiative with the following services:

- Individual UX training for your employees.
- Human-centered organizational development to create optimal digitalization requirements.
- Realization of all digital touch points – from conception to implementation.
- Development of holistic IoT prototypes in our Multi Experience Lab for early validation of complex product ideas.

Find out together with our experts what your custom-made digitalization strategy could look like. We help develop services that stand out from the competition, create added value and open up innovative business opportunities – tailored to your “digital DNA”.

WE CREATE DIGITAL EXPERIENCES.

Ergosign is a digital agency with a focus on user experience. We design products and services that support people in their work and enrich their lives. With our human-centered, goal-oriented, and collaborative mindset, we support our customers holistically, from the idea conception to implementing unique digital products, services, and platforms.

At Ergosign, we have over 20 years of relevant industry experience in designing interfaces for machine tools, through the manufacturing and process industries to data-based value-added services.

As the market leader for user experience design in the DACH region, we have extensive digitalization experience from over 4,000 projects and are proud of our team of more than 200 talents at six locations in Germany and Switzerland.

Source: Ergosign, stock.adobe.com



elunic – Digital Solutions for the Manufacturing Industry

elunic is specialized in the design and development of Industrial IoT (IIoT) solutions and applications in manufacturing. elunic supports machine manufacturers identifying added value through digital applications of their machines and interconnections and implementing them accordingly. With the IIoT application framework shopfloor.io, development can be carried out demand-oriented and efficiently using existing, open software modules. These modules can be used to implement applications such as condition monitoring, a machine portal providing central access for customers (operators), or a digital service record for implementing a subscription business model (for wear and tear materials and consumables).

shopfloor.io – White-Label IIoT Software Construction Kit for Machine Manufacturers **Modular – Customizable – Scalable**

The modular shopfloor.io software components help machine manufacturers get started quickly. They are the building blocks of scalable IIoT system architectures and accelerate the development of tailor-made Industry 4.0 solutions. It can be operated cloud-based and/or on-premises.

Existing applications (such as ERP, service platform, spare parts catalog) integrate seamlessly, and IoT platforms (like AWS or Azure) can be deployed as a leading system.

shopfloor.io modules:

- Machine Portal: centralized application management and deployment
- Asset Management: cross-portal plant and machine management
- Condition Monitoring: based on sensor data
- OEE Dashboard: for monitoring Overall Equipment Effectiveness
- Spare Parts Management: boosting sales through store connection
- Digital Machine File and Timeline: complete error and event logging
- Maintenance Manager: planning of maintenance and servicing tasks
- Document Management: central updating and versioning of machine-related documents
- Service Module: channeling service requests

www.elunic.com/en/shopfloor-io/



The era of the industrial IoT enables manufacturing companies to quickly achieve sustainability, efficiency and innovative strength. For these goals, SmartFactory specialist FORCAM offers customized IIoT solutions.



Source: FORCAM / Fotolia / shutterstock

Sustainability, Efficiency, Innovation

The FORCAM solutions under the umbrella brand FORCAM FORCE enable

- transparency of all processes in production and planning
- higher efficiency through the digital twin of production and MES out of the box
- greatest flexibility through free composition and collaboration of IT systems

Producing sustainably

With FORCAM technology, all old and new production machines are easily connected. A machine data model is generated from the signals for real-time analysis in downstream systems such as SAP DMC. Companies with global factory networks can quickly scale the connection of the same machine types globally via templates.

Automotive specialist BorgWarner Cooling Systems uses FORCAM technology to continuously optimize resource consumption through real-time energy monitoring. EHS-Manager Martin Strehl: "This way we have our energy costs under control in the long term."

Increasing efficiency

Companies can use FORCAM to design their individual IT architecture. The technology enables free composition and collaboration of IT systems in hybrid IT infrastructures (on-premise/edge; cloud). After a short period of time, pilot projects have delivered significant increases in efficiency of more than ten percent.

Maintaining innovation

SMEs get a compact solution with FORCAM software in the Azure Cloud for rapid efficiency benefits at a fixed monthly price. Companies benefit from the advantages of the Smart Factory Cloud after just a few days.

FORCAM technology is used by both large and medium-sized companies – including BorgWarner, Krones, Lockheed Martin, Reich, Swarovski Optik. FORCAM is headquartered in Ravensburg, Germany, with offices in France, USA and China.

Mastering technical data in a smart factory



Fabasoft Approve is a cloud-based off-the-shelf solution for managing technical data and documents in an industrial environment. It allows companies to integrate suppliers and customers on a powerful and secure platform that serves as a common data environment (CDE), which significantly simplifies information supply and processing. Automated review and approval processes cut the manual workload dramatically and guarantee efficiency and traceability.

Technical documentation

- Create structured overall technical documentation based on standards like DITA
- Network your customers, producers, and suppliers on a single platform
- Automated review, approval, and release processes that involve all stakeholders
- Mass upload functionality with automatic adaptation of document names to company-specific standards and allocation to order items

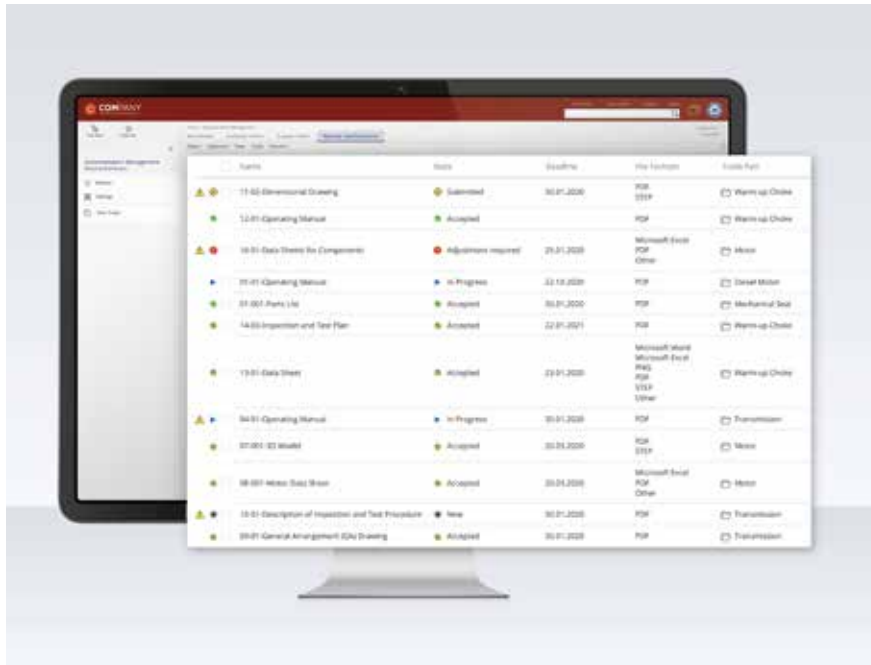
- Clearly arranged status displays and deadline management
- Evaluate in-depth quality metrics such as on-time delivery rates

Transmittal management

- Traceable business correspondence for megaprojects
- Centralized, process-driven document sharing
- Personal task lists for project team members
- Automated approval and release processes
- Digital signature capability that allows users to continue their workflow in the system they're working in

Quality and deviation management

- Defect reporting with mobile devices by means of checklists
- Workflow-supported allocation of the required corrective actions as defined in the 8D problem-solving method
- Centralized and plant-independent defect compilation to enable comprehensive reporting and automated analysis for quality improvement



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Arrange a free
consultation now
to learn more!

Document status display of technical documentation



Asset management in plant engineering

- A central information platform for all technical data and documents
- Preparation and consolidation of 3D models
- Modelable interfaces to existing third-party systems (such as planning and project management tools)

Your advantages

- A single platform for all technical data and documents
- Cloud-based and immediately available with no installation work
- Can be customized to meet specific requirements without programming skills
- Mobile apps for Android and iOS at no extra cost
- Available in 22 languages
- Two-factor authentication provides secure user recognition

- Flexible model for roles and permissions
- Several standard interfaces, e.g. for exchanging data with SAP
- Certified data protection and maximum European data security

Fabasoft is among the leading software product companies and providers of cloud services in Europe for digital document control as well as electronic document, process, and records management. Numerous well-known private enterprises and public-sector organizations have relied on Fabasoft's quality and experience for over three decades. Fabasoft products help digitalize, accelerate, simplify, and boost the quality of business processes.

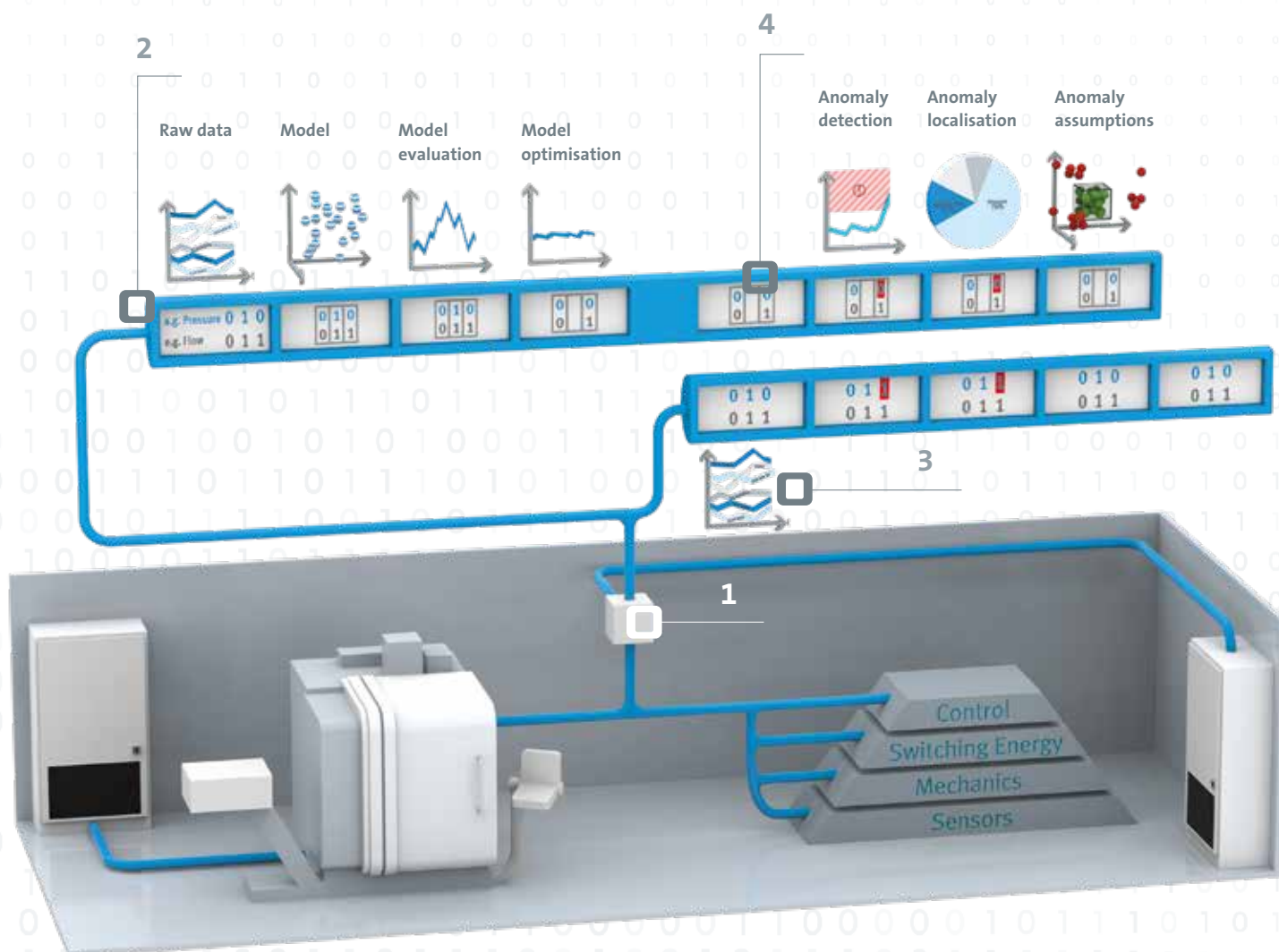


Fabasoft Approve
PROCESS SOLUTION FOR TECHNICAL DATA MANAGEMENT

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Facts for making good decisions

AI services for improved quality, greater flexibility and reduced costs



An example of an AI solution, from the sensor to the cloud



Artificial intelligence such as the Festo Automation Experience AX (Festo AX) brings preventive quality assurance, preventative energy management and preventive maintenance within reach in four steps. Festo AX delivers the modules needed to collect data from systems and machines. Using machine learning, models are trained to detect anomalies, predict errors or downtimes and correct the energy demand.

Benefits of AI services:

- Cut maintenance costs
- Reduce downtimes
- Improve system availability (OEE)
- Increase product quality
- Reduce energy consumption

1 | Connectivity

Relevant sensor, parameter or status data is consolidated on edge or in the cloud via an IoT gateway or other connectivity adapters. This can be done for different configurations:

- An individual actuator
- A sub-system
- A complete machine,
- or an entire production building.

Common protocols such as OPC-UA, MQTT and many more enable flexible integration into all systems.

2 | Historical data

Evaluating and preparing data for a “healthy” machine provide the basis for detecting anomalies and establishing measures later on.

3 | Live data

The live data is fed to the trained model during operation and an assessment about the status is then carried out on this basis in real time.

4 | Anomalies and derived measures

With the artificial intelligence of the Festo Automation Experience, changes to the machine can be detected before any downtime occurs (machine learning).

The aggregated collection of data makes the AI models more nuanced and precise over time, even if anomalies from many applications are overlapping. In addition, the knowledge is retained in the long term.

Festo Automation Experience

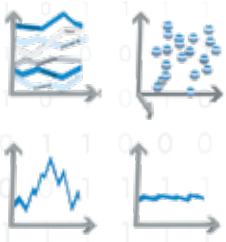
Whether on edge, on premises or in the cloud, Festo Automation Experience can be run directly on the system, on your own servers or in the cloud. Festo always provides supports in your preferred environment!

Read more about the AI services on the following pages

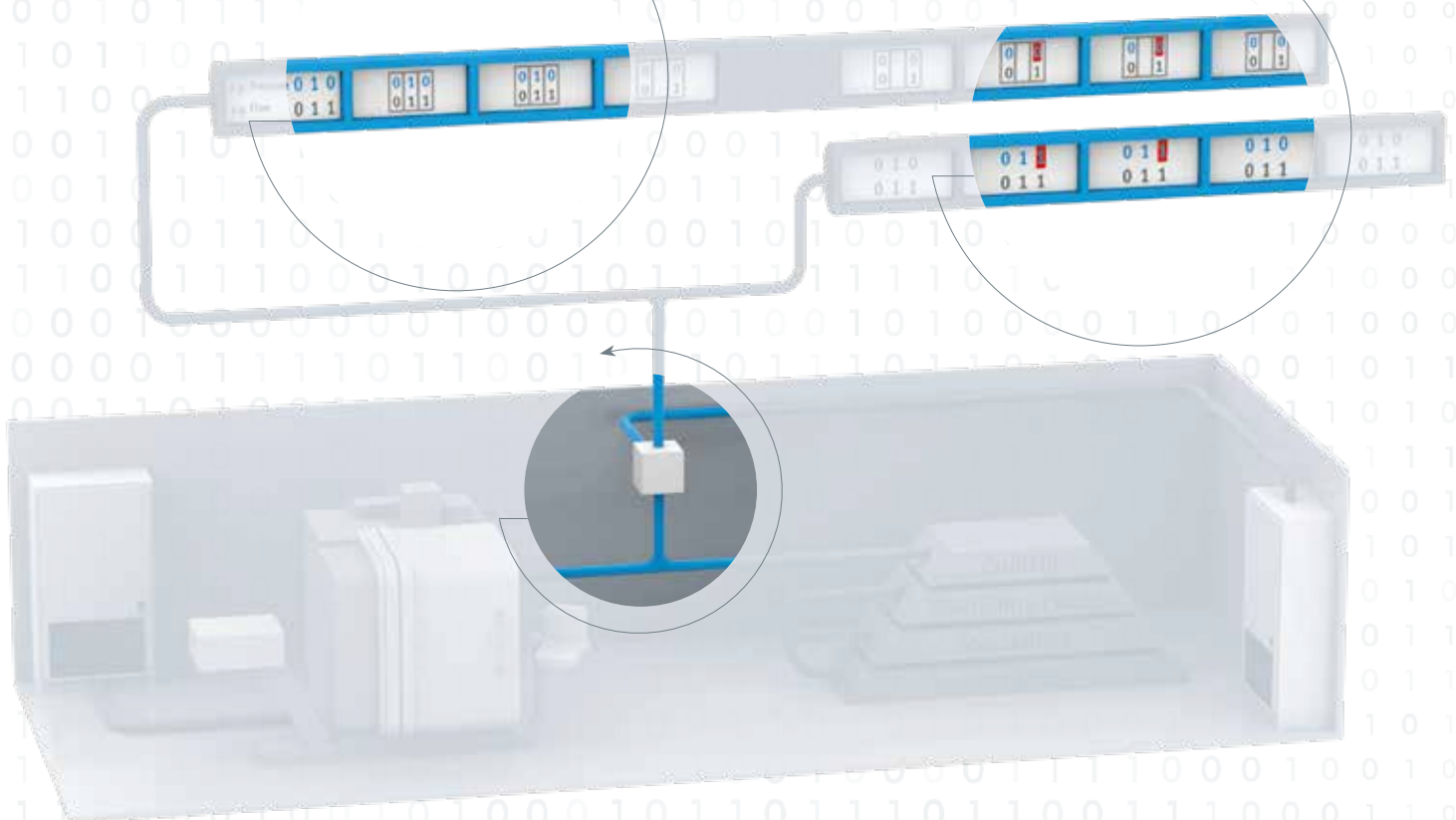
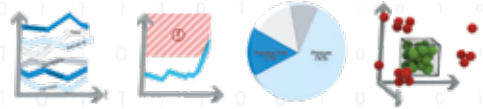
Festo Automation Experience – Festo AX

The procedure for using AI engineering services

Festo AX Data Check



Festo AX Pilotprojekt



Festo AX Connectivity Check



**Festo
Automation
Experience**

Festo AX Connectivity Check

- Create an inventory of all relevant components
- Analyse existing hardware
- Develop a rough concept for the smooth connection of our AI software Festo AX
- Recommendation for any additional hardware needed (gateways, edge devices, sensors, etc.)

Festo AX data check

- Create an inventory of historic data
- If applicable, make the data persistent
- Apply the data to our machine learning AI models
- Train an initial model
- Develop a rough concept for expanding or refining the data model

Festo AX pilot project

- Planning and implementing a custom connectivity concept, building on the Festo AX Connectivity Check package, if necessary
- Developing the AI model; building on the Festo AX Data Check package, if necessary
- Documenting the results; optionally building dashboards
- Training employees to work with the Festo AX software and user interface

Benefits at a glance



Preventive quality assurance

Improves overall production quality by continuously monitoring and analysing production data and detecting quality problems.



Preventive energy management

Optimises the energy utilisation by continuously monitoring and analysing the energy consumption and revealing anomalies.



Preventive maintenance

Predicts downtimes and reduces unscheduled downtimes by continuously monitoring and analysing system data.

**You can find more information
about Festo AX at:
www.festo.com/AX-VDMA**

**Your link to a personal
consultation**



Source: Festo



A clear view with MES – with practical AI on the way to the Smart Factory

gbo datacomp is one of the initiators of comprehensive MES solutions for medium-sized manufacturing companies. As a full-service provider with more than 35 years of project experience in the production environment, we know what we are talking about when it comes to implementing Smart Factory and Industry 4.0. Control from the private office at home, climate-friendly production, flexible access to production make it easier for our customers to master ever new challenges.

bisoftMES collects, visualizes and optimizes the operating data of various company divisions and locations. This noticeably increases the quality of products and processes. Production data, maintenance and batch data, messages and malfunctions, operator interventions and consumption are analyzed, documented and made available promptly. This ensures the ability to react at short notice, even in the event of a malfunction. We rely on AI-based digitalisation for the benefit of our customers.

Your benefits at a glance:

- Time and location-independent access to current data
- Ability to make statements and act at any time
- Transparent product and process quality
- Reduced operating and personnel costs

Our many years of know-how have been incorporated into the development of the VDMA standard sheet 66412 "MES key data" and thus into ISO 22400. To date, more than 900 system customers and around 20,000 users in more than 14 countries are working with bisoft. Our range of services includes:

- BDE (production data acquisition)
- MDE (machine data acquisition)
- PZE Personnel time recording
- FLS Production Management
- KPI ISO 22400
- Traceability
- Maintenance
- Tool Management

bisoftMES has all common interfaces to PPS/ERP and HR systems.



Digital Product Development: Holistic, Individual, Sustainable

generic.de from Karlsruhe, Germany has been developing customised software for the industry for over 20 years, making it the first partner of choice when it comes to solutions that are not just off-the-shelf. What distinguishes our applications is economic and functional sustainability as well as usability designed for complex enterprise solutions.

Sustainability due to Clean Code Development

Nowadays, software solutions must be flexible enough to adapt to changes – and at the same time remain economical. For us, the decisive factor here is the internal software quality which describes the quality of the source code. The more high-quality, descriptive, and modular the code is, the easier it can be adapted and expanded. We have found the ideal tool to fulfil this quality requirement in the principles and practices of Clean Code Development.

Benefits by using Clean Code Development:

- Long-term flexibility due to clean code
- High investment security
- Shortened “time to market”

Holistic Software Development

Invent: By using design thinking and ideation methods, we support our clients in finding and validating the right ideas.

Explore: Via requirements engineering, we analyse how these ideas can be realised. At the same time, our UX designers research how our customers’ employees work and use existing applications. Based on this, they design interaction concepts and initial interfaces.

Develop: Our solutions are developed by using agile methods such as Scrum. We work hand in hand with our customers as an agile team. By consistently working according to Clean Code Development, code quality is always the top priority for our developers.

Maintain: After the implementation, we maintain the solution and provide it with network administration, device management and support.

Learn more on our
new website.



CSR reporting? Green Deal rules? Supply Chain Act? Provide the right answers quickly with software



Let's get greener, smarter, faster!

There is no way around it – especially in manufacturing: we need to reduce CO₂ emissions, cut energy and water consumption, and minimise waste. For manufacturing companies, this is not only about environmental concerns, but also about costs.

Energy management solutions from GFT

Part of the cost aspect is regulatory requirements for climate protection, which increasingly make systematic energy management unavoidable. Fortunately, with the right software partner this is easy. GFT advises and supports you with versatile solutions for your individual sustainability roadmap.

How software can contribute to sustainability

Software can contribute more to sustainability than many people think. For example, you can build data platforms on which any system and plant can be networked to make resource consumption transparent. AI applications can be applied to this data to uncover – and implement – potential savings. Precise reports can be created automatically. And you can generally avoid a lot of waste through digitalised processes. Here are some concrete examples:

GFT Peak Load Management

Avoid expensive peak loads in energy consumption with rule- and forecast-based load management, including automatic switching operations. Open interfaces enable the connection of existing systems (e.g., MES or ERP) and the optimal use of historical records.

GFT Charging Infrastructure Management

A widely available charging infrastructure is an important prerequisite for the expansion of electromobility. Get transparency on the utilisation of the infrastructure and the individual charging processes – for energy reports, controlling, billing and to ensure operation.

Achieve sustainability goals with sphinx open online

The basis for these solutions is the open software platform “sphinx open online”, developed by the GFT Competence Centre for Industrial Solutions. It is based on a central data model that opens diverse data sources bidirectionally, maps them as digital twins and thus enables any number of business models and services.

Real-time collaboration and automated reporting with weblet

The GFT portfolio is complemented by the “weblet” project management solution for automotive and manufacturing companies. This enables collaborative work in real time across different locations and organisational forms. Multi-layered reports for different levels and roles are created at the touch of a button.

8,000 experts for your software questions

GFT has an international team of more than 8,000 software developers, implementation experts, consultants, and project managers. Artificial intelligence, data analytics, payment solutions and digital twins are just some of the competences we offer. We use equally strong partnerships as our own assets and software platforms, developed for you in the GFT competence centres. Together, we help companies from financial services, insurance, automotive and manufacturing move into the future.

We must act today to ensure productivity, efficiency, sustainability, and competitiveness in the future! In times of change, a modern economy needs innovative and flexible solutions that effectively help improve processes, optimize the use of resources and aid overall corporate planning. GFOS develops tailor-made IT solutions for Workforce Management, Manufacturing Execution Systems and Corporate Security – an ideal partner and pioneer for New Work and Smart Factory.



Source: © Adobe Stock | Gorodenkoff

GFOS – Designing the Future of Work



**Designing the
Future of Work**

For over 30 years, IT specialists at GFOS have been designing and developing software that supports day-to-day business to make processes measurably more effective. The result is a powerful Manufacturing Execution System that supports companies in the manufacturing industry in sustainably increasing productivity and effectiveness – while at the same time optimizing the use of resources. Our customers' individual requirements in the manufacturing sector are just as much a focus as the challenges of potential buyers. We therefore offer solutions for production that are modular and flexible. They always focus on users: intuitive handling, powerful concepts for on-premise or hosting applications and personal service.

We are shaping the industrial working world of tomorrow together with our customers. This means constantly developing products and services – because our customers rely on us! In addition, we work with equally innovative partners to offer the appropriate hardware from a single source or to make the integration of

artificial intelligence possible. Only good and close cooperation and the will to innovate lead to high-quality IT solutions and thus to increased effectiveness and efficiency.

GFOS is a family-run business and one of the market leaders for professional software concepts in the areas of Workforce Management, Manufacturing Execution Systems and Corporate Security. Companies of all sizes and from all sectors use our IT solutions successfully around the world – you too can become part of the GFOS family.



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Internet www.gfos.com/en



IFS Cloud – The Future of Enterprise Software

IFS develops and delivers cloud enterprise software for companies around the world who manufacture and distribute goods, build and maintain assets, and manage service-focused operations. Within our single platform, our industry specific products are innately connected to a single data model and use embedded digital innovation so that our customers can be their best when it really matters to their customers – at the Moment of Service™. The industry expertise of our people and of our growing ecosystem, together with a commitment to deliver value at every single step, has made IFS a recognized leader and the most recommended supplier in our sector. Our team of 4,500 employees every day live our values of agility, trustworthiness and collaboration in how we support our 10,000+ customers.

IFS has become the first enterprise technology vendor to deliver Enterprise Resource Planning (ERP), Human Capital Management (HCM), Customer Relationship Management (CRM), Enterprise Asset Management (EAM) and Service Management and unified them into one single product and as such, breaks down product and data silos within organizations.

With IFS Cloud™, IFS offers a unique and single technology platform with one common user experience, one data model and one consistent support offering. IFS Cloud™ brings simplicity, choice and innovation to organizations that need to evolve, adopt new business models, control costs, expand faster and serve their customers better. By implementing IFS Cloud, companies can easily scale and simply switch on new functionality (such as additional modules or new innovative capabilities) when the time is right for their business. We still cater to our five core industries and the sub industries within them, we notice the need for composable ERP as the market changes and we are absolutely delivering that.



One Step Ahead: Consistency, Resilience and Sustainability in Production due to Intelligent Planning Tool



The image features a worker in a yellow hard hat and dark jacket operating industrial machinery in a factory setting. A large, semi-transparent teal overlay is positioned in the upper half of the image, containing the word "FELIOS" in large white letters. Surrounding the central text are various functional areas of the tool, listed in white text:

- Machine Learning
- Strategic Capacity Requirement Planning
- Construction Planning
- Assembly Planning
- Consulting Expertise
- Project / Supply Chain Management
- Shift / Workforce Management
- BI / Key Performance Indicators
- Production Planning
- Procurement / Inventory Optimization



The challenges for machine and system manufacturers are numerous: timeliness, customer satisfaction, short delivery times as well as quality, sustainability, early transparency about disruptions and resilience. The COVID-19 situation brought additional problems and put companies to the test. A constant companion in mastering these tasks: the intelligent production planning system FELIOS.

The system is designed to meet the requirements of machine and system manufacturers and their complex production structures, and is constantly being developed further, based on 30 years of experience in the industry, as well as the active exchange with users. In addition to existing ERP systems, the intelligent real-time optimization of the solution enables cross-divisional synchronization of all delivery dates with market requirements. FELIOS supports numerous renowned machine and system manufacturers in expanding their market position, improving their ability to communicate reliable information to customers and consistently increasing sales and efficiency.

The realistic planning helps machine and system manufacturers as well as individual and small batch manufacturers to stand out from their competitors and to convince in global competition with high-quality products. A special feature of FELIOS compared to conventional systems is the realistic planning against limited capacities. Complex order networks, small batch sizes and multi-

layered processes make production difficult to manage. The intelligent production planning system answers the important decision question of when which production steps can be planned realistically with which resources and procured parts.

FELIOS paves the way for an agile, self-organizing production by offering concrete solutions, thanks to the following competitive advantages.

Added values reached by using FELIOS:

- Improved adherence to schedule
- Short lead time
- Maximum production efficiency
- Transparency in supply chain
- Planning and deadline security

The algorithmic support optimizes and improves the planning many times over – even with inaccurate specifications and data, realistic dates are calculated thanks to AI and fuzzy logic components. The results are short production cycles with minimum inventory in circulation and high adherence to schedules. Furthermore, the integrated operating and machine data acquisition allows the recording of actual data of all production processes and monitoring of the production machines and plants. Functions for shift and employee scheduling, as well as project and assembly planning, complement the software solution. The corresponding key figures are available mobile and in real time.

The full transparency from purchasing to production and assembly simplifies the cross-departmental flow of information. Additional machine learning applications help to consistently improve production planning.

Find out more at www.felios.com



Fit for the Smart Factory with MES and MOM solutions from iTAC



iTAC Software AG, an independent company of the mechanical and plant engineering group Dürr AG, is one of the leading manufacturers of MES and MOM solutions. With the iTAC.MOM.Suite, it offers a holistic manufacturing management system that equips companies in various industries worldwide, such as automotive, electronics/EMS, telecommunications, medical technology, metal industry and energy, for the requirements of today and tomorrow.

As a fully comprehensive system, the iTAC.MOM.Suite combines typical MES functions with complementary solutions for controlling, optimizing and forecasting production processes in real time. It functionally covers all processes that take place on the shopfloor, i.e. in the production area, and offers a large number of interfaces to higher-level systems (ERP, PLM, etc.) for the purpose of interoperability. The solution is based on an open and service-oriented architecture and integrates seamlessly into existing system landscapes.

By integrating analytics functionalities, the iTAC.MOM.Suite opens up new possibilities for predicting production results based on captured IIoT and MES data. These predictions can address quality and production performance as well as potential manufacturing downtime. Through prevention and prediction services as well as on the basis of edge technologies, process improvements with increased added value and data sovereignty are generated.





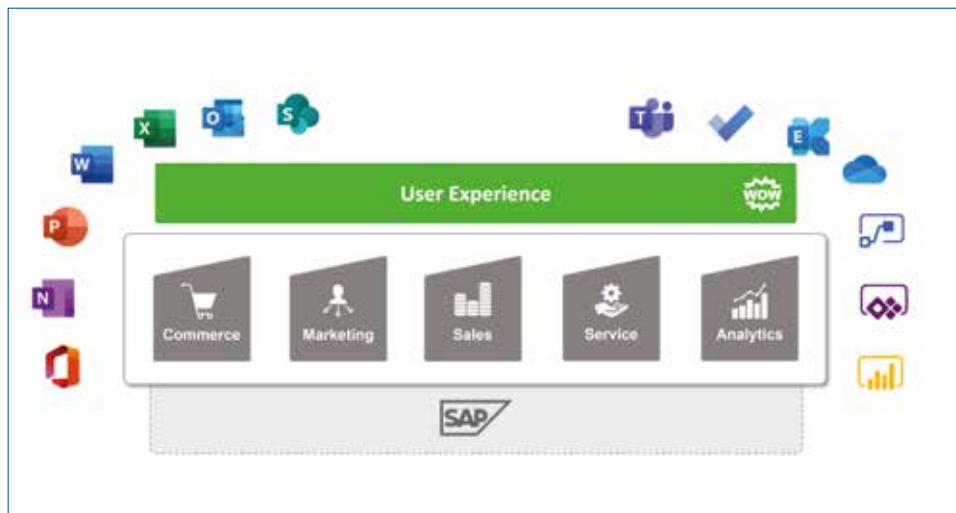
The iTAC.MOM.Suite is based on the most up-to-date technological standards. This ensures that the customer can participate in innovation cycles that are emerging worldwide in the long term. The integration of low-code applications for the simplified integration of customer-specific process flows is just one central component of iTAC's MOM architecture.

Additional systems and solutions for the implementation of IIoT and Industry 4.0 requirements complete iTAC's portfolio. iTAC Software AG is headquartered in Montabaur, Germany, and has subsidiaries in the USA, China and Japan, as well as a global partner network for customer support and system service. iTAC's philosophy is to connect people, data and systems.

iTAC and Dürr: **joint digitization expertise**

iTAC collaborates closely with the parent company Dürr. The Dürr Group is one of the world's leading mechanical and plant engineering companies with strong expertise in the areas of automation and digitalization/ Industry 4.0. Dürr's products, systems and services enable highly efficient manufacturing processes in a variety of industries. Dürr supplies sectors such as the automotive industry, mechanical engineering, chemicals, pharmaceuticals and the woodworking industry. The company has 92 locations in 32 countries and 16,500 employees worldwide.

itmX GmbH is a subsidiary of the NTT Data Business Solutions Group, which has specialized in end-to-end processes in the areas of marketing, sales and service for more than 20 years. The innovative solutions inspire our customers from the industries of mechanical and plant engineering, construction supply and trade. In addition to the software suite, itmX offers holistic process consulting, from strategy planning and an initial proof of concept to individual design, implementation and operation of the software.



The best CRM based on SAP for mechanical and plant engineering



Unique user experience in all processes

The itmX crm suite unifies all your business processes and completely maps the individual customer journey of your clients. From the first contact in marketing to contact maintenance and opportunity follow-up in sales to the execution of services and spare parts orders, all processes can be displayed transparently and clearly. Due to the complete integration into your SAP and the Microsoft world, you benefit from:

- Holistic 360° view of your customers, whether on leads, sales projects, complaints, invoices or the financial status from your SAP ERP.
- Unique and customizable user experience for all users
- Seamless integration or connection of third-party solutions, such as CPQ

Add momentum to your lead-to-after-sales process, delight your customers with personalized customer experiences, and deliver an outstanding customer service.

The best of both worlds – SAP and Microsoft

Thanks to the hybrid cloud architecture, you keep your data on-premise in your SAP system and can simultaneously access the application in the cloud via Microsoft Azure components. You also benefit from optimized and automated processes that provide added value for all users using existing M365 tools and the itmX crm suite.

Success stories from over 20 years of CRM expertise in mechanical engineering

Every customer is unique and has very individual requirements for the CRM system – especially regarding holistic and integrated processes. Convince yourself of our expertise and learn more about the project experiences of our customers in mechanical and plant engineering – one of our core industries.

Find out how itmX can also help you take your customer experience to the next level.

“We really appreciate the partnership we have with itmX. We have fought many battles together and there are many more to come.”

Manuel Keilich, BRÜCKNER Maschinenbau GmbH & Co. KG

Click here
for the
Success
Story:



Click here
to explore
the expertise
page:



Experts are convinced that in 5 years, 20% of machine builder's turnover will come from digital services. IXON supports you as a partner to go this way - from the connectivity of your machines to the development of new data-driven business models.



Get the most out of remote access and generate new revenue



IXON Cloud is the platform that makes remote access and IIoT simple and accessible for every machine builder. With the complete all-in-one solution, consisting of an industrial router and cloud platform, machines are online in a matter of minutes.

Secure connectivity

The key to secure remote access via the IXON Cloud is the IXrouter. The router and the cloud platform are equipped with the highest security measures to protect the company network and customer data. This is proven by recognised security certificates such as ISO 27001 and IEC 62443, and is ensured by regular penetration tests and audits. Moreover, IXON's edge hardware only uses outgoing ports to establish a secure connection to the IXON Cloud – no need to open any incoming ports on the local firewall within your company network.

Ready for the future

The IXON solution offers **more than just remote access** to machines. Specifically, this means that machine data can also be aggregated and visualised via the IXON Cloud. Data dashboards can be individually created on your requirement – and

via the extended user management system shared to different groups (such as your technicians or your customers) in a customised way. The openness of the platform means there is no lock-in effect. Additionally external tools that add functionality to the IXON Cloud can be integrated effortlessly. This allows you to grow in the future and meet all your IIoT needs that might arise in five years from now.

New business opportunities

The IXON Cloud opens up new opportunities for you to generate revenue. From branding the router and platform, and offering it to your customers as your own solution – to entirely new business models. Optimise the efficiency of your field service, benefit from extended service level agreements (based on your machine data) and learn from your machines to design them more cost-efficiently in the future.

In five years, 20% of revenue in mechanical engineering will come from digital services. Wondering how you can stay one step ahead of your competition? We explain how:



IXON B.V. • Zuster Bloemstraat 20 • 5835 Beugen • The Netherlands
Phone +49 284 17879010 • E-Mail info@ixon.cloud
Internet www.ixon.cloud



Enjoy the
**KUMA-
EFFECT!**

Fit for the digital transformation – with KUMAVISION ERP

More than just ERP software

Innovative business models such as pay-per-use or predictive maintenance require business software that is both flexible and modern. Changing customer requirements and growing markets abroad need sales processes that are both transparent and efficient. Strategic and operative decisions are not possible in an agile competitive environment without up-to-date key figures. Batch size 1 on the terms of series production is inconceivable without seamless interaction along the entire supply chain. Long-term customer loyalty is the result of excellent customer service. And decentralised teams need smart tools for successful collaboration.

KUMAVISION provides you with the right tools to master these challenges with ease. Because KUMAVISION's vertical software for the manufacturing industry is based on the globally unique technology platform Microsoft Dynamics 365. Whether industry-specific ERP functionality, CRM solutions for sales, service and marketing, whether business intelligence, Office 365 or Teams, whether Internet of Things (IoT) or artificial intelligence (AI): the technology platform includes all the necessary applications – all without data silos and interface problems.

Optimal industry orientation

Perfect for all manufacturing companies like engineering, plant engineering, build to order and series production: KUMAVISION's modern industry software based on Microsoft Dynamics 365 creates efficient, transparent and, above all, continuous business processes. From lead generation to delivery, from quotation calculation to invoicing, from procurement to production – with KUMAVISION you do everything in one system. Benefit from numerous best-practice processes for machine, plant, equipment and apparatus construction as well as for prototype production. Profit from our 25 years of experience in the industry and our know-how from more than 2,000 successfully implemented projects in Germany and abroad.

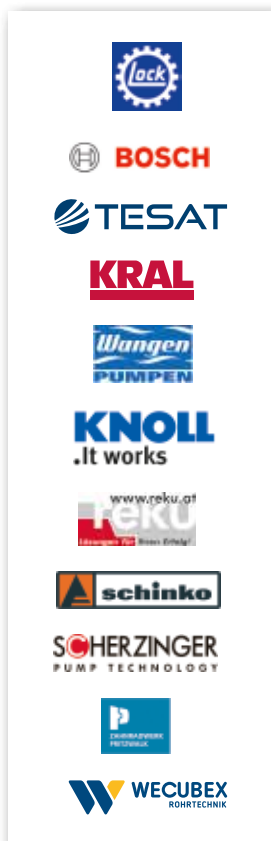
Real customer proximity

More than 850 consultants and technology experts work at numerous locations in Germany, Austria, Switzerland and Italy. The result: fast response times and short distances to our customers.

With PiT® - Produzieren im Takt LF Consult specializes in optimizing production for single item and small batch series manufacturers. Using the cycle-oriented planning approach, capacity planning becomes feasible and efficient.



Remain on schedule and transparent in real-time with 3Liter-PPS®



In this age of control centers, companies try to get a grip on delivery dates and lead times by increasingly detailed planning – which fails in view of ever-growing disturbance variables. Lack of transparency, unrealistic deadlines as well as huge expenditure are frequent characteristics of planning disorders.

3Liter-PPS® –

The brilliantly simple planning tool

This is exactly where the LF Consult production system PiT® – Produzieren im Takt comes into play. 3Liter-PPS® is the only software that incorporates the approach of cycle-oriented planning. In a higher-level planning fixed deadlines are specified based on cycles. Within these cycles, teams can independently plan the sequence of their orders and respond to disruptions in their own responsibility. The timely and transparent provision of information from planning to the shopfloor and vice versa is the basic requirement for an agile and efficient organization.

With 3Liter-PPS® you always have the right information in the right place.

3Liter-PPS® enables capacity-validated planning in real-time, guaranteeing an overview of the value chain at any time. Whether detailed information on an order, the retrieval of material, the management of work sequences or order picking and transport, 3Liter-PPS® enables employees to connect to receive the information mandatory for timely processing. Key performance indicators give an overview of where deviations occur. The digital shop floor management immediately shows the measures necessary to achieve the defined goals. Incidents and tasks can be created and tracked in the form of tickets. Everyone has access to the latest information. There is only one central communication platform, promoting the acceptance and motivation of the employees.

Many renowned companies have already successfully implemented cycle-planning with 3Liter-PPS®, thereby reducing their order lead times by up to 50% and stocks by up to 30% while increasing adherence to delivery dates to more than 98%.

The Business-IT-Experte in the Manufacturing Industry



Innovative industry solutions make a difference.

MODUS Consult is the certified top partner of Microsoft Business Solutions in Germany. As an industry expert, we combine our comprehensive know-how of different manufacturing types in our IT industry solutions: Our customers engineer or make to order, produce variants, synchronized or in batches. And often in mixed ways. As an industry expert, we have solutions in mechanical and plant engineering, that have won Microsoft awards for 25 years.

We rely on the most innovative platform for medium-sized businesses: Microsoft Dynamics 365. We live IT, services and industrial applications in a well-thought-out and process-oriented way.

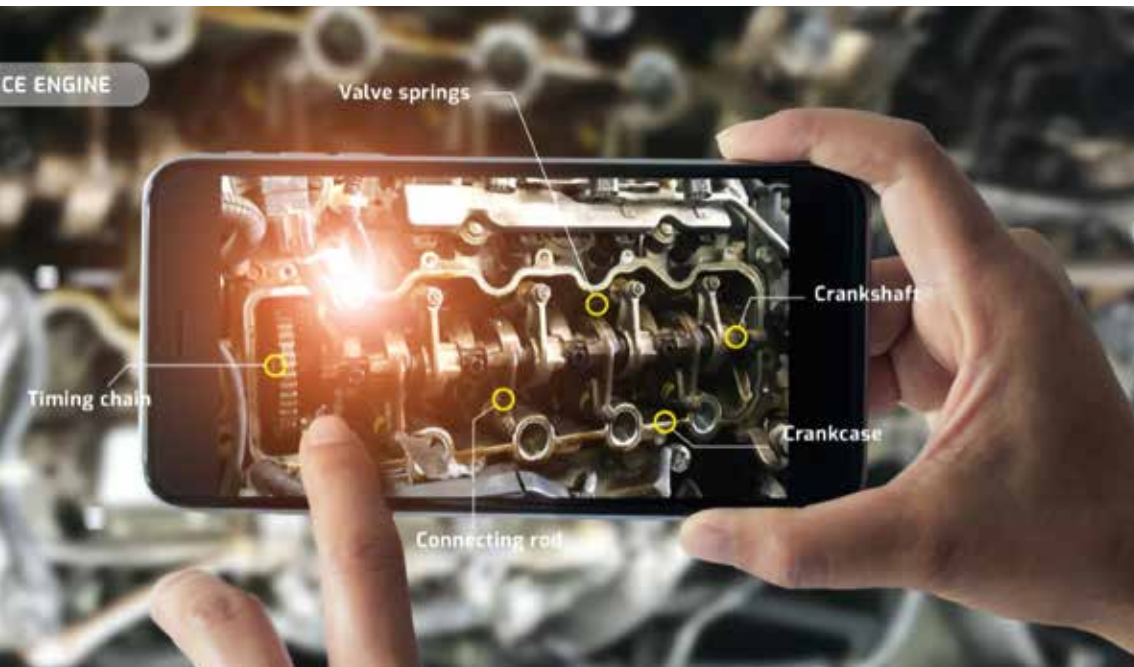
The next level of your business IT

We listen, understand and design the next level of your business with you. Turn individual systems for ERP, ECM, and BI into a comprehensive platform! With our innovative hybrid approach, we protect your investments and drive the automation of your administrative processes and the digitization of your value creation processes.

Machine maintenance with Microsoft Teams and the Remote Assistant

Perform machine and other maintenance easily digitally from any location with Microsoft Teams and the Remote Assistant. All you need is a smartphone, tablet, or HoloLens. Enable your customers to get service support from their home office and save travel costs and time. Start now! The implementation of Remote services happens within 48h.





New service level for your customers

An optimal production process with flexibility and holistic business software makes machine and plant manufacturers fast and high quality. With machine service, you experience a new service level for your customers. The fully integrated ERP software for machine and plant engineering is a high performer in interaction with CAD, PowerApps and Office 365.

Some features at a glance:

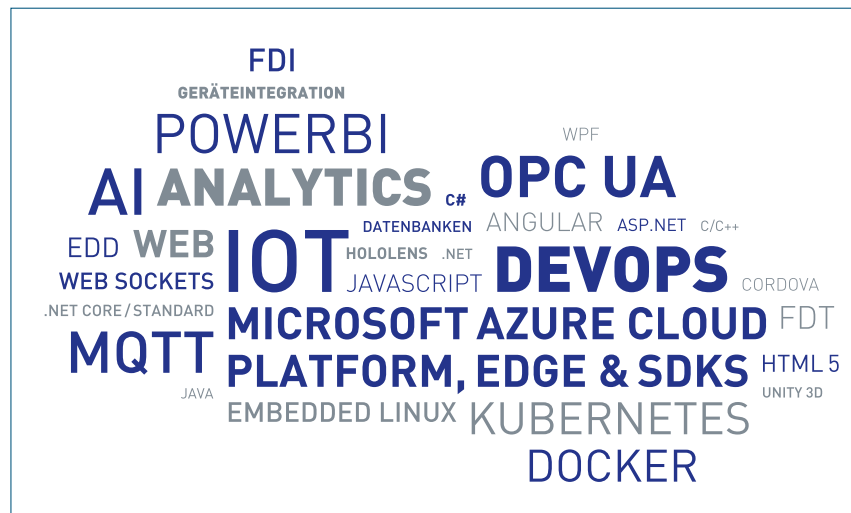
- CAD & PDM integration
- Construction-accompanying manufacturing
- Project-oriented manufacturing (one-off production)
- Long-run planning
- Graphical production planning and simulation
- Traffic light controlled online schedule and cost control

- Variant management
- Maximum bills of material and make-to-stock production
- Down payment accounting according to valid tax law
- Bonus, commission, and tipster management
- Service integration
- HTML text editor for use in documents
- Project and item costing
- Remote Assist machine service

Your right IT partner

MODUS Consult is your consultant, sparring partner and process companion: from better integration of office files and optimized data preparation to next level business IT. Today in hybrid operation, tomorrow in the cloud.

Digitalization and Industry 4.0 are creating new challenges for mechanical engineering – especially in software. M&M Software is an experienced partner with comprehensive technology and industry know-how who fully supports you in the realization of your software projects.



Customized Software Solutions for Mechanical Engineering New Technologies Boost Cost-Effectiveness and Competitiveness

From Initial Vision to Finished Product

Your company has a clear demand: You would like to realize your vision of a software solution that fulfills tasks such as engineering, operating & monitoring, monitoring of machines, plants, and devices. The realization of your software solution has to be technologically up-to-date and future oriented. The solution should also generate added value for your company.

Our range of services addresses modern technology trends with a focus on digitalization and Industry 4.0. M&M Software offers a wide range of applications for the mechanical engineering, factory/process and building automation, power engineering and related industries:

- Cloud/Edge/IoT applications
- Artificial Intelligence & Data Analytics Solutions
- classic desktop applications
- web-based & mobile solutions
- hardware-related software & connectivity solutions for embedded operating systems
- device configuration and parameterization

Artificial Intelligence:

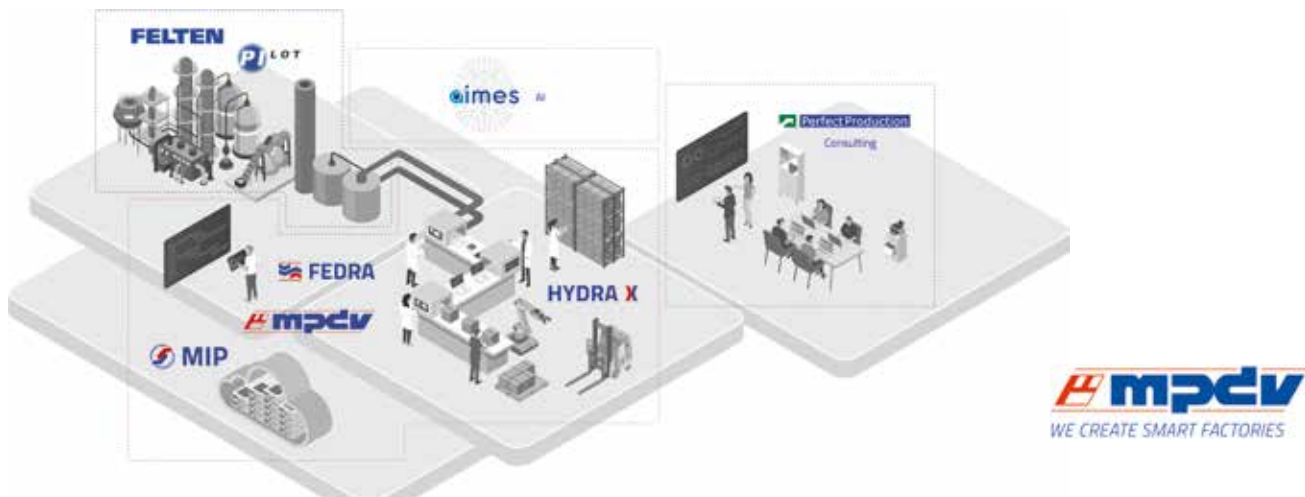
New Opportunities through Systematic Data Evaluation

Every company already accumulates countless data that offer enormous potential, for example, to optimize processes or establish additional digital services. This data can generate measurable added value for your company. In cooperation with the Karlsruhe Institute of Technology (KIT), we analyze the potential of your data and implement your AI solution.

Edge Computing:

The Cloud's Strong Partner

Your company wants to use the technologies deployed in the Cloud. But at the same time, you want to process generated data on-site first and decide for yourself which data is sent to the Cloud for further processing. With Industrial Edge Computing, a powerful concept is available that meets the requirements for data sovereignty, security, and performance. M&M Software is an expert in all aspects of Edge Computing and offers competent consulting and development services.



The MPDV Group – We create Smart Factories

We, the MPDV Group, are the market leader for IT solutions in manufacturing. We offer products, solutions and services based on a broad expertise. We support companies of all sizes and from all industries on their way to the Smart Factory.

“We”

... stands for around 500 employees of MPDV. After all, it is the people who define a company. Every day, MPDV's teams develop smart manufacturing solutions. They have made MPDV what we are today with their passion for high-quality products, knowledge and team spirit - the market leader for IT solutions in manufacturing with more than 40 years of experience in the production environment.

“Create”

... stands for what MPDV is doing. We are driving digitalization in manufacturing making companies competitive. We always have the finger on the pulse and know the needs of our customers very well. We operate competence centers, are in constant exchange with our users and further develop solutions according to requirements. To do so, we focus on the essentials and thereby stand out from the crowd.

“Smart Factories”

...is the vision of a self-regulating factory of the future where machines and logistics systems organize themselves as independently as possible. MPDV supports companies in turning this vision into reality. We make a key contribution with our products to ensure that factories evolve into true Smart Factories and stay at the cutting edge of technology. The focus continues to be on people as an integral part of creating value.

**The MPDV Group –
We create Smart Factories**



In the course of advancing digitization, more and more companies from the manufacturing and construction industries are dealing with the Digital twin. Due to the increasing amount of data and special software solutions, it is becoming more and more important to have a central entry point. It does not matter whether information about products in use by the customer or about shop floor processes is required. Do you even need a digital factory or a digital image of a building? The simple, user-centered processing of information forms the basis for well-founded decisions and creates competitive advantages.



The Digital twin as a central and cross-system access point to data



The basis for the Digital twin is a virtual 3D model of a physical system such as a machine, an entire production environment or a building. This model is enriched with real-time or sensor data (e. g. temperature, pressure) as well as information from a large number of IT systems and depicts the physical system dynamically.

With the help of the Digital twin, for example, clear real-time monitoring can be carried out to monitor and optimize your own machines or production environments or those implemented at the customer's site. In addition, the real-time data can be used to identify wear and tear or maintenance cases at an early stage, which can then be eliminated in advance. In terms of manufacturing companies, Digital twins are also suitable for prototyping or simulating processes and product behavior. In addition, processes can be automated based on current data using workflows. There is also a multitude of possible uses in buildings. Here, with the help of a Digital twin, real-time energy monitoring can take place or malfunctions can be detected at an early stage. The most important prerequisites for the use of a Digital twin and the digitization of companies are consistent processes and data flows as well as an

integrated IT landscape. Therefore, for the Digital twin, all systems along the value chain must be networked with one another: from construction (CAD system), product data management (PDM system), through the ERP system to machine control (MES system). Data from BIM and CAFM systems are also used to map entire factories or buildings. This is the only way to use the full potential of the data, which forms the basis for well-founded decisions.

Your partner for digitization in medium-sized companies

The digitization of companies through the integration of IT systems and processes along the entire value chain requires a competent partner. N + P Informationssysteme GmbH combines 30 years of project experience and IT competence for the manufacturing and construction industry in medium-sized companies. Our teams support customers throughout Germany with the conception and IT implementation of their digital agenda.

Learn more about N+P at
www.nupis.de and accelerate
 your digital agenda with our
 free digitization workshop



The sales and distribution of machinery and plant engineering requires the assistance of several business units. The CREALIS® CPQ approval process allows experts from all relevant departments to be involved in the complex process of configuration and quotation as well as to improve the efficiency and gain acceptance of all involved parties.



CREALIS® CPQ combines business processes and product configuration



With CREALIS® CPQ extensive configuration and quotation processes are depicted conveniently independent of complex company structures and product varieties. The vital part is the product configuration and the finding of product variations.

Supporting functions as guided selling, favourites and standard versions provide existing knowledge about product characteristics. Furthermore different perspectives on outstanding questions and thus approval decisions can be defined, which will apply throughout the entire selling process. Central administrative structures with respective authorization categories complete the productive solution.

The approval processes of CREALIS® CPQ are the central tool to effectively support manufacturing companies. When products of a company are subject to a strongly structural component and are ranged in the ETO (engineer to order) area, all departments from Design, Price calculation, Product Management to Sales have to fulfill their

tasks in the quotation process. This includes the connection of simulations, the component integration of external suppliers as well as the output in CAD and CIM systems. Questions concerning the calculation and pricing in international environment and in the development of new markets, uncertain operational scenarios or supplier dependencies require various responsible parties along the quotation and selling process. CREALIS® CPQ ensures, that the process from the enquiry of a potential customer to the correct proposal will be reviewed and processed by all involved departments.

For more than 30 years the ORISA Software GmbH has been a leading software and consulting provider for manufacturers of complex goods in the area of product configuration, CPQ and knowledge management. CREALIS® CPQ has been implemented by companies in the machinery and plant engineering, medical engineering, tool engineering and the logistics sector.



The New Portal for your Calibration



100 % Digitalisation for the Management of Measuring Equipment

Audit-proof – paperless – timesaving

You want to be reminded automatically to your measuring equipment due for calibration? Or remind your colleagues automatically? Even during your absence? Reliable and audit-proof? The portal trendic® hub for the digital management of measuring equipment offers, among many other useful functions, an automatic reminder including warning, if necessary.

Manage your calibration records online, simple and audit-proof

Discover the modern online platform trendic® hub. The portal assists with the safe and simple management of measuring equipment and offers extensive and effective management tools. The results are available directly after calibration – in the workplace or on mobile devices.

The advantages at a glance

- Simple use
- Low costs
- Safety during the audit

- No software installation necessary (data is located on German servers)
- Can be used for several suppliers

Digitalisation in production offers many advantages and is proceeding with a great speed. With Perschmann Calibration and trendic® hub you keep pace without any problems.

Expert for calibration services

As a service provider for the calibration of measuring equipment Perschmann Calibration is executing up to 3,000 daily calibrations, in the laboratory or on-site at customers' premises. This means that they are Germany's biggest service provider in this special field.

The extensive accreditation provides security for the customers during an audit. With the customised evaluation system, the laboratory sets standards for customers' benefit.

Our experts are at your disposal

Our trendic® hotline would be pleased to answer all your questions: phone +49 53047 933-550
trendic@perschmann-calibration.de



Products composed of numerous components, changes on short notice after production has started, high demands on delivery reliability and reliable service are only a few examples of the challenges companies in the mechanical and plant engineering sector have to face.



ERP for Mechanical and Plant Engineering



Highlights of the solution:

- The integration of all divisions allows the creation of transparent and individual quotes.
- Processes and resources can be coordinated more easily thanks to planning and control across projects.
- proALPHA CA-Link creates seamless processes between the engineering department, purchasing, and production.
- Precise production planning and control allows for dynamic production and thus exact procurement dates.
- Continuous costing enables seamless cost control and full cost transparency.

A Partner Who Understands Your Needs

For around three decades, proALPHA has been the digital sparring partner for small and medium-sized businesses. The powerful ERP core and add-on solutions form the digital backbone of the entire value chain of more than 7,700 customers. The more than 1,700 people who work for proALPHA are developing a digital solution platform that gives SMEs the competitive edge they need to master the constant process of transformation and change.

References

A reference can often say more than a thousand words. See for yourself!

www.proalpha.com/en/references/

Focus on the Future

proALPHA works with renowned research institutes on topics relevant to the industry. This includes SmartFactory KL and Center Enterprise Resource Planning (CERP) on the campus of RWTH Aachen. The company also takes an active part in associations and industry networks of small and mid-sized enterprises.

Achieving More Together

Best Practices – users help users: proALPHA has always promoted the exchange between users and specifically engages in dialog where the further development of the ERP software is concerned. An important platform here is the proALPHA User Group (AWK) which regularly invites customers to exchange their experiences. In work groups, we systematically determine which areas require attention in mechanical and plant engineering and discuss the possible technological solutions. This intensive exchange is the basis for more success and innovation in practice.

The digitalization of product development, manufacturing and service calls for efficient product lifecycle management. PLM is the backbone for the digital twin, without which neither Industry 4.0 nor new, service-oriented business models would work. As a vendor-neutral PLM consulting and software house, PROSTEP provides small and medium-sized customers in the field of mechanical and plant engineering with support for their digital transformation and makes them fit for the fourth industrial revolution.



PROSTEP – Your digitalization expert



PROSTEP is the leading PLM think tank with more than 25 years of experience in the market. Openness and neutrality are our hallmarks. We maintain close ties to all leading PLM vendors, renowned research institutes and major customers, who have been placing their trust in our services for years.

Our specialties include PLM strategy consulting and process optimization, system selection and implementation, PLM integration and migration, as well as secure data exchange and conversion. At PROSTEP, everything comes from a single source – from the initial concept through to the implementation and commissioning of your PLM solution.

OUR MAIN FOCAL POINTS:

Engineering:

Our PLM experts provide you with advice and support when creating a digital product development platform and integrating this platform in your existing PLM systems and processes. This includes the selection and implementation of new CAD and PLM systems and the migration of existing data.

Manufacturing:

We provide you with advice and support when it comes to ensuring end-to-end digitalization at the interface between product development and manufacturing, thus laying the foundation for digitalizing your production processes and implementing sustainable Industry 4.0 initiatives.

Information:

We also provide you with advice and support for the end-to-end provision and exploitation of your digital product information in downstream business processes. We also offer a comprehensive service to digitize your existing production facility.

Collaboration:

We provide you with advice and support when integrating partners and suppliers in your PLM systems and processes. We offer you a comprehensive portfolio of solutions for secure data exchange and cross-company collaboration, including a PLM-supported collaboration platform.

For more than 50 years, PSI has been developing software products and customized solutions for the entire value chain of manufacturing companies with a focus on production planning, production control and logistics. These contribute significantly to optimizing the use of resources and increasing quality and efficiency. The modern PSI platform based on Java technology forms the common powerful basis of all products. Thus, PSI combines industrial process knowledge from five decades with the entire spectrum of methods of artificial intelligence.



Industrial Intelligence for Production and Logistics

The integrated software portfolio for production processes covers the entire supply chain and ranges from planning to control at machine level. The product portfolio includes technologically and functionally leading products from the areas of ERP, MES, SCM, WMS and SCADA, which are used both in medium-sized companies and in corporate groups. Integrated logistics optimization, multimodal transport planning, transport optimization, a cloud-based IoT service platform and an AI-based workforce management system complete the product range.

The modern PSI software platform is based on Java and global standards such as the Eclipse Modeling Framework, which makes users of PSI products independent of technology cycles, database and operating system vendors. Integrated business process modeling allows the business logic to be easily and individually mapped in the software and automated through workflows. This enables an extremely fast adaptation of the processes to new requirements.

The likewise integrated PSI-Click-Design offers individually adaptable user interfaces, which can be changed at runtime using drag & drop and saved in profiles so that the software adapts individually to the requirements of the users. User interfaces and PSI Click Design are available identically for desktop clients, web interfaces and mobile applications. The platform-based industry products are sold both directly and via the multi-cloud PSI App Store and can be customized by customers and partners themselves using workflow modeling and PSI Click Design.

As one of the most experienced industrial AI providers, PSI has been successfully using industrial artificial intelligence methods for predictive production optimization for more than ten years. Learning optimization based on Extended Fuzzy Logic, Machine Learning and Neural Networks enables significant efficiency increases in Advanced Planning & Scheduling without the customer having to be an AI expert himself.

Reducing costs and increasing efficiency with new standards – that is the goal. Digitization, IoT or Industry 4.0 interpret this goal for all business processes. Companies need new structures and intelligent solutions. Digitized testing processes are part of this goal. Used correctly, they can increase productivity, increase quality, evaluate production processes, increase transparency and provide important data for follow-up processes.



Measure. Test. Evaluate. Software for complex test tasks and test automation



Intelligent functions for more product quality.

SonicTC is a universally applicable measurement and testing software. The idea for the development of SonicTC was to map the large number of individual test tasks in everyday industrial routine in just one standardized software solution. The first challenge in development: to fulfil the wide range of applications, with sometimes highly complex test scenarios and without leveling things out. The second challenge: to program software as a standard that allows the user to configure their own test tasks without programming knowledge, as a kind of “shop” with “drag & drop” function.

Module library and a self-explanatory user interface.

Quality tests are carried out destructively, optically, non-destructively, acoustically, tactilely and of course metrologically. Due to the modular basic structure of the software, SonicTC can map the diverse variants of these “testing tasks”. SonicTC goes one step further, all measurement data can also be correlated with each other, in

order to make the evaluation of the results even more meaningful. The module library provides the user with a comprehensive collection of properties, functions and characteristics for different test scenarios. From this, the user configures the performance of SonicTC intuitively and in defined steps, from signal measurement and data analysis to measurement data evaluation and their correlations. In addition, SonicTC can be used to develop intelligent algorithms for data evaluation and result reporting.

Integration. efficiency. connectivity.

An indispensable requirement for the universal use of testing software, such as SonicTC, in testing machine construction, is the ability to easily integrate it into automated manufacturing processes. The possibility of connecting to the overall system via existing industrial communication interfaces is also necessary. SonicTC offers integrated libraries for all common interfaces and communication protocols. These ensure smooth integration into the automation process.





FLEXIBLE, PROJECTABLE, INDUSTRY-RELATED

SIVAS.ERP – Customized ERP Solutions

Our industry-specific profiles for machine construction and plant engineering offer best-practice solutions for each user. We understand the language of this industry and support their digital transformation.

High standard – low customizing.

With SIVAS.ERP you take advantage of standard processes reproducing the demands of midsize plant and contract manufacturers. Further, you can adapt our standard to your own processes without programming effort. With our ERP from one source, you dispose all production data in real time. You are thus able to react from the first second.

Modular ERP platform.

SIVAS.ERP is designed as a modular platform: Different applications such as web shops, online configurators, BPMN, quality management systems, etc. can quickly and easily be linked via a REST API.

schrempp
SIVAS.ERP

Vital communication.

Besides the existing communication tools within the ERP system, the integration of MS Teams in SIVAS.ERP offers a focused, process and workflow related communication for the whole company.

State of the art.

With SIVAS.ERP you have access to your processes and data of the whole enterprise anytime and anywhere. Mobile applications as well as quick and easy releases due to the high degree of standardization complete the performance of our ERP solution.

SIVAS.ERP – Customized ERP solutions

- for machine construction and plant engineering
- for manufacturers of products with variants

Get Connected – Stay Connected



DATA INTEGRATION FOR INDUSTRIAL IoT



For modern companies, seamless networking and consolidation of their operational data is a key success factor. If this data is not available or only partially available, industrial IoT applications are a long way off.

Our software solutions ensure exchange of production and plant data across all systems as well as secure and flexible data integration. In this way, we provide you with the basis for creating optimized processes.

Centralized and Secure OPC UA-based Data Integration

With the products of our dataFEED family, we ensure the seamless flow of information between devices and software applications and the secure transfer of data to IoT and cloud platforms.

Our **dataFEED OPC Suite** is an integrated software solution for OPC UA and OPC Classic communication and IoT connectivity. Via the integrated OPC UA server with store-and-forward, it enables secure and reliable access to controllers from Siemens SIMATIC S7, Rockwell ControlLogix, B&R, Mitsubishi, and Modbus controllers, among others.

Our **Secure Integration Server (SIS)** acts as an aggregator, providing the required address space filtering, access control, and semantic extraction functions via OPC UA, and serves as a central OPC UA server. SIS combines all mechanisms for the management, regulation and monitoring of data access in one central location. This allows you to control the interface between OT and IT at a single point and manage it easily and securely.

Connectivity for “Industrial Edge”

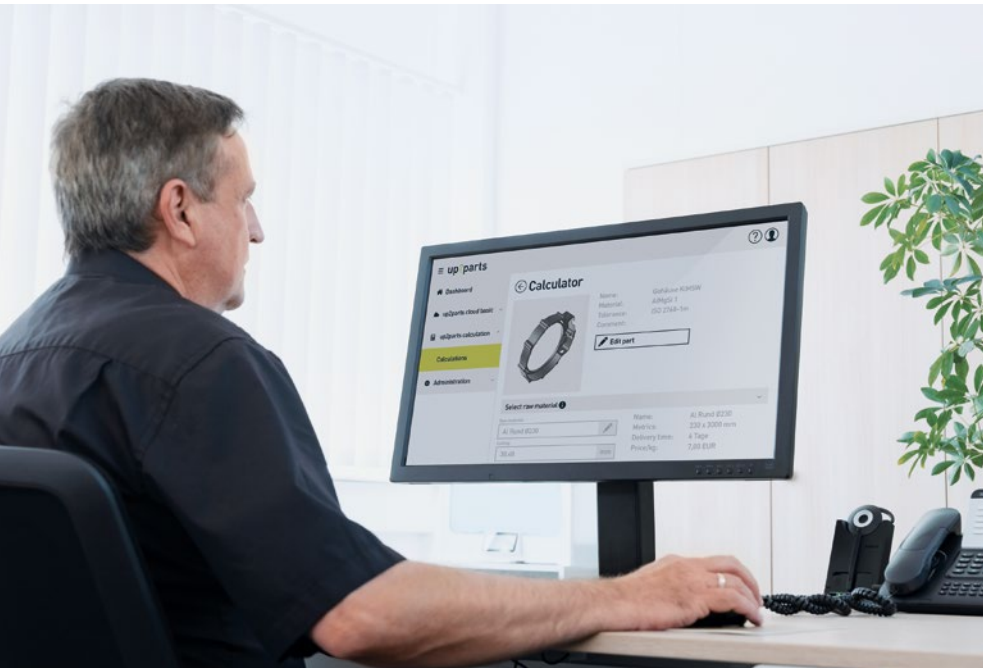
Industrial applications are increasingly taking advantage of edge computing, i.e. centralized management of decentralized data processing. Integrating connectivity and edge computing in an “industrial edge” also makes data integration centrally manageable and allows more efficient operation of the IoT solution. Our connectivity products for the industrial edge run as Docker containers and can be deployed using Amazon AWS, Microsoft Azure, or Kubernetes.

The **edgeConnector product family** provides access to process and machine data in controllers for OEE, predictive maintenance or machine learning. Our **smartLink product family** allows access to device data (sensors, actuators) for asset management and asset monitoring applications. The **edgeAggregator product family** provides OPC UA server aggregation capabilities as well as additional security for OPC UA-based data integration. You don't need specialized hardware and use open standards like OPC UA, MQTT and httpREST. This way you can design your IoT solution in a simple, flexible, and scalable way.



Source:
Softing Industrial Automation GmbH

80 % less time required for component pricing



Andreas Kanz, director of JUCOWA Metallbearbeitung GmbH, believes in the AI-based solutions provided by up2parts.
Source: JUCOWA Metallbearbeitung GmbH



up2parts CEO Marco Bauer

Source: up2parts GmbH

Small and medium-sized manufacturing businesses are under more and more pressure to increase their competitiveness. One solution is to submit more quotes in the same time. The AI-based software solutions offered by up2parts GmbH promise revolutionary progress, such as automated creation of work schedules and quotes in up to 80 % less time.

The up2parts vision is to pave the way to digital production for manufacturing businesses. up2parts aims to create a digital and efficiency-optimized manufacturing process chain from start to finish – with increased efficiency even from batch sizes as low as 1.

Calculate costs up to 80% faster

The company founded in 2019 has launched the software solution up2parts calculation. This solution helps up2parts customers – usually contract manufacturers with orders and clients that change daily – to automate pricing and quote creation so that they can speed up calculation and create submission-ready quotes within seconds.

JUCOWA believes in digital processes

For instance, the metalworking company JUCOWA Metallbearbeitung GmbH has saved machines, materials, customers and components centrally in up2parts and can now use the software to calculate component prices and create work schedule and deadline proposals automatically. Thanks to up2parts, JUCOWA now generally submits quotes in 80 % less time.



Source:
up2parts GmbH

Innovative software for manufacturing: up2parts GmbH aims to change the entire industry with its AI-based solutions.



30-day free and risk-free trial of up2parts calculation (no cancellation required, trial phase ends automatically) on up2parts.com: <https://bit.ly/3CGpYzN>



Source:
up2parts GmbH

up2parts GmbH grew from the software department of BAM GmbH. Today the two companies maintain a close partnership.

A finished quote in just a few clicks

Users of up2parts calculation can create a quote in just three steps: The automatic component analysis is started by uploading a CAD model. Within seconds, users receive a work schedule proposal including the calculation for the desired component. Just two clicks are needed to create a submission-ready quote.

Auto-adaptive Artificial Intelligence

The heart of up2parts is the company's own algorithm. It combines component information from CAD models with the processes and manufacturing expertise that already exist in the respective manufacturing business. The up2parts software involves continuous training of the customized Artificial Intelligence, ensuring that it has knowledge of company-specific strategies and timing after only ten calculations and the first work schedule.

Cloud-based software – simple & intuitive

Despite complex background processes, up2parts is just as intuitive and user-friendly as your Netflix account at home. up2parts is cloud-based, meaning it requires no installation.

A great advantage: real manufacturing experience

One unique feature of up2parts is its history. The software company grew from the software department of BAM GmbH, a contract manufacturer with approximately 150 employees and 40 machines. Thanks to its profound knowledge of processes, up2parts has a unique, new and above all digital approach to manufacturing. The two companies maintain a close partnership.



You need
more turnover
satisfied customers
efficient processes

We have
the right solution for you

TRANSACTION NETWORK **TN**

Transaction-Network: The digital enabler for machine building

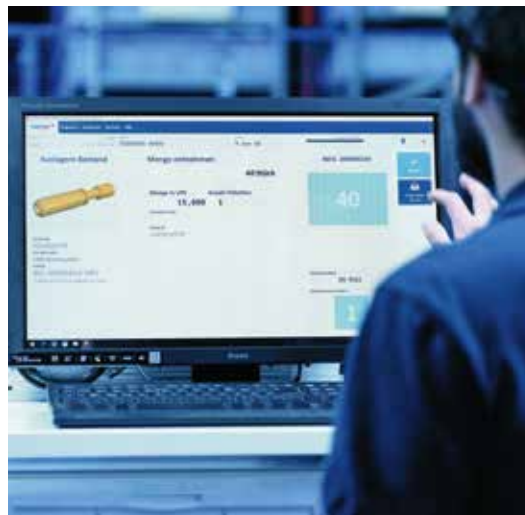


In after-sales, you differentiate yourself through added value and perfect service.

The Transaction-Network platform is here to help you concentrate on your competence and to afford digitalization.

Transaction-Network connects machine building and end customers on one digital platform. From here you can manage the machines you have already sold, monitor your systems, plan maintenance and service, and send out your after-sales proposals. This is how you strengthen customer loyalty.

Transaction-Network is cloud-based, modular, and open to other systems as well as own applications. Our rental model can also save you a lot of money and trouble. A platform for industry from industry experts.



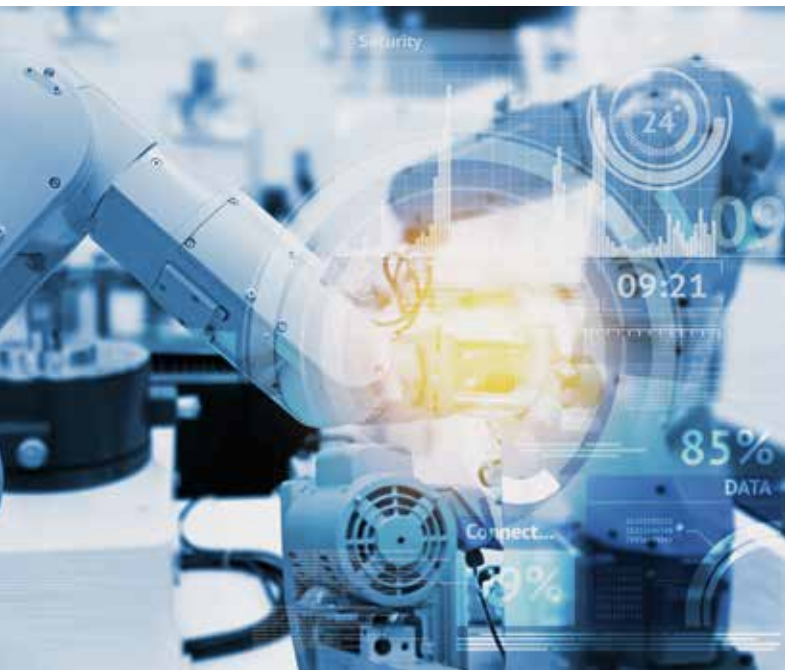
Solutions for warehouse management and integrated material flows

viastore SOFTWARE is an international provider of software for warehouse management as well as integrated automated material flows in logistics and industrial production.

- **Consulting:**
Software consulting, process consulting
- **Product:**
Development of the standard software product viadat for warehouse management and material flow control/visualization
- **Service:**
Implementation, project management, customer-specific adaptations, training, integration of subsystems
- **Hardware:**
Order picking systems, IT system landscape and infrastructure, network, hardware
- **Support:**
Hotline, system support, process improvement

The portfolio of viastore SOFTWARE includes the standard software product viadat, which can manage and control small warehouses with low turnover rates just as reliably as distribution centers and high-performance logistics systems with several hundred thousand order lines a day. viadat is intuitive to use, ergonomic, and has multi-warehouse capability. The software package can be implemented very quickly due to pre-configuration, is fully scalable in function and performance and highly effectual with over 2,500 standard logistics functions – which viastore extends and adjusts according to customer needs. The WMS therefore offers an integrated solution for networked material flows along the value chain: from the connection to ERP systems from various manufacturers via standardized interfaces, to the control of automated equipment such as conveyor systems, automated storage/retrieval systems, robots or packaging machines. It enables users to achieve lead time reductions, higher efficiency and process security as well as reduced inventories and the highest level of order picking quality.

We digitize your mechanical engineering expertise. Together for your success



Source: shutterstock.com



Sources others: XITASO

You are experts in mechanical engineering. We are experts in high-end software engineering. We bundle these strengths in order to provide tailored software solutions which not only optimize your production, but also make your machines smart. This digital added value means you can ensure your success, now and in the future. Thanks to our many years of experience in mechanical and plant engineering we speak your language and precisely know the challenges of the industry. We have had good experiences with a plethora of mechanical engineering companies, meeting the challenges together by linking mechanics, electronics, and software.

Our goal: more revenue through smart products and new business models, reduced costs through optimized processes and more networking through integrative platforms.

Smart machine controls and optimized processes
Digital technologies are developing faster than ever. This opens a multitude of opportunities, to use innovative solutions in the mechanical engineering environment and to transform them into added value for your business. What is important for you is high productivity and first-class quality. And it is exactly here where we support you, for example in the development of intelligent machine controls for your applications and the optimization of your production processes. Your systems become smart when they are in the position to collect data and interpret it autonomously thanks to their complete networking. The production process can be continuously improved automatically in this way. Quality increases and waste sinks while simultaneously downtimes are reduced through intelligent maintenance planning. This leads



to a significant economic added value for your customers and a competitive advantage for you.

XITASO – Authentic. Inspired. Ambitious.

We are passionate about high end software engineering! We develop individual solutions together with our customers, all the way from the innovation through to development and on to maintenance and support. XITASO is a



“There is a huge opportunity for German mechanical and plant engineering with the combination of multiple expertise. Together we ensure your long term market advantage in this time of digital transformation.”

Ulrich Huggenberger, Founder and CEO of XITASO

medium sized owner-managed IT service provider with over 150 employees in their continuously expanding locations in Augsburg, Leipzig, Madrid, Ingolstadt, Münster and Krumbach.

We have been successfully supporting our customers in digitization and ensuring their future viability for over 10 years now. We are characterized by an agile mindset and a proven expertise in topics such as Industry 4.0, Data Science, Artificial Intelligence, Cloud, Robotics and Augmented Reality. We can boast KUKA, MAN Energy Solutions, Wittenstein, Grenzebach or WashTec as our customers, to list some examples.



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Wibu-Systems has been spearheading the evolution of protection, licensing, and security technology for more than three decades and now brings its innovative engineering capabilities to aid the growth of connected industry.



Security as Enabler for new Business Models

Modern industry is changing at its core. Be it additive manufacturing, quietly emerging from the initial hype surrounding 3D printing to become a viable option for Manufacturing-as-a-Service, or new advances in vision control or even connected medical technology: Beyond all the technical finesse that goes into the hardware, the real value has become more intangible. Whether it be confidential patient or user data, blueprints or designs always at risk of piracy, or the production data that serves as the currency of a globally networked production economy, software and data are the assets that need protection against cyberthreats and flexible licensing to enable novel business models.

Wibu-Systems continues to innovate its flagship CodeMeter secure licensing technology to serve intelligent device manufacturers in many of the most pioneering industries of today's economy. In particular, the automation sector benefits from the versatility of CodeMeter's ready integration with established development environments and industrial communication protocols like OPC UA. With robust encryption and licenses stored safely in protected hardware, soft, or cloud containers, Wibu-Systems is doing its part to make digital

assets and communication safer. But connected manufacturing also needs secure identities for all parties at stake: the service providers and their clients as well as every endpoint involved, be it a computer, an embedded system or a PLC. Digital certificates are the gatekeepers of these identities, and with CodeMeter Certificate Vault, Wibu-Systems streamlines the laborious process of creating, distributing, and managing certificates with the same ease of use long enjoyed by the users of its licensing and protection solutions.

With its commitment to 4D interoperability giving engineers the freedom of choice in license containers, devices, platforms, and back office systems, Wibu-Systems and its CodeMeter technology empower professional users everywhere to propel their business to new heights.



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