



ACHEMA

Worldwide News

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A special edition from

PRO·CESS

1|2019

BLOCKCHAIN AND BEYOND

Industry 4.0, Industrial Internet or Internet of Things (IoT) — no matter which buzzword you are using, the digital transformation process our industries are currently undergoing is tremendous. The full potential of digitalization is nowhere near exhausted.

Same as other industries the process industry has a long way to go to fully deploy the potential of IoT: Artificial Intelligence and (big) data analytics are on hype right now and seem to be the answer to almost every question in business development (to be honest: mostly it's far more complex); cloud computing is building the backbone of modern globalized companies; virtual reality and augmented reality is increasingly used to enhance B2C as well as B2B services. The important

5G technology is just showing up to accelerate even more the exchange of data, including those generated in worldwide industrial sites. While all companies are currently looking for possibilities to integrate IoT approaches and further digitalize their processes, starting flagship projects and evaluating use cases, other big things are already showing up.

Taking a glimpse into supply chain management, which is still not as efficient as it could be, feeling the desire for trust and security within global partner networks and listening to the demand for integrated and standardized data models makes me finally look at distributed ledger technology (DLT), for the most people better known as blockchain. Actually, blockchain is only one type of DLT.

Experts often talk about standardized data models along the value and supply chain. So why not make use of DLT, which allows great interoperability of data and increasing transparency while having an eye on data security? Security and trustworthiness will always be on the agenda of integrated supply chain networks, especially in asset- and IP-driven industries such as the process industry. DLT could create trust between (unknown) players along the complete supply chain as well as address several challenges of supply chain management: just think about record keeping or tracking and tracing of products. Another example, where you need to manage reliable information to e.g. address reporting needs would be REACH. Of course, DLT is still under development, but it looks to be better automated and more secure than current databases can be as well as more reliable and overall less costly. DLT could increase efficiency along the supply chain and decrease the risk of losing products while eliminating middlemen and intermediaries along the supply chain. So, it looks like the technology is either an enemy or savior. How do you think about it?



■ **DR. BJÖRN MATHES**

Member of the Executive Board
of DECHEMA Exhibitions ■

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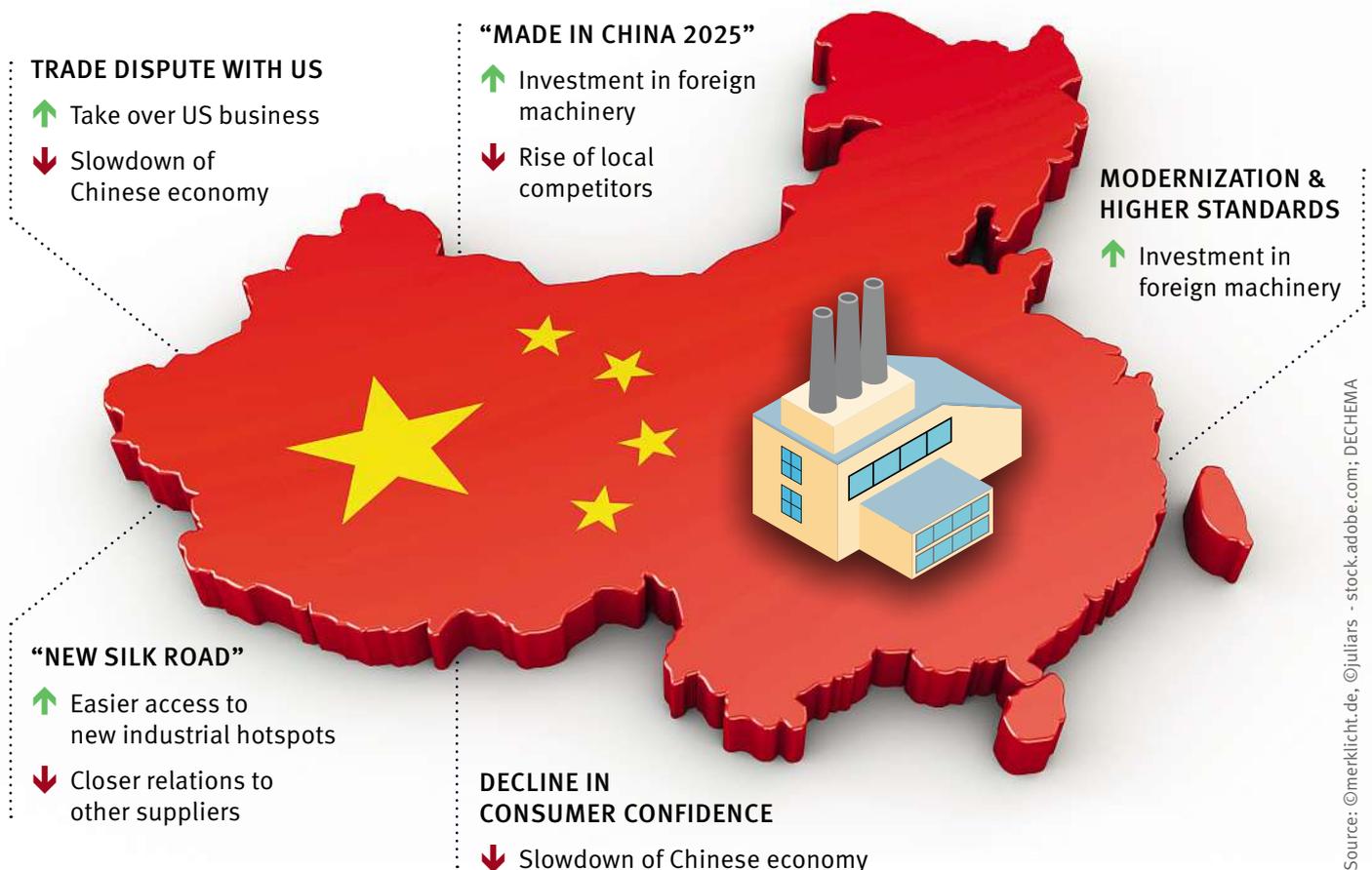
Covestro's Chief Technology Officer Dr. Klaus Schäfer, chairman of DECHEMA, explains why digitization and climate protection will be more important for the company's future business in China. (Page 12) ■

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ONLY CHANGE IS CERTAIN

The figures are impressive: The Chinese chemical industry achieved sales of €1.3 billion in 2017 and had a 40% share of the world market. According to Germany Trade & Invest, the Chinese market is larger than the European and US markets combined. But in recent months, uncertainty has grown as to how the industry will develop in the future. A large number of partly contradictory influences are making themselves felt. It is difficult to say which of these will prevail in the end — but one thing seems certain: the chemical industry in China will change fundamentally.



Source: ©merklicht.de, ©julians - stock.adobe.com; DECHEMA

DR. KATHRIN RÜBBERDT*

On the one hand, there is the trade dispute with the USA, which is being followed with concern not only in the two countries affected. BDI (The Voice of German Industry) President Dieter Kempf warned last September: “The new tariffs will also affect German companies as part of global production and value chains. The spiral of protectionism is affecting many other countries — especially trading nations like Germany.”

However, the fact that China’s economic growth has slowed is not only due to the US President and his trade policy. Other factors also play a role: Consumer confidence has declined sharply, which is particularly noticeable in the automotive industry. There are no major investment programmes in sight, such as in earlier slowdowns, because China must keep its debt within bounds. Concerns about a possible real estate and credit bubble in China’s largely unregulated credit business also contribute to an overall deterioration in economic senti-

ment. At the same time, the growing middle class is placing demands on social infrastructures such as health care, and in the near future the question will arise of how to care for an ageing population without children and grandchildren who are replacing a state pension system.

Best Conditions for Foreign Investors

China has set itself a lot of goals with its “Made in China 2025” strategy — and implementation requires a strong and modern chemical industry, also with support

* K. Rübberdt, Head of DECHEMA Communications

from abroad. Despite all the uncertainties mentioned, Germany Trade and Invest states in a report from November 2018 that the conditions for foreign investors have never been so good. The Chinese process industry is undergoing a series of serious changes. On the one hand, overcapacities are still being removed from the market. At the same time, however, the wave of modernization is continuing: In order to implement the environmental reforms and ensure greater safety, chemical plants are being closed or have to move to industrial parks. Environmental protection requirements at these sites are generally high, and infrastructure for wastewater treatment, waste disposal and emission controls is in place. In view of the growing environmental problems in the “old” industrial hotspots and the growing sensitivity of the population, it is not only the central government that is exerting pressure, regional authorities are now also pulling their weight. For example, the provincial government of Jiangsu, a highly industrialized province on China's east coast, has announced that it will close 1,000 chemical plants within three years whose technology is outdated or less than a kilometer from the Yangtze.

Chinese and international companies are planning huge investments in new petrochemical complexes, above all in China's south in the less industrialized hinterland. BASF has announced the construction of a Verbund site in the Chinese

province of Guangdong for USD 10 billion. ExxonMobile is also planning a similar project there. A Sino-Kuwaiti consortium is already active and is building a refinery that is scheduled to start operations in 2020. The region has relatively little heavy industry to date and is attractive for investors for a number of reasons: land is comparatively cheap, labor costs are low and population density is low, so that there are fewer acceptance problems than in densely populated regions with high industrial density anyway.

More than “Just” Modernization

But “Made in China 2025” is about more than “just” modernization: The policy envisages strengthening Chinese suppliers of robotics and automation technology in such a way that by 2025 they will have overtaken competitors from industrialized countries. China is already regarded as the technology leader in digital trading platforms, including the chemical industry. And China is also preparing to leave Western industrialized countries behind when it comes to digitization and artificial intelligence. With the growing competitiveness up to technology leadership, however, the circle of those who demand to see China less as an emerging country than as a competitor at eye level—with all the resulting rights and obligations—is also growing. In the CHEMonitor 2/2018, 45% of managers stated that the Chinese chemical industry will be a

strong competition for their own company in the future (interestingly, 86% of respondents saw strong future competition for the chemical industry as a whole). Particularly in view of the political developments in China, voices are becoming louder calling for Germany and the EU to show more self-confidence towards China.

54 Demands for Competition with China

Last year, China experts noted a “re-ideologization” of state and economy with a stronger tendency towards control. At the same time, China is sending out liberalisation signals with regard to Western investments. However, this should not be overestimated, experts say. At the beginning of January, the BDI presented 54 demands for competition with China; they are summarized in a policy paper entitled “Partners and systemic competitors—how do we deal with China's state-controlled economy?” China remains a driver of the global economy and an important sales and procurement market for the chemical industry, said BDI President Kempf at the presentation of the paper. At the same time, however, the BDI is calling for a more ambitious EU industrial policy, more subsidy controls on imports and state-financed takeovers of European technology companies, and a coherent and long-term China strategy from the EU Commission and the German government. ■

ACHEMASIA 2019 — VISITOR INFORMATION

Moving into its fourth decade, AchemAsia is setting out for new horizons: The International Expo and Innovation Forum for Sustainable Chemical Production will take place from 21-23 May 2019 in Shanghai, China.

Since its premiere thirty years ago, AchemAsia has become the leading communication hub to China's process industry.

With a sharpened exhibition profile covering process technology, pharma technology, industrial water manage-

ment, plant & process safety and digitalization the visitor may expect an overview of current technologies and trends for the Chinese market. The new event location in Shanghai provides the best setting and convenience for new insights and new business contacts.

Special view to
Shanghai skyline

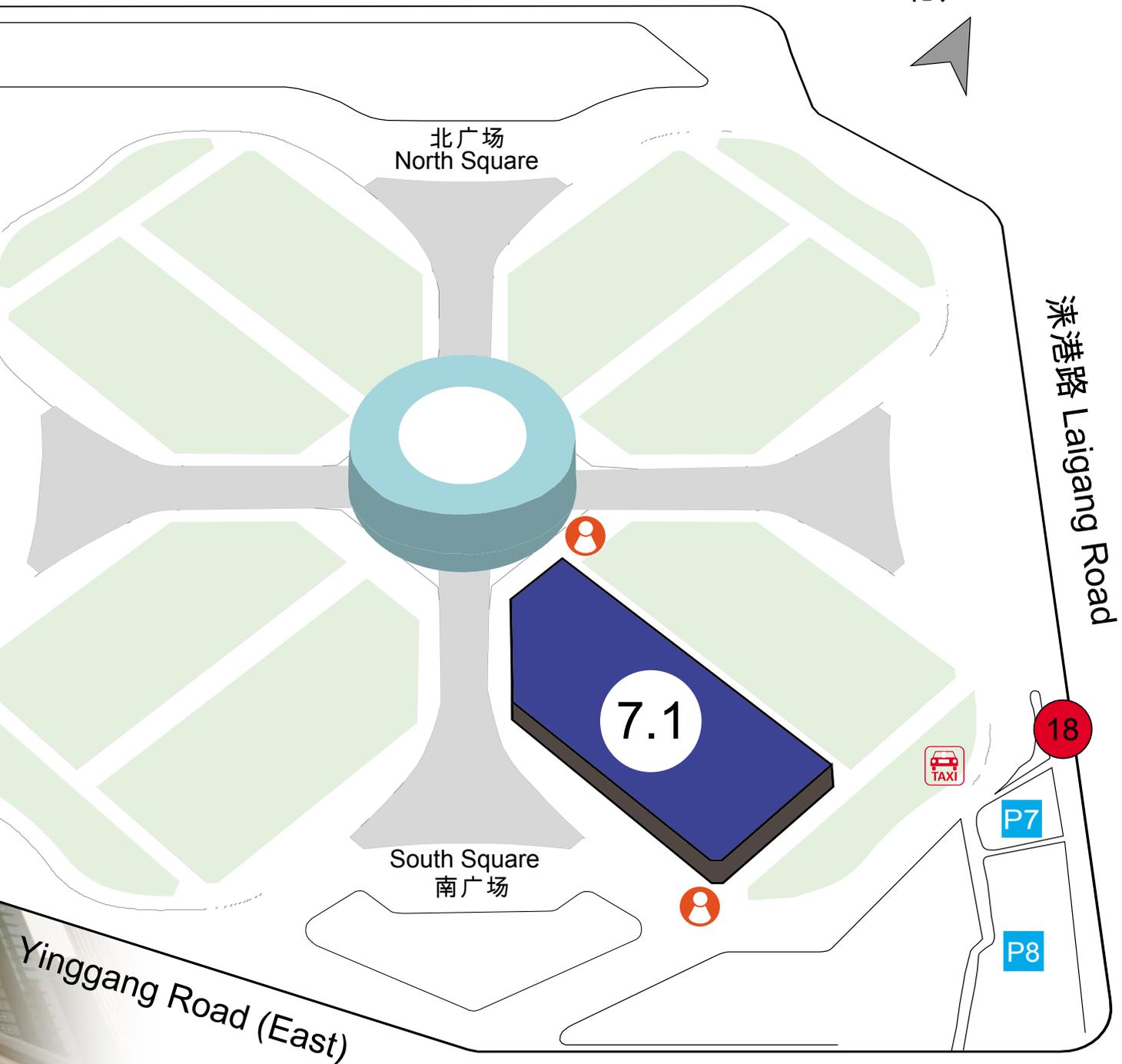
诸光路 Zhuguang Road

盈港东路



崧泽大道 Songze Avenue

北广N



Legend:



Visitor Registration



Venue Gate No. 18



Metro Line 2



P7 Bus parking area



P8 Car park



Taxi

Exhibition and Convention Center

The highly modern NECC Shanghai is easily accessible through a developed transportation network: Just 1.5 km away from Hongqiao Transportation Hub, NECC is linked to Shanghai's Hongqiao International Airport and to the adjacent railway station via the city's Metro Line 2.

Venue

NECC Shanghai – National Exhibition and Convention Center (Shanghai)
No. 168 Yinggang East Road
Qingpu District / 201702 Shanghai / PR China

Opening Hours

21 May 2019: 9.30 a.m. – 05.00 p.m.
22 May 2019: 9.30 a.m. – 05.00 p.m.
23 May 2019: 9.30 a.m. – 04.00 p.m.

... How to arrive?

By Plane

- a. Pudong International Airport
- b. Hongqiao International Airport

By Shanghai Metro

Take Line 2 towards East Xujing, get off at Exit 4, 5 or 6 of East Xujing Station and walk to West Entrance of National Exhibition and Convention Center.

Head to hall 7.1

By Bus

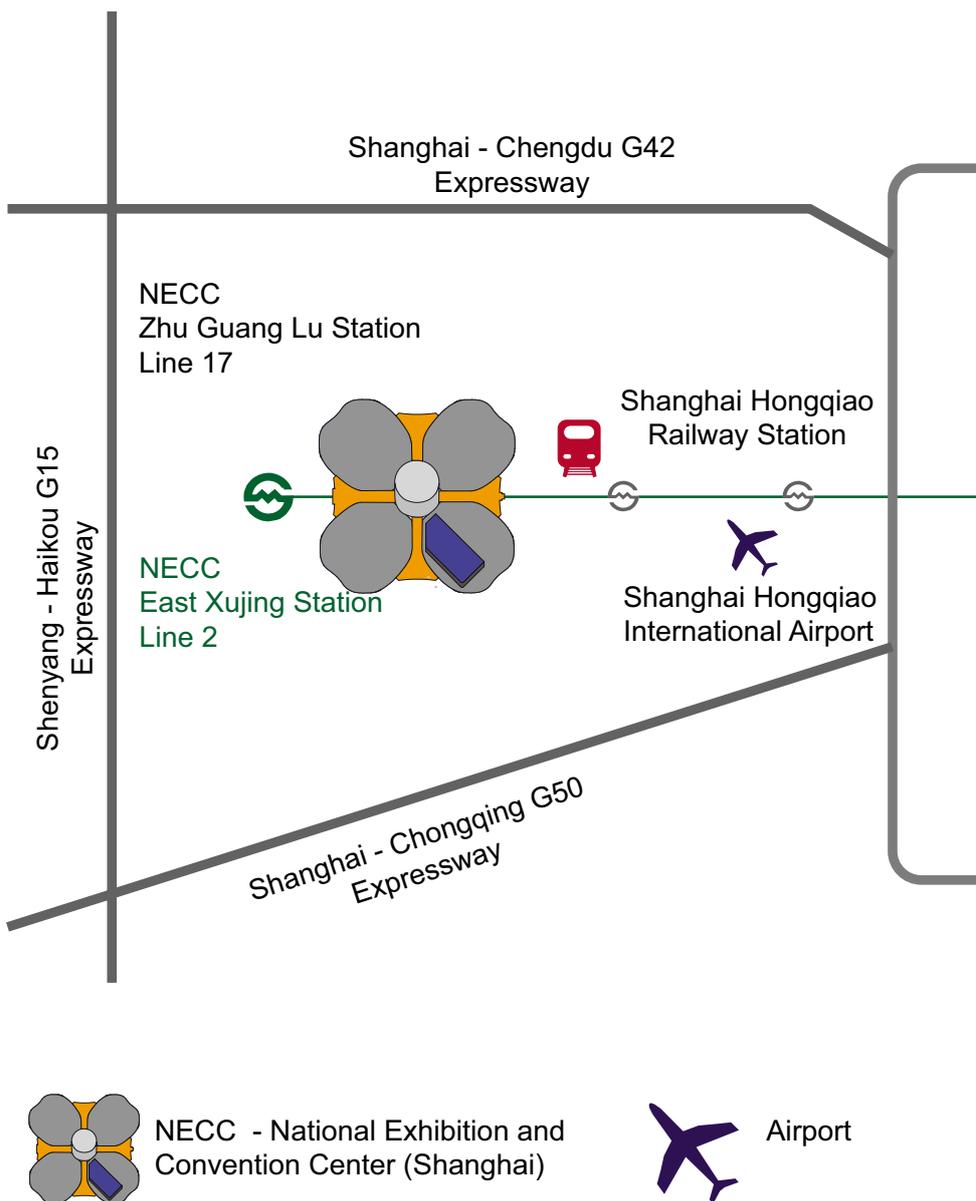
Bus lines to East Xujing Station (near West Entrance of National Exhibition and Convention Center) are No.197, 706, 710, 865, Xujing Line 1, Xujing Line 2, Xujing Line 4, Baixu Line, Qingxu Line, Zhuxu Line, Qingfengxu Line.

There are connections from different Metro stations as well:

From Jiuting Station (Metro Line 9): Bus No. 706, from Zhongshan Park Station (Metro Lines 2 / 3 / 4) and Ziteng Road Station (Metro Line 10): Bus No. 776 and from Jinjiang Park Station (Metro Line 1), Caohejing Hi-Tech Park Station (Metro Line 9), Shanghai Zoo Station (Metro Line 10): Bus No. 865

If you travel by taxi, bus or car

direct to Yinggang East Road. There is a dedicated entry and visitor registration leading you directly to hall 7.1 where AchemAsia 2019 exhibition and congress will take place. Bus and car parking is available south of hall 7 via Yinggang East Road (P7, P8, limited space).



Attracting professionals from all over China and South-East Asia, AchemAsia has now matured and developed its own profile based on the “hot topics” in the Chinese and Asian market:

- Process Technology
- Pharma Technology
- Industrial Water Management
- Plant and Process Safety
- Digitalization

“We are putting the growth and core sectors of China’s process industry in the centre of the event’s focus, with sustainability as anchor theme,” says Thomas Scheuring, CEO of DECHEMA Exhibitions. The move from Beijing to Shanghai also follows the lead of the industry. The exhibition will be accompanied by a congress jointly organized by DECHEMA and her

Chinese partner organizations. The individual sessions are closely integrated into the exhibition, guaranteeing a high relevance for the audience active or interested in the Chinese process industry.

Visitor Service

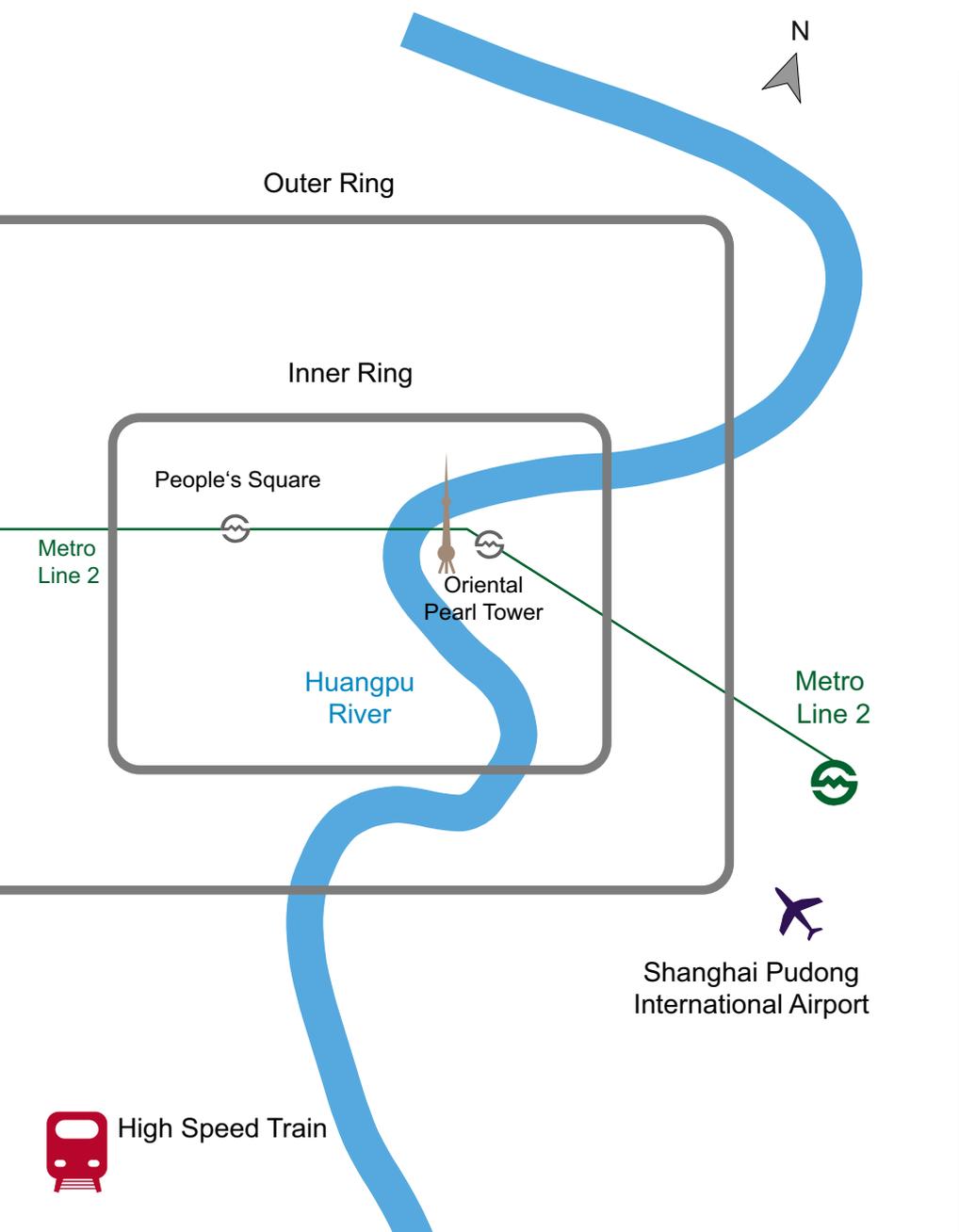
All foreigners must obtain an entry visa before proceeding to China. In order to assist you in preparing your visa application you can request a personal invitation letter on the AchemAsia website at www.achemasia.de/visa-invitation.

Get yourself prepared before the event by locating targeted exhibitor booths, identifying suitable suppliers and exploring the conference programme at www.achemasia.de.

Visit www.achemasia.de/tickets, register online and download your personal entry ticket for easy access without waiting a long queue at the exhibition ground. Visitor registration counters at NECC are located at the entrance of hall 7.1 and at West Hall.

... Who should attend?

- Engineers
- Technicians
- Sales persons
- Scientists
- Manufacturers / brand owners
- Agents, distributors
- Investors
- Students



Last but not least, we will give you some tips how to plan your sightseeing tour. If you want to get a closer look at Shanghai's highlights, plan a city tour or just know what's on please refer to the official Shanghai travel website: www.meet-in-shanghai.net. You will find

useful information, e.g. on the Top 20 attractions in Shanghai.

The organizers DECHEMA Ausstellungs-GmbH and CIESC Chemical Industry and Engineering Society of China look forward to welcome you at AchemAsia 2019 at NECC, Shanghai! ■

... Why should I visit AchemAsia 2019?

- See the latest product innovations and technical trends in the process industries.
- Find suppliers for equipment and components.
- Meet potential cooperation partners for your next project.
- Communicate face-to-face with experts from all relevant industry sectors.
- Get to know trendsetters and decision makers.
- Learn from senior speakers about new scientific results and innovative problem solutions in the accompanying conference.
- Participate in the ongoing development of new technologies and markets.

COMBINING THE BEST OF TWO WORLDS

China plays an important role in Covestro's business. Covestro's Chief Technology Officer Dr. Klaus Schäfer, chairman of DECHEMA, explains why digitization and climate protection will be more important for the company's future business in China.

• **Dr. Schäfer, Covestro is very active in China. What role does China play for your company?**

SCHÄFER: Since the start of the 2000s, we have made huge investments in China and are now generating around a fifth of our company's turnover here. Measured in terms of sales, this means that China is our biggest single market.

• **You recently announced a cooperation with domestic appliance manufacturer Haier. What are you hoping for from this cooperation?**

SCHÄFER: Haier is one of the leading manufacturers of domestic appliances in the world, and we want to further expand our cooperation that goes back decades. In our planned joint digitalization laboratory, we will take advantage of our extensive knowledge of poly-

urethane and foaming technologies, while Haier will contribute its expertise in industrial automation and in the analysis of large data volumes.

• **With this type of project, which is also with the context of the digitalization strategy of Covestro, will you benefit from the developments in China in this field?**

SCHÄFER: Partnerships generally make a lot of sense in many areas, as you can often combine the best of several worlds. One thing we are seeing a lot of in China and other Asian countries is enthusiasm for new technologies. Of course, this acceptance helps us to implement our digitalization strategy — as well as enabling us to push ahead with new working methods and try out new business models. Our own flagship store on the platform of



... Biography Dr. Klaus Schäfer

Dr. Klaus Schäfer is member of the Covestro Board of Management since 2015. He is Chief Technology Officer (CTO) and responsible for production and technology as well as all chemical production sites.

Previously, Schäfer was head of Production and Technology in the Polyurethanes segment, was the Country Representative in China for predecessor company Bayer MaterialScience, and Managing Director of German site operator Currenta, which provides services to Covestro at the Dormagen, Krefeld-Uerdingen and Leverkusen sites.

Born in Bruehl, Germany, in 1962, Schäfer studied physics at the city's university. After obtaining his PhD, he worked for Erdölchemie and BP before joining the Bayer Group in 2001.

Source: DECHEMA

...❖ Covestro in Greater China

- Covestro is a leading producer of advanced polymers and high-performance plastics around the world.
- Business activities are focused on the manufacture of high-tech polymer materials and the development of innovative solutions for products used in many areas of daily life.
- The main segments served are the automotive, electrical and electronics, construction as well as wood & furnitures industries. Covestro has been in China for a long history.
- A sound sales, marketing, production and R&D network has been set up in China, providing high performance material and innovative solutions to meet the customers' needs.

online marketplace specialist Alibaba is a good example.

- **How do you think that China is going to develop in the near and medium future?**

SCHÄFER: We expect continued dynamic and positive developments for Covestro in China. In my time as a manager in China, I experienced a particular skill of the Chinese up close: the will to make plans and then rigorously implement them. There is increasing focus on the topic of climate protection — both in industrial processes and in relation to topics like urbanization and e-mobility. We can and plan to profit from these megatrends.

- **The BDI recently pointed out that China has now evolved into a competitor and that a strategy is needed so that Europe can meet this competitor on equal terms. Do you see a risk that China is carving out advantages over Germany and Europe through unfair boundary conditions?**

SCHÄFER: It is clear that Chinese companies have now reached a respectable size and that they have taken on leading roles in the global competition. We therefore need to have a discussion in Europe about the exact form a European industrial policy should take so that competitive conditions are created for industry and disadvantages are avoided. This will be the only way to ensure that European companies can have a leading position in the global marketplace.

- **Where do you think that Chinese industry has the most catching up to do?**

SCHÄFER: Well, I don't really feel it is my place to discuss any need to catch up on the part of Chinese industry in general. One project that makes a lot of sense from my point of view is the recently launched initiative to consolidate many small and decentrally distributed companies in chemistry parks. The aim is to improve environmental protection and ensure better safety. ■

SLIP HAZARD AHEAD FOR ENGINEERING PROJECTS?

Has the Asian boom cooled down? The economic wonderland in the Far East will keep the chemical industry on its toes: While some companies have investments worth billions in the pipeline, others fear for Europe's competitiveness. And then there's the looming trade war between China the US and the veering of Asian key markets ... Engineering projects in China are thus caught between hope and anxiety.

DOMINIK STEPHAN*

Hit the ground running: BASF's newly appointed CEO Martin Bruder-müller thinks big. A new Verbund site is next in line — but not in Europe nor the US. Guangdong, PR China, was chosen as the location for the chemical giant's next worldscale integrated production plant, centered around an all new one million tons per year ethylene steam cracker. Total costs: A whopping 8.7 billion Euros. Various plants for consumer-related products will follow. No doubt: The chemical industry has set its sight on China. The People's Republic is responsible for 40 % of global chemical produc-

tion. But the economic powerhouse is stuttering. Growth has reached its lowest level in 28 years (6.6 % yoy). In Jiangsu, Eastern China, several hundred chemical plants were idled, the Financial Post reports. This darkens the prospects for suppliers and engineers in Japan and Germany, as Chinese plant manufacturers take the opportunity to tackle the world's markets. For the first time, the German Engineering Summit identified China as the most important competitor for plant engineering projects—ahead of firms from Western Europe and the USA.

This means “a turning point to which the industry must respond”, Thomas Waldmann, Managing Director of the VDMA's Engineering Workgroup, says. No easy task, as companies simultaneously have to manage the digitization, establish new contract models and find, hold and empower qualified employees. Internal management structures are not left untouched: “We must replace traditional, hierarchical leadership with knowledge-

* D. Stephan, Editor of PROCESS.
Contact GROAB, the project database for international major plant engineering and construction:
Phone +49-931-418-2927

Source:© theseamuss-stock.adobe.com, Verkehrsmmeister-stock.adobe.com, angelha-stock.adobe.com



China sets the pace in a booming Asian engineering market.



PLANT PROJECTS IN ASIA 2018

South Korea	8
Turkey	9
Oman	9
Thailand	12
Indonesia	13
Saudi-Arabia	15
Japan	16
UAE	17
India	31
China	37

Source: GROAB

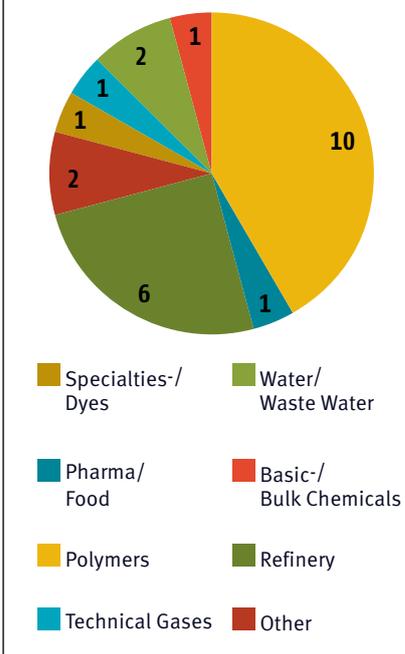
based teamwork”, explained Marcel Fasswald, CEO of Thyssenkrupp Industrial Solutions. The company commissioned the first plant for polylactide bioplastic in Changchun in October 2018.

The People’s Republic has long ceased to be a mere workbench for production, the decision by Covestro and Haier to set up a joint laboratory for digital solutions in Qingdao shows. Merck also announced a new competence center in the Guangzhou Special Economic Zone. The trend towards relocation of sensitive areas has interest groups worried about the industry’s future viability: German engineering association VDI sees the increased relocation of R&D from 21% to 34%, information technology (25% to 33%) and services (33% to 54%) as a cause for concern. “R&D in emerging markets is purposefully promoted by local politics, bureaucratic hurdles are significantly lower, and development is much faster,” said Claas-Jürgen Klasen, President Asia Pacific North at Evonik Degussa. Of course, the Chinese government is also investing

heavily in the development of new technologies. A protectionist policy makes the construction of own production facilities in the China increasingly attractive. Against this background, the interest of companies in on-site production in Asia is increasing: While for large chemical companies China is already the second most important investment target together with North America (46% each), according to recent surveys, the share of chemical companies is less than 500 Employees planning to invest in China over the next 12 months doubled to 23%.

While projects in China are increasingly being realized by one company alone, classic joint ventures are still attractive. BASF and Sinopec e.g. plan an joint steam cracker with a capacity of one million tons. In the meantime, Clariant was able to commission two new additive plants at Zhenjiang. Akzo Nobel, meanwhile, has started production of a new powder coating line in Changzhou, which is to become the world’s largest with a total capacity of 46,000 t. ■

PLASTICS AND POLYMER PLANT PROJECTS BOOM IN CHINA



The ACHEMA Pavilion @ TATARSTAN OIL & GAS FORUM

First Announcement of the ACHEMA-pavilion @ Tatarstan Oil & Gas Forum (September 2–4, 2019, Kazan/Republic of Tatarstan): unique opportunity for technology suppliers in Russia’s petrochemical hub.



Few regions of economic relevance are being left rather unattended in the highly globalized economy of today. Regions which require — and reward — a pioneering approach. When talking about countries which are not on everybody’s radar yet have economic potential, rich resources, a qualified workforce and favorable political frame conditions ... only a handful remain.

One such country is Tatarstan, a semi-independent Russian Republic which stayed, after the decomposition of the Soviet Union, under the political administration of Russia. Thanks to abundant fossil resources, the Republic of Tatarstan gained economic self-determination but remained, in terms of laws, currency or foreign politics, under Moscow’s umbrella.

From the process industry’s viewpoint, this region is where the action is in Russia. No other Russian province offers a similarly immediate access to fossil resources, together with well-established industrial sites, special economic zones, and efficient logistics.



Source: DECHEMA

ACHEMA 2018 hosted a business delegation from Tatarstan, spearheaded by the Republic’s President, Mr. Rustam Minnikhanov (middle).



Source: DECHEMA

Stand of the State Oil Company of the Azerbaijan Republic (SOCAR)



Source: DECHEMA

Tatneft experts were awarded the State Prize of the Republic of Tatarstan.



Source: DECHEMA

Visitors at the 2018 Tatarstan Oil & Gas Forum



Source: CC-Stasyant17

Source: in the public domain

Quick Facts

Tatarstan Oil and Gas Forum

- Topics: Oil & Gas / Fluid Handling / Automation, Measuring & Control / Corrosion Protection
- Venue: Kazanskaya Yarmaka
- 9,000+ attendees, mainly domestic / under the personal patronage of the Republic's President

Tatarstan

- Total population 3.9 million (2.4 million working age)
- GDP € 30 billion
- GMT + 3:00
- Capital: Kazan
50% of all Russian citizens live within 1,000 km of Kazan (!)
- 1st in the national ranking of business climates in Russia

Turn-key
booth packages
from € 3,330
for a 9 sqm stand

Media package € 473
(incl. conference accreditation
for exhibitors, show catalogue entry,
participation in all Forum events,
evening events, and
exhibitor services)

It is against this background that ACHEMA 2018, the leading show for our industry, recently hosted a business delegation from Tatarstan. The delegation was spearheaded by the Republic's President, Mr. Rustam Minnikhanov — who was quite impressed by the ACHEMA in general, and by the exhibitors' technological competence in particular. Taking this as starting point, DECHEMA's management, their long-term Russian cooperation partners Messe Frankfurt Russia, and Tatarstan authorities jointly came up with the initiative to **integrate an ACHEMA presentation in their annual Oil & Gas Forum**. This creates a unique opportunity for ACHEMA exhibitors to present their know-how and technology directly in the hub of Russia's petrochemical sector.

Together with Messe Frankfurt Russia and the fairgrounds operators in Kazan, we are now offering a package deal which enables ACHEMA exhibitors to participate in the 2019 Tatarstan Oil & Gas Forum in the format of a dedicated ACHEMA group presentation:

Please note: The ACHEMA pavilion will only be staged if a minimum of 25 exhibitors commit to attend. ■

Contact

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Phone +7 495 649 87 75 ext. 103

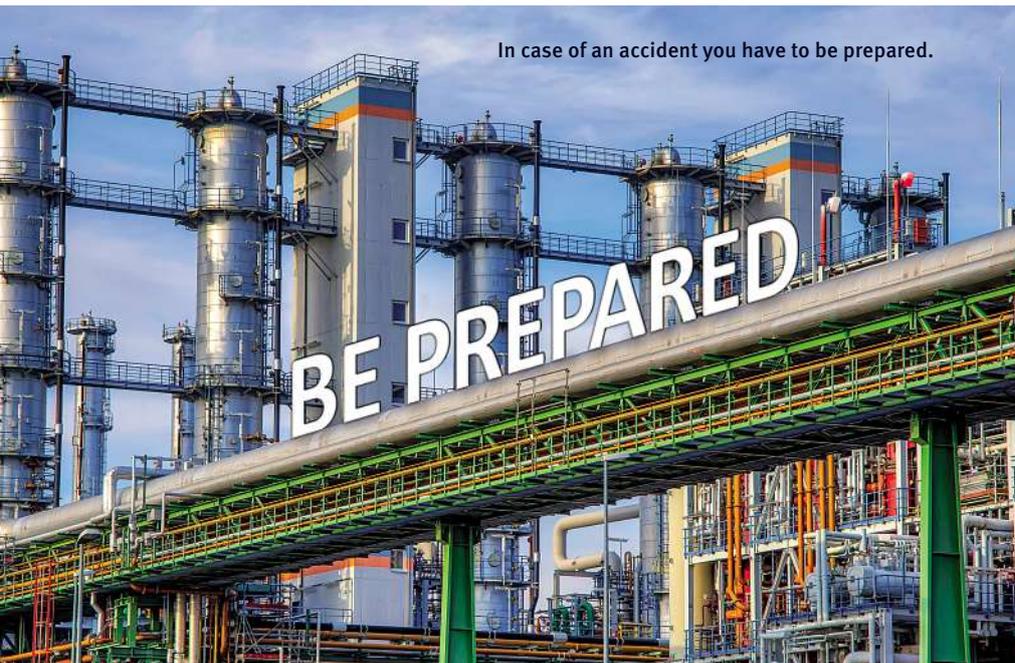
or



Dr. Thomas Scheuring:
scheuring@dechema.de
Phone +49 69 75 64 33 6

CRISIS MANAGEMENT: HOW TO PREPARE?

Crises arrive quickly and unexpectedly. Companies need to be prepared and follow the slogan of Benjamin Franklin: Don't fail to prepare, or you are preparing to fail.



In case of an accident you have to be prepared.

BE PREPARED

Source: ©Comofoto - stock.adobe.com

MARINA KOROGODSKA*

An accident on the factory premises, production has stopped, the clock is ticking, your mobile phone is ringing uninterruptedly, but why yours of all things? Shouldn't you call someone, too? But who first? Where is that emergency phone list, was it on the intranet or is it the slightly yellowed note on the bulletin board, which has officially been abolished? And if your servers are suddenly down – would you prefer an outdated server structure to a cyber attack as the cause? Yes, crises arrive quickly and unexpectedly. And, to speak with Benjamin Franklin: “By failing to prepare, you are preparing to fail.” But how do you prepare for a crisis? First of all, take a minute, sit down and think about what could happen to your business.

What crisis can occur? The German Federal Ministry of the Interior sees crisis situations most frequently caused by the following:

- natural events: Extreme weather conditions (e.g. storms, heavy precipitation, high water, heat waves), forest fires, earthquakes, epidemics, also known as Force Majeure;
- technical/human failure: system failure (including under- and over-complexity in planning), negligence, accidents;
- terrorism, crime, war: attacks, assassinations, sabotage, civil war;
- cybercrime.

Crises can affect companies and institutions from all sectors. However, one fact unites all those involved: if a crisis occurs, there is no time for the development of strategies and definitions of responsibilities; immediate action must be taken. You as a manager, plant or department manager or press spokesman are then in demand. Do you already have a statement prepared for this case? Do you know who is part of the crisis manage-

ment team and what responsibility they take over?

Indispensable: A Crisis Manual

What are the factors for successful crisis management? It is based on the principle: Prevention of the crisis – Overcoming the crisis – Follow-up to the crisis including new prevention measures.

This cycle illustrates the enormous importance of crisis prevention. One of the most important tools that can (and has to be) prepared is the “Crisis Manual”. Whether it is printed or kept in a digital form is irrelevant. If both versions are available, both must be kept up to date and made accessible to the stakeholders concerned at all times.

Regardless of whether your company or institution operates in the industrial or service sector, chapters on functions, responsibilities, contact data and phone lists, rules for behaviour and exchange of information and business processes should be part of every crisis manual.

However, further measures should also be taken in advance. Clear role allocations, clear allocation of responsibilities and reliable interface definition not only save valuable time in the case of a crisis, they also ensure competent and orderly internal and external communication. Regular training measures such as camera and media training can create a solid basis for a confident appearance, thus giving the participants a certain routine for such extraordinary situations. Preventive measures can eliminate crisis and risk factors as well as ambiguities in advance. Corresponding crisis communication plays an indispensable role in this.

Communicating in a Crisis

Interview situations for various media such as television, radio and newspapers can and should be practiced regularly by company spokespersons and manage-

ment. However, this measure is only a fraction of a successful crisis communication.

The following principles are decisive:

- openness
- transparency
- credibility
- dialogue orientation

These should be:

- fast (active and early)
- true (factual)
- understandable
(short, simple, pictorial)
- consistent
(uniform, coordinated, continuous)

Many topics can and must also be prepared in crisis communication before a crisis occurs. This includes the establishment and maintenance of media networks as well as information material prepared in advance. The various interests and needs of all those involved must be taken into account. A distinction should be made between three subgroups.

1. Internal target groups are your own employees. They are the most credible dialogue and multiplier group that you have within reach through involvement before, during and after a crisis, because they are reliable information providers for outsiders.

2. external target groups, such as customers, suppliers, the media, shareholders and the general public. Here a uniform line of communication is crucial.

3. participants in crisis management, ministries, organizations, authorities.

Ideally, all three target groups are provided with relevant information at the same time. Contacts should be established and maintained in advance in order to be able to fall back on them in an emergency.

Social Media: Friend or Foe?

Social media plays an important role in communication with all three target groups. The enormous and lasting change in communication behaviour and media use through social media must be taken into account above all in crisis communi-

cation. The “one-to-many” principle, i.e. one or a few transmitters serve many recipients, is no longer in force.

Today the following applies: “many-to-many” communication, everyone can be sender and receiver, the boundaries are no longer strictly defined, everyone is able to reach a large community with their messages through their social media channels.

The speed of information distribution should also not be ignored. The expectation of being served with quick answers or statements round the clock is extremely high among all target groups.

A monitoring system set up in advance enables you to react more quickly in the event of a crisis and thus curb the spread of false reports. In addition, you maintain a high level of interpretation of the situation and thus reduce the extent of the crisis. In general — an open approach to the crisis and the associated willingness to communicate promote the credibility of the company or institution. ■

* M. Korogodska, DECHEMA Communications

FUTURE PRODUCTION AND THE HUMAN FACTOR

Don't underestimate the role of non-technical barriers in digitalization projects – without convincing arguments and the commitment of employees, many projects won't even start.



Source: ©krunja - stock.adobe.com

DR. KATHRIN RÜBBERDT*

The challenges for the introduction of new digital processes and business models in the chemical industry are manifold. But while the discussion focusses on technical interfaces and standardized data formats, other barriers are often overlooked. We have asked industry experts what non-technical barriers they see and how these could be overcome.

Mostly High Level Management is Focused on Payback

Mark Talford from Britest Ltd. has noticed a deep-set risk awareness in companies in the process industries. "It's absolutely right to be risk averse when we are talking about safety," he says. "But it seems that this mindset pervades beyond safety and affects investment decisions based on financial or commercial risks." He and his

team have worked in several projects on decision-making in the process industries. One of the drivers was the EU's need to ensure the uptake of technologies developed in EU-funded research projects. Talford says: "There are some obvious general issues around awareness – are we doing a good enough job in making people aware of the potential of technologies that have been developed? But when you start to dig deeper, you face the cultural barriers. Investment decisions are made based on the perception of potential benefits versus risks. I think we need a more structured approach in evaluating these benefits and analyzing what new technologies offer compared to established technologies." According to Mark Talford, the same applies to investment decisions required to implement new technologies: "Invest-

ment decisions are largely only based on rate of return. If you have five minutes to pitch your idea to the board and secure your investment, it all boils down to payback. You don't have the time to communicate some of the hard-to-quantify benefits, and there are certainly factors that are difficult to quantify in a rate of return way."

He and his company have recently completed a collaborative research project led by Dutch research organisation TNO to develop a multicriteria decision-making tool that combines financial, environmental and technical risks and benefits. It allows presentation of options ranked against each other based on defined factors and also takes uncertainties into account. "We found that the ap-

* K. Rübberdt, Head of DECHEMA Communications

proach works quite well. But there is still work to do to get this into one slide to present to the board,” says Mark Talford.

Drawing a Line from Technology to the Customer

Michael Dejmek from catalyst R&D provider hte thinks that technology providers need to explain the benefit of their products much better. “From my point of view, regarding the implementation of technical solutions there has hardly anything happened over the past years,” he says. Despite a large number of events and a great awareness of potential customers for and interest in solutions for “industry 4.0” and “future production”, the benefit often remains unclear. “There are needs that could be fulfilled by these technical solutions, but there is no one who can help potential users to identify which solution can fulfil their need: Is it a technical solution, is it process technology or is it software? How are they supposed to know which one of the many offerings is the right one?” says Dejmek. At the same time, he sees tremendous potential if providers are able to draw a line from their technology to the needs of their customers. “It’s not enough to say I’m able to connect any device to the IoT – they need to say why.” Even large companies struggle with the identification of opportunities, and smaller ones refrain from any investment without a tangible solid business case.

Here, the project Smart-De’s@Work enters the picture. The consortium has its eye firmly on “the human factor”: “We need to include employees from the early stage on,” says Ulrich König, Project Group Business Information Systems Engineering of Fraunhofer FIT. “They

need to understand how they can benefit from the changes. A solid use case that we can discuss with the individual employee is very helpful.” An example: Data quality regarding maintenance at one company was poor. In discussions with maintenance staff, the team found that the reason was that all data had to be entered into central terminals. Instead of going there after every action, the staff performed several tasks at different machines and postponed documentation, resulting in gaps and erroneous informa-

tion. The solution: With the help of a portable smart device, staff is now able to enter data on site right after the tasks are concluded without interrupting their work and covering a distance to the terminal. “The staff even came up with ideas which data they could collect in addition,” says Ulrich König and sums up his experience: “If employees don’t get the impression that the aim is additional supervision, but experience a tangible benefit, they take an active and very constructive part.” ■



❖❖❖ **International Events Organized by DECHEMA**

- **June 11–14, 2019:** 13th International Workshop on Polymer Reaction Engineering — Hamburg/Germany
- **June 16–20, 2019:** 12th IWA International Conference on Water Reclamation and Reuse — Berlin/Germany
- **June 23–27, 2019:** 17th International Conference on Carbon Dioxide Utilization — Aachen/Germany
- **August 18–23, 2019:** EuropaCat 14th European Congress on Catalysis — Aachen/Germany
- **September 3–4, 2019:** PRAXISforum Lab of the Future — Frankfurt/Germany
- **September 9–13, 2019:** EUROCORR 2019: New times, new materials, new corrosion challenges— Seville/Spain
- **September 11–13, 2019:** 12th International Particle Toxicology Conference — Salzburg/Austria
- **September 12–13, 2019:** German Conference on Synthetic Biology — Aachen/Germany
- **September 15–19, 2019:** 12th EUROPEAN CONGRESS OF CHEMICAL ENGINEERING & 5th EUROPEAN CONGRESS OF APPLIED BIOTECHNOLOGY — Florence/Italy
- **September 16–19, 2019:** German Conference on Bioinformatics — Heidelberg/Germany
- **October 8–9, 2019:** PRAXISforum Power-to-X— A vision moves towards application — Frankfurt/Germany
- **October 27–20, 2019:** EuroMOF 2019 3rd International Conference on Metal Organic Frameworks and Porous Polymers — Paris/France

❖❖❖ **Further Information:** dechema.de/veranstaltungskalender

KETBIO — THE BIOTECH BOOSTER FROM RESEARCH TO BUSINESS



Source: DECHEMA

KETBIO, an initiative to transfer research results to markets, has gone live with a novel online hub for key enabling biotechnology research. The highly interactive platform offers to the biotech community an interesting online meeting place, including the opportunity to prepare for market access with KETBIO's core service: evaluation of commercial potential of promising biotechnology projects. The platform is open to all professionals and scientists in the various fields of biotechnology. With their registration, participants will get access to a full range of opportunities:

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- networking with peers and experts,
- showcasing project profiles to a wide audience,

❖❖❖ **Further information:** www.ketbio.eu

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