PRESS RELEASE

From Sylke Becker
Tel. +49 69 756081-33
Fax +49 69 756081-60
Email s.becker@vdw.de

Big data opens up new business models

The sharing-economy attitude "Don't own, use", coupled with predictive maintenance, promotes efficient and sustainable production and consolidates supply chains

Frankfurt am Main, 19th January 2023 *– Industry is seeking new ideas for that key step ahead in the international arena. For instance, the smart utilization of production data augments machine efficiency and helps create all-new data-based business models. These innovations will be presented at EMO Hannover 2023. Under the new claim "Innovate Manufacturing.", the German Machine Tool Builders' Association (VDW) will be inviting experts from all over the world to the world's leading trade fair for production technology from September 18 to 23, 2023.*

Data is the new crude. And these metaphorical oil wells can be found in every production hall. All production processes generate huge quantities of data. And these data mines are the source of invaluable raw material that the industry can process and convert into profitable up-to-date scenarios. For instance, the findings gained from big data can help raise the efficiency, stability, and sustainability of production. Also possible are all-new digital business models, for example when production data is captured systematically, processed professionally, and utilized intelligently. Yet another

VDW – Verein Deutscher Werkzeugmaschinenfabriken e. V.
Lyoner Straße 18, 60528 Frankfurt am Main, GERMANY
Tel. +49 69 756081-0, Fax +49 69 756081-74
emo@vdw.de
www.emo-hannover.de

Registergericht // Registration Office: Amtsgericht Frankfurt am Main
Vereinsregister // Society Register: VR4966
Vorsitzender // Chairman: Franz-Xaver Bernhard, Gosheim
Geschäftsführer // Executive Director: Dr.-Ing. Wilfried Schäfer, Frankfurt am Main
Ust.Id.-Nr. // t. o. tax in. no. DE 114 10 88 36

solution is paying for machines based on how they are used and what they deliver over a certain period.

Don’t own, use
This can help production technology complete the transformation to subscription business models – away from 100 percent machine purchases to their flexible utilization within fixed time limits. Whether the machine should then belong to the operator or the manufacturer is ultimately a matter for a factual cost-benefit analysis.

Data-based models can then serve to place us that crucial step ahead of our competitors. “Manufacturers of production technology in Germany have recourse above all to business models offering ‘everything as a service’, or XaaS for short. These are subscription-based promises to deliver added-value custom solutions combining industrial services with physical and digital elements,” explained Professor Thomas Bauernhansl, Director of the Fraunhofer Institute for Manufacturing Engineering and Automation (IPA) in Stuttgart and of the University of Stuttgart’s Institute of Industrial Manufacturing and Management (IFF).

“And the greater the data transparency, the more readily customers accept this,” he continued, adding that tailored solutions could be provided over the whole value chain, and customer loyalty deepened by means of new payment models (e.g. Pay Per Part or Pay Per Productivity) and the associated shifts in the transfer of responsibilities. According to Bauernhansl, this type of business model may be expected to grow on saturated markets as well, thanks to cross- and upselling: “The new offers for added value promote differentiation in the global arena.”

The machine tool manufacturer DMG Mori AG of Bielefeld has implemented this finding and is now offering its model, under the name of PAYZR, that supplies customers with installations that they can pay for on a use basis. The acronym PAYZR stands for *Pay with Zero Risk*. The core idea behind this subscription business model is to give customers precisely what they need, when they need it – no more, and no less.

In detail, equipment as a service may take the following form: Customers order, configure their machines at the manufacturer’s online store, and then receive the installation on payment of a standard monthly rate. This rate may vary depending on the configuration and the contract period of e.g. 12, 24, or 36 months. The standard rate covers care, servicing, and insurance. In addition to the standard rate there are the costs for the machine’s utilization,

which the manufacturer calculates as a function of the clocked operating hours. The benefits that this sharing-economy model *(Don't own, use)* offers customers are greater planning reliability (price and cost transparency) and the avoidance of long-term investment expenditure, with the potential to accelerate innovation cycles.

The machine tool and laser technology manufacturer Trumpf SE + Co. KG of Ditzingen is also focusing on data-based innovations. This hi-tech firm has created a digital business model it has named *Pay Per Part*. Product Manager Maximilian Rolle explained how this works in detail: "Trumpf's Pay Per Part allows customers to pay solely for their use of the fully automated laser systems from our TruLaser Center 7030 series. Although the installation itself is sited in the customer's production plant, it is remote-monitored and controlled from the Trumpf Remote Control Center in Neukirch." Trumpf experts also offer their support in programming and configuring the machine. "In the end the customer pays for the completed parts a price guaranteed in advance," said Rolle, adding that this business model benefits customers in that they can leave the machine running in three-shift mode without having to recruit or deploy additional personnel. "In the event of a malfunction or downtime, we take immediate action. This maximizes the machine's utilized capacity and raises productivity," assured Rolle. According to him, Trumpf experts are capable of extracting the maximum from the fully automated laser systems. "And the efficiency of production climbs even more," concluded the product manager.

Yet industrial production smacks more of conservatism, and new ideas catch on only slowly. This Rolle freely admits: "When faced with digital business models, many customers initially prove reserved." However, he continued, a good response has been observed to services helping the customer raise efficiency and productivity. "Pay Per Part too is meeting with growing interest. We may assume that the number of users will continue to grow," he concluded.

Deep insights into own production processes

Machine data also serves to detect quickly errors in production. To this end, c-Com GmbH of Aalen, a subsidiary of the precision tool specialist Mapal Group, is hosting on an open cloud platform collaborative data management for tools and other components in the production environment. This is to help companies gain a deep insight into their processes and find solutions faster to the problems they encounter.

If production data is subjected to real-time monitoring, this immediately detects anomalies in the data streams. And analyzing the data in the context of the whole production process can provide precise details on which of the production factors, e.g. the tool, the machine, or the raw material, is deviating from the standard.

Predictive maintenance, or repairing a machine defect before it arises, is a solution provided by IoT software like Siemens MindSphere. This software saves operating data and renders it accessible via digital applications. Put oversimply, MindSphere can be likened to an operating system on a computer or cellphone. It processes the raw data captured by the production plant's sensors and analyzes data patterns for signs of a machine defect, excessive power consumption, or imminent servicing on a critical part reaching the limit of progressive wear.

Data protection – an overview

The success of digital business models hinges on the trust they inspire. Many companies fear losing the ownership of their data as soon as it leaves the premises and is uploaded to the cloud. Accordingly, solutions are needed that comply with the data protection regulations.

This is where the project Gaia-X comes in. A European consortium is to create the basis for a European data infrastructure over which companies can collate, share, and use data confidentially. The need is great. Nearly half of all companies employing more than 20 (46 percent) in Germany stated in a Bitkom survey that they are interested in using the services provided on the European cloud and data infrastructure.

Data ownership is also at the focus of the project Manufacturing-X, which is to provide a protected industrial data room for manufacturers of production technology. In response, a consortium of SAP and German machine builders are developing a cloud platform for the production sector that simplifies the exchange of information inside a decentralized data room imposing precisely defined access rights. The idea behind this center is to provide continuous data connectivity for the greater transparency and stability of supply chains.

"Data-based business models create transparency in supply chains, facilitating the early detection and elimination of malfunctions, for instance by means of remote services," explained Fraunhofer scientist Bauernhansl, adding that smart algorithms reduce waste by maximizing the utilization of production resources. He continued: "When targeting e.g. a reduced CO_2 footprint, smart

algorithms can be applied, for instance, to adjust production planning to the availability of renewable energies."

Trumpf Manager Rolle stressed that the subject of data security is of "huge importance" for digital business models. In his view, today's cloud solutions offer the best possible data protection. Also, he added, a data usage agreement is to ensure that the user shares only the relevant data agreed on. "This helps us create the conditions necessary for our customers to decide for themselves on the data they provide to us when they use our digital models," explained Rolle, adding that Manufacturing-X may possibly prove an initiative for safeguarding data ownership and may lead over the medium term to a new industrial standard.

Indispensable for competitive strength
According to a spring 2022 survey by Germany's IT and telecommunications industry association Bitkom, about 91 percent of German industrial companies describe Industry 4.0 as "indispensable" in maintaining their positions in the international arena. Above all, the reduction of emissions promises potential: 81 percent expect a contribution towards sustainable production.

In doing so, Germany's industry is counting on its ability to utilize its cutting edge in international comparisons, specifically with respect to the USA and providers in the Far East. "Where service-oriented business models are concerned, we in Germany still maintain an edge over the Far East and the USA thanks to our deep understanding of our customers, our exceptionally high engineering expertise, our creativity, and our skills in developing solutions," said Bauernhansl, and added as justification that the best proof is furnished by the many hidden champions in Germany and their rapidly growing service portfolios of innovative promises for the creation of value. "Initiatives like Gaia-X, Catena-X, or, more recently, Manufacturing-X are flanking measures towards maintaining the competitive edge," continued the scientist. "At the moment, we can still enjoy this edge, but we can feel the international competition breathing down our necks – what counts here are rates of implementation and courage to try out new things!"

((Length: 11.075 characters incl. spaces))

Author: Daniel Schauber, technical journalist, Mannheim

((INFOBOX))

Data-driven production at EMO Hannover 2023

Data-driven production methods are growing in importance in industrial production and have therefore become a fixed constituent of the EMO Hannover program. On the exhibitors' side, a great many companies will be presenting their machines, systems, and components which, coupled with smart data analysis, help raise production efficiency and sustainability and implement innovative data-based business models. One excellent platform for this is provided by the thematic booths section "Future of Connectivity Area" that focuses on the connectivity of production processes. Further details are available at https://emo-hannover.com/thematic-sections.

Background

EMO Hannover 2023 – the world's leading trade fair for production technology
From September 18 to 23, 2023, EMO Hannover 2023 will be the venue for international manufacturers of production technology to present their smart technologies over the whole value chain. Under the banner *Innovate Manufacturing.*, the world's leading trade fair for production technology will be presenting the whole bandwidth of modern metalworking, which is at the heart of all industrial production. The presentations will include the latest machines plus their efficient engineering solutions, product-related services, sustainability in production, and much, much more. EMO Hannover focuses on cutting and forming machine tools, manufacturing systems, precision tools, automated material flows, IT, industrial electronics, and accessories. Trade visitors to EMO come from all of the key industrial segments, including machine and plant building, automotive and its suppliers, aerospace, precision mechanics and optics, shipbuilding, medical engineering, tool and mold making, and steel and lightweight engineering. EMO Hannover is the most important international meet for the world's industry. At EMO Hannover 2019, more than 2,200 exhibitors from 47 countries attracted nearly 120,000 trade visitors from about 150 countries. EMO is a registered trademark of the European machine tool association Cecimo. EMO host is the German Machine Tool Builders' Association (VDW) of Frankfurt am Main, Germany.

Contacts

Fraunhofer Institute for Manufacturing Engineering and Automation (IPA)
Professor Thomas Bauernhansl
Institute Director
Nobelstr. 12
70569 Stuttgart
Germany
Tel. +49 711 970-1100
thomas.bauernhansl@ipa.fraunhofer.de
https://www.ipa.fraunhofer.de

DMG Mori AG
Tanja Figge
Director Corporate Communications & Investor Relations
Gildemeisterstraße 60
33689 Bielefeld
Germany
Tel. +49 5205 74-3001
pr@dmgmori.com
https://de.dmgmori-ag.com

Trumpf SE + Co. KG
Ramona Hönl
Spokesperson Machine Tools
Johann-Maus-Straße 2
71254 Ditzingen
Germany
Tel. +49 7156 303-31251
ramona.hoenl@trumpf.com
www.trumpf.com

c-Com GmbH
Heinkelstraße 11
73431 Aalen
Germany
Tel. +49 7361 829949-0
mail@c-com.net
https://www.c-com.net

Mapal Fabrik für Präzisionswerkzeuge Dr. Kress KG
Obere Bahnstraße
73431 Aalen
Germany
Tel. +49 7361 585-0
info@mapal.com
https://mapal.com

Daniel Schauber
Meerfeldstr. 14
68163 Mannheim
Germany
Tel. +49 170 2031976
daniel@schauber.com

Copy and images for EMO Hannover can be found online at:
www.emo-hannover.com/press-releases
www.emo-hannover.com/image-database
www.emo-hannover.com/logo-banners

Follow EMO Hannover on our social media channels as well: