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Innovate Or Bust

Dear Reader.

The distribution and logistics of chemical goods are two sectors that are closely linked, if not interwoven. This is natural since both activities are part of the same supply or value chain. Comprising much more than trading and transportation, the business models of the market participants differ. In each of the sectors there are full-service providers and specialized players, and there is no one-size-fits-all approach.

Globalization and digitalization, consolidation in the industry, enhancing levels of complexity and regulatory compliance, the volatility of market conditions, economic uncertainties, and the increasing requirements of suppliers and customers pose a variety of challenges on chemical distributors and logistics providers. Innovation seems to be an adequate – if not the only feasible – means to conquer these challenges. In this edition of CHEManager Distribution & Logistics we have therefore put innovation in the spotlight.

From the customer perspective, distribution and logistics companies are confronted with more short-term ordering patterns and reduced shipment sizes. Manufacturers are increasingly looking at outsourcing their routes to market, and in order to do so, they need professional partners who can understand their strategies and fulfill their requirements.

Regulatory compliance demanded by suppliers and customers is seen as critical to business success. but it is absorbing more management time and a significant amount of money and resources at distributors. The provision of regulatory advice is a service element offered by some distributors, which has gained a great amount of attention over the last few years. A number of distributors try to differentiate themselves from their competitors by providing further services. Typical examples are application laboratories. Although technical capabilities and laboratory support are seen as a differentiator by the customers, they are rarely paid for.

M&A activities in the industry continue to make headlines, as acquisitions are a major growth driver for companies. The rationales appear to be an expansion of geographic as well as industry coverage. The shale gas boom, and the resulting revival of the chemical industry in the US, has had a profound influence on the chemical industry and product supply patterns globally. The US chemical market, although mature, has become interesting again for investors.

Emerging markets such as China show continued, though slower, growth, while India and other parts of Asia still attract a great amount of attention when it comes to regional expansion. Other markets remain in the spotlight, e.g. Nordic and Eastern European countries and Turkey. Latin America, especially Mexico and Brazil, could offer growth opportunities, although economic growth rates in these markets can be volatile.

As supply chains become more complex, and markets become more volatile, collaboration between che-



Dr. Michael Reubold

mical distributors and logistic service providers has become increasingly important in recent years. Neighbors in the chemical suply chain, distribution and logistics companies are working closer together than ever before, ensuring a flexible and dynamic approach to changing market needs. This interface will continue to grow in importance, benefiting all up and down the value chain.

Please take the time to study this issue, it will be time well-invested.

Dr. Michael Reubold, Editor-in-Chief, CHEManager

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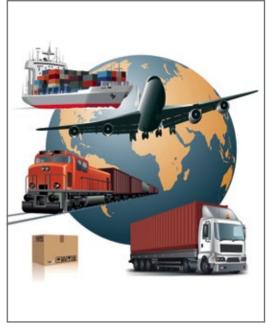
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Creating value, growing together

Cooperation Drives Success

Rising Customer Expectations Require Close Collaboration between Distributors and Logistics Companies

Collaboration between chemical distributors and logistic service providers (LSPs) has become increasingly important in recent years as supply chains become more complex and markets more volatile. Distribution companies are present in multiple markets – from bulk commodities to specialty chemicals and pharmaceuticals – each with their own characteristics and special requirements.



Business models differ too, with some, such as market leader Brenntag, having its own warehouse and transport capabilities while others, such as specialty distributor IMCD, choosing to mostly outsource. However, the interface between distributors and LSPs largely follows the same approach, irrespective of markets served, with a strict assessment and selection process, frequent performance appraisals, and a cooperative relationship where information is freely exchanged.

Brenntag's Business Model

Germany's Brenntag uses third-party logistics companies to supplement its own network of warehouses and trucks. Gordon Hay, Brenntag's operations director Europe, Middle East & Africa (EMEA), says the distributor, which handles both hazardous and non-hazardous products, has a range of sources, strategies and tools to select LSPs. For instance, he says, in the life sciences sector, Brenntag continually looks at compliance and GMP guidelines, among other factors, when selecting partners.

Hay explains that Brenntag has a host of fairly stringent performance criteria, including safety (top of its agenda), security, knowledge of the industry, range of equipment, geographic coverage, financial stability, flexibility as well as ease of doing business and how innovative potential suppliers were. These metrics are bundled into an assessment of potential providers on the market.

For transport, the distributor works closely with industry organizations FECC and CEFIC who have established SQAS – Safety Quality Assessment System – a voluntary standard used to assess safety, security, health, environmental quality and corporate social responsibility under Europe's Responsible Care program. Hay says Brenntag uses SQAS as an indicator in its selection process.

"Expectations of customers and logistics service providers are rising all the time and there is growing demand for higher levels of service and efficiency," comments Hay, who believes that closer collaboration up and



"Raw material prices, currencies and demand patterns are changing rapidly." Hans-Jörg Bertschi, Bertschi

"Brenntag got involved and we shared the best practices with our LSPs to get an overall increase in standards," says Hay.

IMCD's Business Strategy

Dutch distributor IMCD says its strategy is to outsource all logistics activities to "carefully selected" providers,

fectly manage supplier and strategic business changes quickly with minimal or no capital expense," explains Stan Bijsterveld, IMCD's supply chain director.

IMCD currently has about 15 warehouses contracted in Europe and roughly 30 carriers. Functions outsourced include the storage and transportation of packed goods and wet or dry bulk, and value-added services such as labelling, repacking, refilling, bundling, mixing and blending. Bijsterveld adds, however, that IMCD has chosen to invest in its own warehouse operations in emerging markets such as Brazil, Indonesia and Malaysia, to ensure compliance with its higher European standards.

Like Brenntag, IMCD scores across a variety of factors when selecting LSPs, including too any potential constraints such as management directives, government regulations, existing contracts and commitments.

Both companies regularly measure non-conformances and have a range of pre-agreed key performance indicators (KPIs) and ongoing reviews



"We can manage supplier and strategic business changes quickly with minimal or no capital expense." Stan Bijsterveld, IMCD

down the supply chain can drive best practise.

For example, the distributor asked one of its suppliers – a major oil company – if it could participate in a safety training program that was being rolled out across its service providers. allowing it to benefit from best-in class operations and dedicated resources. "In addition, we have the flexibility and scalability of third-party operations, the ability to adjust our distribution and warehousing needs based on demand, and we can per-

which are followed up, if necessary, with corrective actions and/or process improvements. Price, although one factor in the selection process, is less important than offering a safe, efficient service with a culture of continuous improvement, both Brenntag and IMCD say.

Bertschi's Logistics Expertise

Representing the other side of the relationship is Swiss logistics and transport company Bertschi. The company is a major partner to the plastics distribution sector, supplying handling, warehousing and transportation services as well as customs operations and, where required, fiscal representation of customers. According to Bertschi, the volatility of products flows has increased in the last few years. "Raw material prices, currencies and demand patterns are changing rapidly," says CEO Hans-Jörg Bertschi.

The company, which has a fleet of more than 9,000 dry bulk containers and 400 specialized trucks, is present in 16 European countries as well as Russia and Turkey, and claims to operate the most dense intermodal rail and short sea network in Europe. Its network comprises more than 40 operational subsidiaries across Eu-

marking results with a peer group of LSPs

It too enjoys a close collaboration and information exchange with its distribution customers, including forecasting, regular reporting and KPI-based performance reviews. The company says it can also evaluate distributors' best cost-to-serve solunal markets like the UK, Italy or Scandinavia instead of going through one central European storage location, which is typically located in Benelux.

Bertschi has major plastics hubs for both packed and bulk plastics in Middlesbrough, UK; Bologna, Italy; and Wallhamn, Sweden. Additional import handling facilities for bulk plastics are located in Rotterdam, the Netherlands (to serve markets in Benelux/Germany) and Schwarzheide, Germany (for supplying eastern Germany, Poland and Czech Republic).

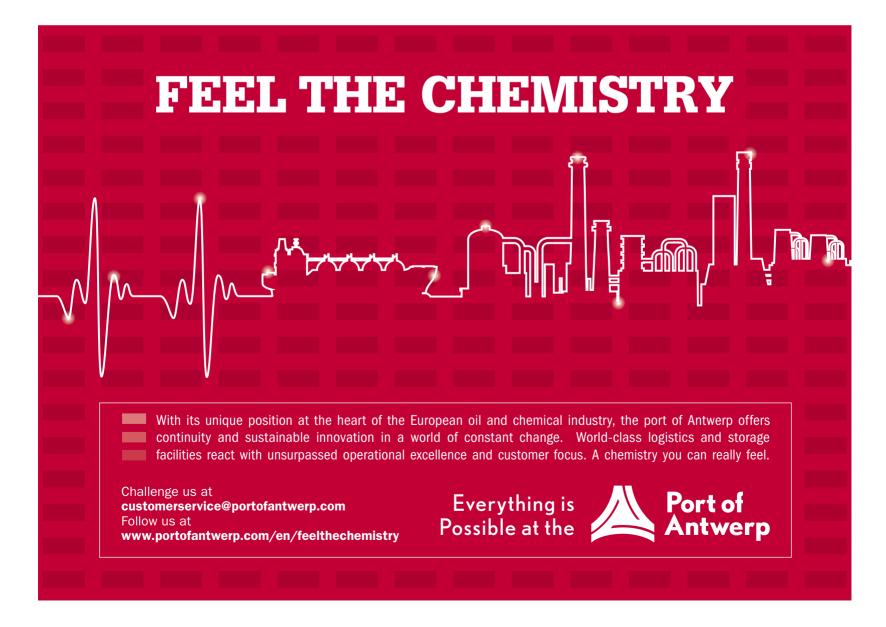
Distributors and LSPs are working closer together than ever before, ensuring a flexible and dynamic approach to changing market needs. This interface will continue to grow in importance and transparency to foster ongoing improvements in safety, best practise and customer satisfaction – benefitting all up and down the supply chain.

Elaine Burridge, CHEManager



"There is growing demand for higher levels of service and efficiency." Gordon Hay, Brenntag

rope which Bertschi says "ensures a high level of supply flexibility in today's fast-changing business environment." He adds that as a Responsible Care partner, Bertschi systematically measures safety, efficiency and environmental performance, benchtions for global plastics import flows on a door-to-door basis with alternative European distribution scenarios. These benchmark exercises, notes Bertschi, often show that it is more cost-effective to import overseas plastics directly into several major regio-



Distribution Models for the Future

Success Factors for Chemical Distributors Include Complexity, Implementation

Distributors often see themselves in a central position within the chemicals (or polymers) value chain, as a bridge between supplier expectations and customer needs. This position brings with it the potential to add significant value for these two stakeholder groups and the distributor itself, but it also brings some challenges.



Guenther Eberhard, DistriConsult

Distributors must always satisfy these sometimes opposing needs at reasonable cost and also generate a return for themselves, which allows for the continued investment in the business system and its infrastructure.

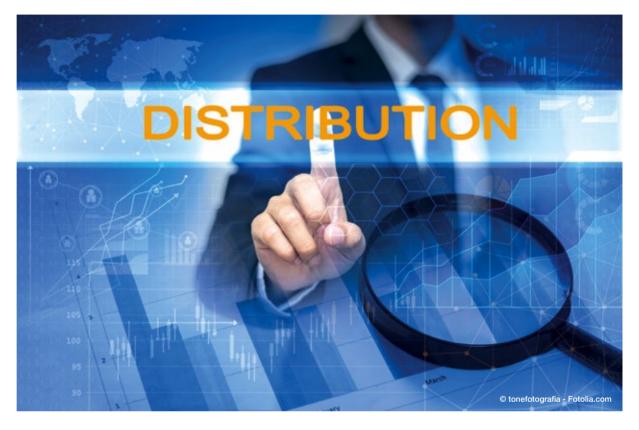
A Sandwich Position

Chemical distributors can sometimes feel they are caught in the middle between supplier expectations and customer needs. Suppliers use distributors to get market reach and access to customers they would otherwise not

"Technical capabilities and laboratory support are seen as a differentiator but rarely paid for explicitly."

find — or reach at a reasonable "costto-serve" level. They expect the indirect channel to give them the necessary "capillarity" and their distributors to offer services around their products.

Distributors are expected to have their own technical service specialists



and application laboratory facilities. Suppliers want their distributors to observe their often-stringent business standards, stipulating minimum order sizes, longish lead times and other logistics parameters. They also expect their distributors to be transparent, feeding them back customer and application specific information on the use of the products, so that they can maintain insights into technical and commercial needs of enduse customers and a connection with the marketplace.

And on the financial side of the business, distributors are expected to have robust financing, so that a supplier's bills can be paid reliably within short payment terms.

Customers, on the other hand, expect local inventory of the broadest product portfolio possible, so they can call off product on short notice, often in ever-decreasing lot sizes. The product should come from reputable suppliers, must ideally be from just one single batch and have a long remaining shelf life upon shipment. Security of supply must be guaranteed at all times.

Distributors are expected to provide extended credit terms according

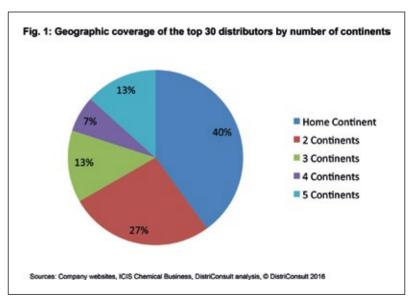
to local business practices and ensure competitive pricing. Technical capabilities and laboratory support are seen as a differentiator but rarely paid for explicitly.

Managing Complexity

The two sets of expectations are not always fully compatible. Regulatory requirements and the need to comply

with industry standards and practices add another challenge. As a consequence, distributors must cope with a high level of complexity and manage it in a smart way, so that the cost of the business does not get out of hand.

As the requirements vary by application (i.e., industry sector), a certain level of specialization is often the case. Some distributors focus on life sciences, where a high level of





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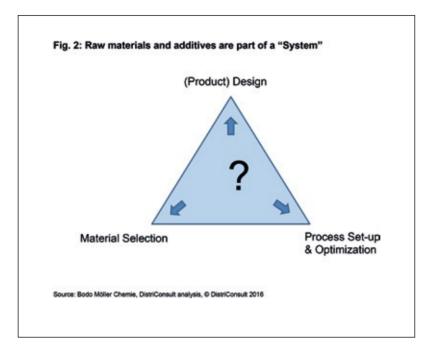
Distribution 1

regulatory expertise is needed. Others feel more at home in technical applications such as coatings, adhesives, sealants and elastomers (CASE), plastic additives or lubricants.

Unique local situations, needs, preferences and restrictions also come into play and often form a formidable hurdle or force a distributor to line up and execute business transactions in a particular way. Distribution, as seen from a customer perspective, is in essence a local business. Suppliers, on the other hand, more used to economies of scale, tend to favor all-encompassing solutions, sort of standardized to cover larger geographies.

Global Distribution!?

Then what is the best business approach to this, a global or at least pan-continental or a local setup? In our observation, a few large suppliers drive most of the pan-conti-



nental or even global approach. It is, at least to some extent, a matter of (supplier) company size and scope of activity. Some large distributors have responded to this. They view it as an opportunity for commercial differentiation from their (mostly smaller) local or regional competitors.

But even at large producers, different models do coexist. Dow Europe uses three rather distinct models to satisfy the needs of a multi-business unit (BU) enterprise:

- ☐ 1. Country Leader (limited geography, many applications and Bus, respectively)
- □ 2. Industry Specialist (broad geography, one application, few BUs)
- ☐ 3. Pan-European Partner (broad geography, many applications, many BUs)

Why all these different models, when otherwise simplification is the name of the game so the benefits of a large-scale approach can be captured? Well, market needs and structures matter, too. And these may make it more beneficial to work with what is here termed "Country Leaders" or "Industry Specialists" for some geographies or at least some product lines (i.e., BUs), respectively.

DistriConsult has recently done an analysis of the top 30 distributors glo-



bally to assess their geographic coverage. This was based on figures published last year by ICIS (Fig.1). Two-thirds of the companies studied are active on one or two continents. Usually their home continent plus a selection of countries on another continent, where the company has over time developed historical links, often based on a common language. Another reason may be that it was attracted to these regions by higher growth rates and other perceived development opportunities overseas. Sometimes there is also a certain level of supplier push or customer pull, mostly along the lines of "you are doing such a great job for us in country ABC, can you not help us in country DEF as well?'

Materials And Processes

Particularly in the distribution of specialty chemicals, be it in the form of ingredients, additives or formulations, technical expertise increasingly goes beyond the product and its properties or functionality and performance. A competent distributor must also understand the design (or formulation) concept, which is behind his customer's product and the process that is being used. Only when a sort of "systems approach" is being taken can the full performance be achieved — can a good cost-benefit balance be reached (Fig. 2).

This has a strong influence on how distributor interacts with customers. Understanding their needs is essential. Customer management must be done systematically, and that is often a very local task.

Customer Management

Good customer management requires detailed insights into the needs of every customer and the resulting buying behavior. Their preferences can show a wide variation, which makes it sometimes difficult to group them into suitable segments. Market segmentation exercises, when set up properly, can be enlightening. But they can also be tedious. And if the resulting segmentation is too complex or the segments themselves are too small, the cost generated by a differentiated approach can outweigh the expected benefits by far.

Customers vary in size and importance: small customers, medium-

sized customers, large customers and key accounts. And it is not just the key accounts that are important. Some small or medium-sized customers may be fast growing with their innovations and therefore become very relevant in the near future. One should also not forget former customers. Winning them back might be easier and more economical than developing entirely new customers.

Really knowing one's customers well, understanding their business



"Simplification is the name of the game."

and needs, also helps when talking with suppliers. This type of insight into a market or an application is what many, if not all of them, are looking for, when they assess and select distribution partners. A key point here is that a lot of this has to be done on a point-of-use (i.e., local) level, because customer needs are different across locations or regions.

Implementation Matters Most

In our view, distribution is essentially a local business. Customers want distributors that understand the customers' business. Going through a needs-based segmentation exercise can pay off nicely, as long as it is done properly and fragmentation is avoided. Real knowledge of one's customers' needs is a very valuable asset. That is what suppliers want to use and leverage when they select distributors as a channel-to-market. Some suppliers take an increasingly global approach to their business and expect the same from their distribution partners. However, current evidence suggests that this approach is for the few big players, on both sides, as critical mass is an issue here. As with many other management initiatives, well-thought-out plans are a good starting point. However, success ultimately requires having good people in the company to take care of the implementation.

Guenther Eberhard, Senior & Managing Partner. DistriConsult GmbH, Waedenswil, Switzerland geherhard@districonsult.com www.districonsult.com

Brenntag to Buy Korean Distributor Whanee

Brenntag has agreed to acquire the South Korean specialty chemicals distributor Whanee Corporation, based in Gwacheon, near Seoul. Whanee, which reported sales of €16.8 million in 2015, mainly supplies the domestic South Korean market with a wide range of food and beverage ingredients and has a focus on dairy, functional and flavor related products.

The German chemical distributor said the acquisition facilitates its Brenntag Asia Pacific subsidiary's entry into the South Korean specialty chemicals market following the December 2015 acquisition of TAT Group, which gave it a berth in the country's industrial chemicals market.

With the first acquisition, the distributor established Brenntag Chemicals Korea, which operates in the segments Lubricants, Personal Care, Coatings and Home Care. Both operations now have set a "solid footprint" for the distributor in South Korea, said Henri Nejade, CEO of Brenntag Asia Pacific.

Brenntag said Whanee offers access to a solid local customer base including key players in the dairy food and beverage industry. In addition, it said the company has a reputable international supplier base, partially with exclusive rights to import and sell the supplier's products in the domestic market.

Cornelius to Launch Nordic Business

Cornelius Group, an independent European distributor of branded and ownbrand specialty materials and ingredients for the health and nutrition sector, is to launch a new business arm in the Nordic region that will have its headquarters in Silkeborg, Denmark. Its founding will enable the company to extend its reach into Scandinavia, including Finland and Iceland, by enhancing existing customer relationships and developing new partnerships with suppliers. Cornelius Group, which has its UK headquarters in Bishop's Stortford, Hertfordshire, also supplies and manufactures products for the care, beauty, household and industrial sectors.

Maroon Takes Over Distributor U.S. Chemicals

Maroon Group, an Avon, Ohio, USA-headquartered distribution company, has acquired U.S. Chemicals, a specialty chemicals distributor based in Darien, Connecticut, USA, for an undisclosed sum. Founded in 1960, family-owned U.S. Chemicals supplies specialty intermediates to the coatings, adhesives, sealants and elastomers (CASE), lubricants, plastics and associated industries, delivering out of 14 warehouse locations across the US.

Maroon's president and CEO, Mark Reichard, said the acquisition significantly broadens the company's product portfolio, service offerings and customer base. Maroon supplies specialty additives, resins and pigments to more than 900 manufacturers in a variety of industries. It has warehouses in Avon and Cleveland, Ohio, and Chicago, Illinois as well as 10 distribution centres scattered throughout North America. (eb, mr)

Krahn Acquires Distribution Business of Lapis

With retroactive effect from January 1, 2016, Krahn Chemie has acquired the distribution activities of the Dutch company Lapis Minerals & Chemicals (Lapis) as part of an asset deal.

The focus of the Lapis business is in the distribution of construction chemicals in the Benelux countries. The acquisition is thus in line with the Krahn Chemie strategy to further strengthen its core segments in Europe. Also to be viewed in this context is the recruitment of the former Lapis manager Ferry Jacobs, who not only assured the smooth transfer of the acquired businesses but who, as Technical Director Construction Chemicals for Krahn Chemie, also wants to expand this sector throughout Europe.

"The Lapis distribution business allows a significant strengthening of our business in the Benelux countries and simultaneously a targeted expansion of our construction chemicals activities", comments Dr. Rolf Kuropka, Managing Director of Krahn Chemie. (mr)

Inspiring Innovation

As a Crucial Part in the Chemical Value Chain Distributors are able to Engage in True Innovation

The chemical distribution industry has annual sales of around €168 billion globally, with about €28 billion in Europe. As a crucial link in the supply chain that connects manufacturers of chemicals with their customers in numerous application areas, distributors are an essential partner in the value creation process. The European Association of Chemical Distributors has picked the theme "Inspiring Innovation in a Global Economy" for its annual congress to take place in Istanbul from June 6 to 8, 2016. Dr. Michael Reubold asked Dr. Uta Jensen-Korte, director general, and Dr. Neville Prior, president of the FECC, about the role innovation plays in the chemical distribution industry, the key trends and the success factors for the future.



Dr. Neville Prior,



Dr. Uta Jensen-Korte, FECC

CHEManager: Would you agree that innovation is not the first word that comes to the mind of anybody – even industry experts – when talking about the chemical distribution industry? Is the industry struggling with a somewhat shopworn image?

Dr. N. Prior: An industry of €168 billion does not achieve that figure without being innovative. It may be that the message is not communicated well

enough, and that is something that industry associations and industry players should pay more attention to. There are many examples of innovative practices within the industry, whether it be within the supply chain, product development with upstream manufacturers and downstream customers, or internal process improvements. We are seeing many distributors looking at their business models, and seeking to develop their businesses to meet and anticipate the needs of their principals on the one hand, and their customers on

the other. As our recently appointed Director of Strategic Marketing at Cornelius said to me, "there are so many opportunities to innovate; it is an exciting prospect".

Not so long ago, distributors were traders responsible only for sourcing and distributing goods. Nowadays, offering added value services for suppliers and customers is a competitive factor in the industry.

What has sparked this trend, and will it continue or even expand to other service areas?

Dr. N. Prior: It is true that distributors and traders were simply a conduit to market for their suppliers until quite recently. However, manufacturers are increasingly looking at outsourcing their routes to market, and in order to do so, they need professional partners, who can understand their strategies and fulfil their requirements. This is not just storage and delivery, but increasingly requires break-bulk, specialized packing, blending, dilution and more besides. Customers on the other hand are looking at creating close purchasing relationships with high quality, ethical suppliers, who can deliver on time in full, and who make doing business easy. The principal and customer experience is key to distributors, and ultimately gives competitive advantage to those that "can deliver".

Many distributors are supporting the need of their suppliers and customers to innovate. Why is innovation crucial for the distribution industry?



Dr. U. Jensen-Korte: Quite simply, if an industry and its members cannot meet the requirements of their customers, then ultimately it has no place in the supply chain. Distributors work closely with suppliers and customers, it is quite a unique relationship, and we see both sets of businesses innovating more and more. Because of that relationship and important position in the supply chain, distributors can make a huge difference. We want our customers to innovate and grow, and we want our principals to do likewise. It creates value and opportunity for all, and helps to provide growth opportunities, which we all want and need.

Particularly in the field of specialties, distributors are required to go further in creating innovative solutions for principals and customers alike. How can chemical distributors contribute to the innovative ability of their partners - or in other words to the innovation across the value chain?

Dr. N. Prior: Distributors are often thought of as a supply chain industry with some sales people! Today that is far too simple a picture. Whilst supply chain innovation is important, and is something distributors are rather good at, they do far more. More and more we see application laboratories being established, and these work closely with principals and customers alike. They help to bring innovative uses for products and ensure that a principal-distributor-customer logue around technical issues blossoms. We also see increased use of sophisticated marketing techniques,

"The industry is large and there is a place for organizations of all sizes, provided they bring value."

such as social media, which spans the industry and beyond, again creating more opportunity. Distributors are ever more multi-facetted and able to engage in true innovation.

A question that is constantly being discussed in the chemical distribution industry is "does size matter?" Does it matter - in one or another way - for the capability of distributors to innovate?

Dr. N. Prior: I am not sure that size matters as long as distributors can align their strategic intent with those of their principals and customers. This could mean a number of things, but essentially without a common vision the relationships become fraught and stretched. It is clear that there are certain core requirements surrounding quality, regulation, product stewardship, logistics and customer service, but beyond that each company can find its niche. Some principals may want a global or regional solution, some a national solution; some may wish a pan-sector approach, other want specialists. The industry is large and there is a place for organizations of all sizes, provided they bring value.

Apart from the innovation fields linked to the development and application of chemical products, what other aspects of innovation does the slogan "Inspiring Innovation in a Global Economy" include?

Dr. U. Jensen-Korte: I believe that distributors need to be thinking about what the future will hold, and what part they can play in that. We see a number of emerging trends that will provide potential opportunities, and the industry must consider how it will approach them. For instance, we know the world population is growing and will need feeding. What place could we take in helping to ensure that the world's mouths are filled? Climate change and sustainable energy is another example where distributors may have a role to play. To consider these things, distributors will have to revise how they think of themselves, but innovation can go far beyond simple product innovation.

When you listen to your member companies and committee groups, what do you learn are the key trends or hot topics in the chemical distribution market these days?

Dr. U. Jensen-Korte: In Europe it is clear that legislation and REACh in particular remains a hot topic, but there are many others. We know that the EU is pushing on the subject of the circular economy, and this in conjunction with sustainability has come to the fore. We also see that there is a strong wish to raise standards in the industry, particularly in developing and fast growing parts of the world.

We want a strong industry with a good reputation. Of course the issue of size has been much debated, and we continue to see M&A activity throughout the world.

FECC is the voice of the chemical distribution industry in Europe. But business - and with it regulations, risks and opportunities - is globalizing fast. How is FECC collaborating with national associations outside of Europe or with the International Council of Chemical Trade Associations. ICCTA, in order to benefit its members?

Dr. U. Jensen-Korte: FECC has always had strong relationships with European associations - both distributor and manufacturer - and those in North America and Brazil. FECC continues to forge relationships with other associations where they exist. More recently we have been pivotal in changing ICCTA, which has existed for many years as a virtual organization. In February a new organization has been founded called the International Chemical Trade Association ICTA, to replace ICCTA. This new association has a dedicated staff and is

"Distributors will have to revise how they think of themselves."

based at the FECC offices in Brussels. It is supported by a number of founding associations and companies, and aims to increase this membership globally. ICTA will act as a voice at world bodies such as the UN and WTO and encourage and support industry best practice globally, ultimately with the aim of helping to establish associations where they do not currently exist. The industry is global and FECC is playing a strong role in ensuring it is a safe and sustainable industry for the future.

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Chemical Distribution in China

A Relatively Immature and Highly Fragmented Market with Huge Potential

So far, in the Western world limited attention has been paid to the Chinese market for chemical distribution. In fact, only last year's ICIS list of the biggest global chemical distributors for the first time includes a major Chinese player, Sinochem Plastics, ranked at No. 5 with 2014 sales of about €3 bn. However, this high ranking alone – taking into account that Sinochem Plastics' sales were almost exclusively generated in China – gives an indication of the importance of China's distribution market.

Another approach to estimate the polarge multinational companies with a tential of chemical distribution in the strong presence in China only serve a People's Republic is to look at the tofew customers directly and rely on distributors for 60-70% of their total tal size of the chemical market in China versus the chemical market in sales volume in China. This holds parthe EU or NAFTA - with a 2013 size ticularly true for imported products, of €1,047 billion (data: CEFIC), it is for which the local chemical distribuabout as big as the EU and NAFTA tor has the vital function of keeping market combined. As a consequence, stock worth the demand of several even if the share of chemical distribution in China is lower than in the West (some industry experts estimate that the share of distribution is 5-7%), the



Dr. Kai Pflug, Management Consulting — Chemicals

As a consequence, a shift by global players to local production in China is often accompanied by a stronger focus on direct sales. However, this is not always easy to implement locally. Sometimes the headquarters target to move towards direct sales or to reduce the overall number of distributors is ignored by local management. While a reduction of the number of distributors

is therefore part of the strategy of many global players, it is implemented less frequently, often out of a fear of short-term effects on chemical sales.

What makes a chemical distributor in China successful?

Of course, many of the usual success factors in chemical distribution also apply in China. It is important to have a strong portfolio of principals - for example, Azelis entered into the market as a distributor for CP Kelco's portfolio of additives, and IMCD enhanced its standing after starting to distribute the products of FMC. Ideally, a distributor should have several complementary principals targeting the same customer industry, allowing dilution of distribution costs and offering the customer the benefit of a reduced overall number of suppliers, coupled with a greater number of products to choose from.

For distributors focusing on specialty chemicals, it is essential to have competent technical staff and the necessary support infrastructure such as application laboratories. This holds particularly true when serving local rather than foreign customers in China, as the former tend to require more technical service due to their lower level of experience (global companies, MNCs, sometimes just need to adapt global formulations to locally available materials and thus need less technical assistance). This in turn requires hiring and maintaining qualified staff - not an easy task in a country in which the average employee turnover is much higher than in Europe (about 20% per year), and where trading may not have quite the same positive reputation either.

Establishing the capabilities for successful distribution particularly of specialties therefore requires a substantial investment in resources and a timeframe not of days or weeks (the traditional timeframe of Chinese traders of chemicals) but rather of several months or even years. Not all current market participants are willing to take this step, particularly when coming from a trading background.

In contrast, it is less necessary to handle logistics and warehousing as the Chinese market now has strong

Immature, Fragmented, Reluctant

that of the EU or of NAFTA.

total chemical distribution market in

China is likely to be larger than either

A major reason for the limited focus on the Chinese market is that compared to the West, the Chinese market for chemical distribution is still relatively immature. A large number of participants are primarily involved in trading, often adding no more value than some personal relationships to individual customers or producers. And the market is highly fragmented, with even the biggest players such as Sinochem Plastics only accounting for a few percent of the total distribution market. In addition, Chinese producers of chemicals are often reluctant to rely on distributors except for exports, particularly state-owned entities which often are already overstaffed and have an internal distribution

On the other hand, particularly for smaller foreign chemical producers in specialty areas such as electronic chemicals (e.g., for Japanese or Korean producers of photoresists), distributors are essential to amplify their resources in China. Even many



and reliable companies that can take over these functions from chemical distributors - even though of course it increases the attractiveness of a distributor for a principal to have many offices, warehouses and own logistics services. However, choosing a reliable partner for these functions is still vital, particularly as the implementation of applicable regulation is getting stricter after the Tianjin explosions of 2015.

Market Trends and Transformation

Consolidation in China's distribution $market\ is\ happening,\ but\ it\ is\ a\ rather$ slow process, and given the sheer number of chemical distributors and the limited market share of even the biggest players, China's distribution market is bound to remain much more fragmented than Western markets in the foreseeable future. In particular, some global players which strongly rely on the serial acquisition of competitors outside China have mostly relied on organic growth within the country, though Brenntag, IMCD and Nexeo have made individual acquisitions that greatly advanced their standing in the country. These acquisitions have focused on the somewhat lower-end application segments such as plastics and coatings, in which local distributors are particularly strong as the vast majority of customers are local companies.

In contrast, foreign distributors have a strong standing in many segments which have more global customers and require more technical support, e.g., electronic chemicals, or in segments which are regarded as more sensitive with regard to EHSQ

aspects, such as food additives. The rapid growth of distributors such as IMCD and Azelis, which insist on applying their global standards throughout their operations in China and offer full transparency to their principals, shows that at least parts of the chemical distribution market are moving towards a Western level. In particular, this applies to those chemicals - mostly specialties - for which technical service and application know-how are important.

Another driver pushing both principals and customers towards Western distributors is the recent tightening of regulation after the Tianjin event. This has brought requirements which some of the local competitors cannot meet. However, chemical distribution is primarily a local business, with even foreign players relying on local staff for the vast majority of their activities. Due to regional differences, localization requirements go down to at least the provincial level or even lower.

In conclusion, chemical distribution has good growth perspectives in China now that in the wake of the economic slowdown the focus will also be on cost efficiency, not only on continued sales growth. Industry participants expect annual growth of the chemical distribution market in China to be about 1-2% higher than for the chemical industry as a whole. Assuming continued - though slower growth of China's economy and chemical industry, this is indeed an attractive prospect.

Dr. Kai Pflug, CEO, Management Consulting - Chemicals, Shanghai, China kai.pflug@mc-chemicals.com www.mc-chemicals.com

Management Change at Imperial Shanghai

Imperial Logistics International has owned a subsidiary in China since 2012 and operates its own warehouse in the Baoshan district of Shanghai. The original trigger for the move to China was a major customer in the Retail & Consumer Goods business unit, whose expansion in Asia the Duisburg, Germanybased company supported with logistics services. After having successfully worked in China for four years, Christian Berlin returns to the Imperial's headquarters to take on tasks as the assistant to the CEO. He is replaced as managing director of Shanghai Imperial International Freight Forwarding Co. by Jakob Hedén, who joins Imperial from DB Schenker where he held various management positions there during the past ten years.

IMCD Opens Office in Japan

IMCD has opened an office in Tokyo, Japan, marking the latest of a succession of steps that the Rotterdam-based specialty chemicals and food ingredients distributor has taken to build a stronghold in Asia-Pacific. Japan joins IMCD's expanding network of active countries within the Asia-Pacific region. Shunsaku Kubo has been appointed managing director IMCD Japan effective 1 April 2016. He brings 24 years of experience in senior managerial positions, having worked for some of the leading chemical companies. Gabriele Bonomi, executive committee member of IMCD, said the distributor intends to bring some of their existing suppliers to the Japanese market, utilizing their global market presence and product knowledge. (mr)



Innovation Matters

Distributors Define their Role as Innovator in the Global Chemical Value Chain

Globalization and digitalization and the increasing requirements of their customers and their principals pose a variety of challenges on chemical distributors. Constant innovation seems to be the only means to face these challenges. The European Association of Chemical Distributors, FECC, has chosen the theme "Inspiring Innovation in a Global Economy" for their Annual Congress 2016, to be held in Istanbul in early June. Innovation in chemical distribution — as in other sectors — can be manifold and include products and technologies, customer relationship and business models, staf-

fing or IT infrastructure. We wanted to know from spokespersons of leading chemical distribution companies what innovation means in and for their enterprise and what measures they take to inspire and implement innovative ideas. The answers may reflect different strategies, but one thing holds good for all: do not lose any time. Or as one of the interviewees put it: "innovation has to be done while you are healthy; once you really need to change it may be too late." Read here excerpts of what they have told us. You will find the complete statements online on http://bit.ly/distributors-opinions.



STATEMENTS

'Translating Market Needs into Innovative Formulations'

"At Azelis, our business philosophy is centered around technical services. Local and market-dedicated sales managers who combine technical expertise with business know-how drive our business. These experienced sales managers know every aspect of the different elements of the products and service portfolio Azelis represents and effectively trigger innovation as they can quickly leverage the knowledge gained through our own labs and maximize the synergistic effects of the building blocks of the lateral value chain. This key strength — translating market needs into innovative formulations — is further enhanced by the strong relationships we have with product development teams, regulatory affairs and buyers. This can open up many new applications for our principals' raw materials.

Knowledge-sharing is another important innovation at Azelis. Our sales and technical teams regularly organize seminars, workshops and training days in our application labs for customers, jointly with suppliers. Our specialists are constantly researching trends, identifying innovative new products and enabling our customers to anticipate market expectations."



Hans-Joachim Müller, CEO, Azelis

Market-Tailored Solutions for Megatrends

"Bodo Möller Chemie closely monitors megatrends and the demands thereby placed on various markets with regard to the development of viable future innovations. We attach the utmost importance to the application technologies and end products of each and every customer. We have longstanding partnerships in place with innovationfocused, technologydriven companies in particular in the automotive, aerospace and railway industries.

In addition to our mastery of process technologies, we possess a thorough understanding of endproduct requirements and the markets in which our customers operate. This allows us to incorporate our capabilities and experience into current developments in a targeted manner, which benefits our entire customer base. Due to our industryspecific certifications and our application technology services, including individual application testing in our laboratories, needsbased repackaging services, and customized product formulations in our Polymer System House business unit, we are in an ideal position to provide markettailored solutions accessible to our customers throughout the entire development stage — for competitive products and promising new processes."



Frank Haug, CEO, Bodo Möller

Vitality Requires Quick Thinking and Adaptation

"At Biesterfeld, innovation and continuous change are not only desirable, but also crucial for our long-term vitality. Whether it concerns adjusting our business model, undertaking regional expansion, or developing a range of customer-orientated solutions, being able to think and adapt quickly is becoming ever more important. We are constantly working to enhance our business processes and service offer and to increase the added value for our customers and distributors.

One illustrative example is to offer our customers an extensive product portfolio, while continuing to develop consultancy services in areas like laboratory support, product formulation and beyond. In the age of digitalization and Industry 4.0, the innovation activities of the future will be increasingly guided by technology. Even now, this is already having an impact on our investments. There are two essential topics in this regard: transparent processes when dealing with partners, and knowledge management.

Steady further development can only succeed in an innovative corporate culture where there is openness to change and an ability to adjust to the ever-greater pace."



Thomas Arnold,

Dedicated to Customers with an Ear on the Markets

"Innovation is an integral part of Brenntag's business model and a key growth driver. Particularly in mature markets, companies need to focus on innovation in order to stay profitable and competitive. Thanks to our well-trained and skilled sales and marketing team we have an ear on the markets and are able to react promptly to or even anticipate trends and developments.

Brenntag stands for a dedicated customer- and industry-focused approach. By offering value-added services, Brenntag is a product development partner for its customers, e.g., in specialty chemicals. We are supporting our customers' product introductions simultaneously, being part of the development process and providing application know-how, technical and marketing expertise. Our people enjoy developing tailor-made solutions and sharing success with our partners. Innovation at Brenntag means being and remaining flexible and future-oriented, responding to ever-changing market environments and requirements quickly and reliably."



Karsten Beckmann, member of the Board of Management of Brenntag Group and CEO Brenntag Europe, Middle East and Africa

STATEMENTS

From New Business Models to New Products

"Why innovate? Because it is the best choice to achieve a competitive advantage in a constantly changing environment. The challenge is to scout the relevant trends that affect your business and find the right answers. For CSC Jäklechemie, innovation means actually building the infrastructure to face the digitalization and the Industry 4.0 trend, which some call disruptive. At the same time, we introduce new business models to the market, such as chemical leasing, to manage the rising legislative pressure to control the supply chain. Finally we develop new products with added values to enable our customers to stay competitive. All this implies motivated teams with the ability to network and handle complexity."



Robert Späth, CEO.

Collaborating To Generate Profit

"To meet the needs of our customers and clients, DKSH operates 26 innovation centers worldwide. From these laboratories, we develop cutting-edge products and formulate winning solutions enabling our partners to innovate for growth. Our experts harness their deep industry expertise and innovation capabilities to generate, develop and customize product ideas, find new ingredients and technology applications, provide hands-on training and run acceptance tests to cut time-to-market for our business partners' products. We work in close collaboration with our business partners to learn and grow together, ultimately generating solutions that are profitable for all parties

Innovation is paramount to DKSH's success as a leading market expansion services provider in the chemical distribution industry.'

Our Services Are Our Product

"Innovation outside the product-innovations, offered by our suppliers and partners, has become increasingly important in the competitive landscape of the chemical distribution industry. As a chemical distributor it is important to understand the services performed as the product we offer to the market and to constantly find innovative ways to improve these. This mindset has helped us to develop innovative solutions for our partners that address the continued demand for reducing complexity and costs in the supply chain. Understanding the different value chains of the individual products and end-user markets is the key to success in service innovation as there is no one-size-fits-all solution in the chemical industry. This approach of concentration, customization and innovation has been the backbone of 140 years of success for C.H. Erbslöh, and today, more than ever, appears to be vital in staying competitive and finding the answers to tomorrow's challenges."



managing director, C.H. Erbslöh

Market-Focused Technical Experts

"Specialty chemicals are used in countless products that form an important part of our daily lives. The constant demand for product improvement and performance enhancement drives the requirement for innovative specialty chemicals. Innovation is therefore at the core of IMCD's activities. By partnering with leading suppliers, IMCD has access to a comprehensive range of innovative raw materials and firstclass products. Utilizing this portfolio, the company's market-focused technical experts proactively offer customers tailored and unique solutions to overcome their formulation challenges.

IMCD also operates 26 laboratories across EMEA, Asia-Pacific and the Americas. These laboratories allow us to analyze and engage with the very latest market trends, working in close collaboration with its customers' research and development departments to carry out competitive matching, share new application opportunities and assist them in formulating the most effective, innovative and sustainable products for the demanding markets in which they operate."



managing director

Staying Close And Flexible

"The European chemical industry has shown a very high innovative capacity for many generations. Generally, innovations are existentially important for distributors in order to circumvent the competitors in a rapidly growing competitive environment. Innovation is the key toward growth as well as higher profitability.

As a globally acting company, Klaus F. Meyer tries to provide its customers with innovative and sustainable raw materials. Continuous presence at the customers as well as presence at international trade fairs helps us to detect market trends at an early stage and to react very flexibly on these market trends.

As distributor we always keep close contact to our customers within the scope of customer relationship to participate in developments in an early stage. Here we do not only act as a trading company but also as an agent between our customer and the manufacturer. In this triplet we see the best way to offer our customers innovative and sustainable products."



Klaus F. Mever



STATEMENTS

Embrace New Technologies

Harke Group has taken a step forward with its integrated sales strategy. Not only offering competitive raw materials, but also matching, innovative packaging for solid and liquid applications, brought together at our in-house packaging facility, Harke PackServ. As part of our product range, we are representing specialty films from our partners Aicello and Ikonics. As a first step to promote the sales of films, we have started selling production equipment, i.e., for sandblasting. As a second step, we have worked on increasing customer competence and thereby increasing demand/sales, offering training sessions in our Harke Imaging academy. Today, Harke PackServ is offering far more than films but instead complete systems including machinery, devices, seminars and also contract packing and production services.



Claus H. Nielutz, managing director, Harke PackServ

This innovative customer approach, as part of an evolutionary process, proved to be very successful. We have been able to generate new business with premium industrial customers and high-end design companies. Using social media as a multiplication platform has created an additional sales channel — free of charge. To sum it up: It was important to embrace new technologies and adapt to changing customer behavior."

Advantages of a Diverse Network

"Penta, as the biggest cooperation in chemical trade, defines itself particularly as a service provider for its shareholders, customers and suppliers. This company, unique for Europe, depends very much on the confidence of our partners. Changes and renewals require a sensitive handling. Due to our diverse network with very different market players and the relevant training of our employees we are able to identify opportunities arising on the market. From this follows the early initiation of innovations, preferably together with our colleagues from our shareholding companies. It is important to us to involve the people in all changes and convince them of the advantages. Only in the common dialogue a realization can be successful."



Dr. Bernd Soyke, managing director,

Experience Accumulated Across the Globe

"Helm has always proceeded along paths of its own during its 115-year corporate history. To us it was important from the outset to focus as closely as possible on the needs of our suppliers and customers. For instance, Helm already established its first sales offices abroad in the 1960s; that certainly was innovative at a time when the term globalization had not even been coined.

Our IT solutions today ensure that the experience accumulated across the globe by our staff members can also be shared across the globe with our colleagues; in other words, the information flow proceeds in all directions and back again. Two of our business units, namely crop protection and pharma, have basically been designed and created to be innovative: scientists, project and product managers work hand in hand in both business units in order to develop innovative products and individualized business models. In our fertilizer and

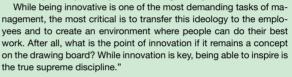


Hans-Christian Sievers, chairman, Helm

chemicals business units, we score in particular thanks to logistics solutions and marketing concepts that did not have their origins in a test tube."

To Inspire is the True Supreme Discipline

"To the future of our company!" were the words I chose while toasting our Hamburg team on Jan. 5, 2015. It marked the start of our company's new distribution structure. The move toward a matrix organization was central to our further European expansion and collaboration. Now we aim to redefine our digital landscape and to continuously develop our application know-how. We were doing well beforehand, but we think we could always be doing better. That is indeed one of the most challenging aspects of innovation — it has to be done while you are healthy; once you really need to change it may be too late.





Oliver Zimmermann, CEO, TER Chemicals Distribution Group

Dr. Birgit Megges and Dr. Michael Reubold, CHEManager

Safic-Alcan Acquires 100% of Interplast

France-based international distributor Safic-Alcan has completed the acquisition of 100% of Turkish distributor Interplast after acquiring a majority shareholding in 2011. Founded in 2004, the Turkish distributor, which has annual sales of $\ensuremath{\in} 21$ million, "has developed an outstanding reputation in the distribution of technically superior quality of thermoplastics, rubber, coatings, adhesives, cosmetics, personal care and pharmaceuticals," Safic-Alcan said. "We are still exploring other acquisitions to strengthen our competitive advantage not only in Turkey but also in the neighboring areas such as the Balkans, the Middle East, the Caucasus, Central Asia and North Africa," said Martial Lecat, CEO of Safinca, the holding company of Safic-Alcan Group. (dw, mr)

Azelis Inks Deals to Expand Supplier Portfolio

Azelis recently inked a couple of deals to represent international chemicals manufacturers in several regional markets. For Philadelphia, Pennslyvania-based Chemtura Corporation Azelis will be its sole distributor for its pre-polymer urethanes, curatives and polyester polyols product lines in North America, effective July 26, 2016. On this date, Chemtura will be discontinuing its relationship with AdipreneDirect in North America and be expanding its relationship with Azelis Americas in addition to the current urethanes surface coatings portfolio.

Tokyo, Japan-based chemical producer Showa Denko KK (SDK) has selected Azelis to market SDK's cosmetic raw materials in Europe, effective from April 1, 2016. The exclusive distributorship agreement enables Azelis to market SDK's vitamin derivatives, a slimming agent, and hair care products in Europe.

Azelis has also signed a distribution agreement with Robinson Brothers, a UK manufacturer of specialty organic chemicals. Effective from January 1, 2016, Azelis represents Robinson Brothers in Germany for the distribution of the Robac technology, which consists of a range of specialty products for rubber vulcanization. The agreement builds on already successful partnerships bet-

ween the two companies in France, Benelux and Turkey. Also effective January 1, 2016, Gattefossé, a privately-owned French company, has appointed Azelis as their new distributor for Personal Care in Turkey. Azelis has a longstanding relationship with Gattefossé for both Personal Care and Pharmaceuticals, supported by joint formulation and development work. Thanks to this partnership, the mandate has now been extended from Russia, Poland, CEE and Balkans, to include Turkey for Personal Care. (mr)

DKSH in Distribution Deal with Hampford Research

Switzerland's DKSH has signed an exclusive agreement with US specialty chemicals manufacturer Hampford Research Inc. (HRI). Under the agreement, DKSH will supply, market and distribute HRI's photoactive technology products in Europe, North America and Asia. The deal includes HRI's entire line of ultraviolet/electron beam (UV/EB) products, including photo acid generators, photo initiators, monomers and co-initiators, as well as any future products created from customer-related product development. HRI specializes in producing high-purity chemicals used in the electronics, dental, personal care, printing and imaging, and adhesives industries. (eb, mr)

Covestro Picks IMCD to Oust Univar in France

Covestro reached an agreement with IMCD France on the distribution of coatings and adhesives raw materials in France, expanding the current cooperation beyond the raw materials Covestro offers to the textile industry. From May 1, 2016, IMCD holds inventory and distributes the materials to the French coatings and adhesives industry. Effective April 30, Covestro has ceased its cooperation with the previous sales partner Univer France. (mr)

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Complexity Defines Past and Future

Experts Discuss Trends in Chemical and Pharmaceutical Logistics



About 10 years ago, CHEManager decided to present discussions about logistics as a separate theme. Since then, the terms "chemical logistics" and "pharmaceutical logistics" have become established in business and science and with trade associations. CHEManager has interviewed experts in the chemical logistics chain about the decisive developments in this special area of logistics over the past 10 years. Specialists in pharmaceutical logistics also provided information about major changes in the last decade. Both logistics groups made statements about future developments in these nationally and internationally important business sectors.

One of the most important insights related to logistics processes in the chemical industry is their growing complexity. Almost all of the respondents — people and experts involved in the supply chain - pointed out the increased complexity of chemical logistics resulting from greater globalization of business, as well as an increase in regulatory requirements.

Security Through Greater Control

This increased control arises from an increased demand by carriers for greater security and quality, whereby the focus is on customers in the chemical industry. The majority of those involved in the market consider that the future of chemical logistics will be dominated by intelligent systems and



"Differentiated customer requirements demand smaller deliveries at higher frequencies."

Andreas Gmür, Camelot Management Consultants

a general increase in digitalization in the sense of Industry 4.0.

For Dr. Andreas Backhaus, senior vice president European site logistics operations, BASF Group, these new business models will soon become reality for the logistics sector.

"Interlinking production planning,

will lead to further changes in the field of logistics and open up new business models," Backhaus said. The local service provider Infraserv Logistics considers networking an important industry achievement of recent years.

As Infraserv's Jochen Schmidt said: "The dynamics and complexity



"EU Guideline on Good Distribution Practice triggered a veritable GDP wave in pharmaceutical logistics."

Peter Norheimer, Frigo Trans



"The attitude toward outsourcing of logistics has changed because of an increasing complexity."

Michael Kriegel, Dachser Chem-Logistics

production and transport planning creates close connections and optimization of processes, with positive effects on flexibility, stocks and costs. With the use of advanced technologies such as driverless transport systems, or data glasses, which provide a realtime overview of warehouse stocks, we take advantage of the potentials that these technologies offer. Digitalization

in the global value chain have increased significantly; also sensitivity to the associated risks and sustainability aspects has grown. We now provide our customers with modern IT platforms that can manage handling processes in a highly efficient and transparent manner. Ten years ago, this high level of networking and automation would have been inconceivable."

Increasing Complexity in Chemical Logistics

"Over the past years, there has been an extreme increase in the level of complexity of chemical logistics. Ever-increasing transport volumes are faced with limited capacities and services, is confirmed by Michael Kriegel, department head at Dachser Chem-Logistics: "The attitude toward outsourcing of logistics has changed. The reason for this is complexity. Global locations lead to a large number of new interfaces; customers order eversmaller quantities at shorter intervals,



"Dynamics and complexity in the global value chain have increased significantly."

Jochen Schmidt, Infraserv Logistics

strategic than it was 10 years ago,"

said Manfred Fischer, vice president

global distribution chemicals, Merck.

However, those involved in the supply

chain are also worried. Logistics ser-

Price Reductions and

Decaying Infrastructure



"A much closer cooperation between carriers, service providers and customers is required."

Manfred Fischer, Merck

availabilities in terms of transport and infrastructures. More differentiated customer requirements demand smaller deliveries at higher frequencies," said Andreas Gmür, partner and head of logistics practice for Camelot Management Consultants.

and the requirements for safety, quality and protection of the environment are increasing. Only large logistics suppliers who provide complete integrated value chains can offer the necessary transparency and control. This is the case not only in Germany or Eu-



"Reliable delivery of products will become an important factor for

competitiveness and success." Gerd Deimel, VCI Traffic Infrastructure Initiative



"Digitalization will lead to further changes in the field of logistics and open up new business models."

Dr. Andreas Backhaus, BASF Group

The tendency observed in commerce for smaller deliveries with greater frequency contributes to this mounting complexity, as does the growing number of supply-chain players with its accompanying increase in new interfaces. This pattern, which has also been noted by providers of logistics

rope but throughout the world."

Above all on the part of carriers, this gives rise to a demand for greater transparency, standardization, and control over the supply chain in the sense of tracking and tracing and other IT-based steering and control mechanisms.

carriers, service providers and customers. Because of this, the cooperation between carriers and service providers is now much more intensive and

"The requirements of customers in

the chemical industry have increased

considerably. More and more custo-

mers demand notification of ship-

ments and on-time deliveries within

narrow time windows. This must be

accompanied by tracking and tracing

solutions, which actively inform customers of any delays. This requires

much closer cooperation between

vice providers in particular are concerned about further declines in profit margins for transport, as well as increasing cost pressure. In general,



"Transportation regulations on practices such as temperature control and monitoring drive up costs."

Professor Wolfgang Stölzle, St. Gallen University/Switzerland



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Logistics 1

they complain about heavy usage of the traffic infrastructure and the decav of this infrastructure.

"Reliable delivery of products will become an increasingly important faccare supply chains. It presents a huge opportunity for the health-care sector to develop an integrated system where health-care professionals and patients, manufacturers, world-class practiced quality standards by service providers in the supply chain, from temperature-controlled transport all the way to the central warehouse with attached production." Strobl said.

"Increase in outpatient care will have an effect on health-care supply chains."

Jan Denecker, UPS Europe

tor for competitiveness and success. Order cycles are becoming shorter. Unfortunately, the ailing infrastructure in Germany is compromising this reliability. Our overseas customers often cannot understand that logistics companies here in Germany have to struggle with such challenges," said Gerd Deimel, spokesman for the VCI traffic infrastructure initiative.

The underlying message of many of the statements is that present and future challenges in chemical logis-

technology companies and healthcare experts in the supply chain work hand-in-hand to foster greater efficiency and better patient outcomes," said Jan Denecker, marketing director health care for UPS Europe.

Because of increasing individualization of medication, as well as growing demand for medicines in emerging markets, the postponement approach will become increasingly important for service providers.

Johann Strobl, manager of sales



"Complexity continues to increase, as evidenced by requirements for tracking cooling chains and serial numbers"

Dr. Christof Peter, SSI Schäfer

tics can be mastered through better networking and closer, long-term cooperation between carriers, service providers and customers.

Alfred Talke, group managing director of the Talke Group, said: "To maximize unused efficiency potentials in the future, we will need long-term cooperation that takes the constraints and success factors of chemical logistics more strongly into account."

The Future: Smaller Batches and Individualization

Individualization of therapies and medication requires greater segmentation into supply chains specific to products and customer groups — and smaller batches; these factors will also have a greater effect on pharmaceutical logistics in the future.

"It is expected that oncological, diabetes and anti-rheumatic medications will be the sectors demonstrating the most rapid growth. We have also observed an increase in outpatient care, which will have an effect on health-

and marketing for Loxxess Pharma, sees the future of pharmaceutical logistics as strongly associated with innovation on the part of logistics service providers.

"With the growth of the postponement approach — the transfer of market-oriented final packaging production to the latest possible stage in the value creation chain — the production GMP and approval for sale will become a part of the logistics process. In the future, the benchmarks for pharmaceutical logistics will be innovative strength and



"Benchmark for pharmaceutical logistics will be innovative strength and

> practiced quality standards." Johann Strobl, Loxxess Pharma

Good Distribution ganization Practice and the EU GDP Guideline 2013 have had a great influence on pharmaceutical logistics processes in recent years. All in all, this has resulted in improved quality and com-

tics Group: "The greater focus on logistics services must be seen against the background of the reform of the GDP — Good Distribution Practice. Here in particular, transportation regulations on practices such as temperature control and monitoring, e.g., in the form of geofencing and storage conditions, have become more stringent. This is driving



Regulations Dominate Pharmaceutical Logistics

There has also been a strong increase in the complexity of pharmaceutical logistics.

pliance, especially in distribution. 'There has almost been a hype due to the high level of awareness of the EU GDP Guideline beyond the field of pharmaceuticals. Logistic service providers saw their salvation in handling pharmaceutical orders. Those involved only gradually became aware that 'doing pharmaceuticals' is associated with the necessity for long-term changes in processes and investments, long before the first pharmaceutical contract is on the order books," said



"Long-term cooperation that takes the constraints and success factors of chemical logistics more strongly into account is needed" Alfred Talke, Talke Group

Dr. Christof Peter, senior process Dr. Nicola Spiggelkötter of Knowledge & Support.

expert BSM pharma at SSI Schäfer in Graz, Austria, said: "Facts have shown that the pharmaceutical logistics chain is much more complex than it was just 10 years ago. The complexity continues to increase, as evidenced by requirements for tracking cooling chains and serial numbers, as well as the demand for same-day delivery to customers."

It is also apparent that revision and reforms of the World Health Or-

The introduction of new control mechanisms has also resulted in greater transparency in the supply chain. Traceability over the entire supply chain and active temperature control are the decisive concepts here.

These developments are also pointed out by Professor Wolfgang Stölzle of St. Gallen University in Switzerland and Peter-Johannes Barth, manager of the Barth Logis-

Greater Control Implies Higher Costs

up costs even more."

In addition to increased regulatory requirements and the associated controls and increased costs, globalization also plays a significant role in the changes experienced by the market. Logistics are increasingly becoming the link between global production associations and emerging markets.

Dr. Martin Egger, head of Pharmaserv Logistics: "While traditional markets in Western Europe are characterized by stagnation, on a global level the almost explosive growth of emerging markets has forced changes in pharmaceutical logistics. On one hand it is necessary to move increasing quantities in these countries, while on the other hand, distribution structures are developing toward smaller batches.

In the opinion of the insiders who were interviewed, the industry has piration of patents, increased use of specialized service providers will play an important role

Those involved in the pharmaceutical logistics chain consider handling of increasingly temperature-controlled transports in different temperature ranges and increased security in the supply chain as two of the most important topics at present and in the years to come. "Publication of the EU Guideline on Good Distribution Practice in 2013 triggered a veritable GDP wave in the pharmaceutical logistics sector. This is a new playing field. Suddenly, the specifications apply to all temperature ranges, i.e., from +15°C to +25°C as well. These are intended to ensure

nies with major challenges," said Peter Norheimer, managing director of Frigo Trans.

gard to both quality and transparency. On the other hand, to cater for these increased requirements, logistics com-



"Doing pharmaceuticals - is associated with the necessity for long-term changes in processes and investments."

Dr. Nicola Spiggelkötter, Knowledge & Support

Summary

In recent years, business models for the chemical and pharmaceutical industries have increasingly diverged. This is reflected in the requirements for individual services in chemical logistics and pharmaceutical logistics, which have drifted apart in various aspects. Economic pressure and organizational changes in companies resulted in the outsourcing of services such as logistics.

However, it has recently become apparent that external services are having a deeper effect on company processes, which applies in equal measure to the pharmaceutical and chemical industries. This is associated with increasingly stringent requirements for service providers — with repanies have developed further and have become even more specialized.

For both sides — carriers and logistics companies — in both the chemical and pharmaceutical industries, it is necessary to face up to rising regulatory requirements, growing global production chains and soaring technical challenges, and to satisfy increasingly demanding customers. Now and in the future, this will be possible only through common approaches, partnerships, trust and fair play on both sides.

Dr. Sonja Andres, CHEManager

www.chemanager-online.com/themen/

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"The almost explosive growth of emerging markets has forced changes in pharmaceutical logistics." Dr. Martin Egger, Pharmaserv Logistics

recognized the strategic relevance of logistics. Closer cooperation between carriers and logistics companies is essential. To counteract increasing cost pressure, which is also due to exthat the integrity of pharmaceutical products is guaranteed along the entire supply chain. The more stringent requirements have presented both manufacturers and logistics compa-

Trends in Health-Care Logistics

With the publication of the delegated act on safety features, those who manufacture, sell or dispense medications in the European Union have until February 2019 to comply with new track and trace regulations outlined in the Falsified Medicines Directive.

At this point, specialized thirdparty logistics (3PL) companies seem an ideal solution for successful supply-chain management. It is a big advantage for pharmaceutical companies to be able to deal with the situation without making huge investments and without undertaking complex management of operational pro-

Consolidating warehouses, secondary packaging and distribution operations with a specialized logistics solution partner offers a big advantage of managing the whole supply chain from a single point of contact. Com-



Ahmet Dörtyön, Ekol

plexity reduction, optimization and efficiency will always be at the top of the priority list of supply-chain managers. Real-time operational performance monitoring and customer complaints management with proactive and impulse solution approach will be effective in operations and customer satisfaction.

Warehouse and distribution operations should be strong and flexible

enough to absorb fast rises and falls in sales. Demand-driven inventory planning is still an ideal standard, but there are other methods to restrain cost pressure. The activity-based business model lets companies pay for the service they use, which I believe is the simple and fair partnership model.

Providing product security and regulatory compliance will always be the most important topic in healthcare logistics. From raw material to quality assurance, full transparency will be the essential feature of logistics partners.

The overall trend in logistics for the pharmaceutical sector is that customers need comprehensive solutions, and we are aware of that at Ekol. We provide local health-care solutions on a global scale. Our pharmaceutical customers can be divided

into manufacturing inputs, pharmaceutical products and vaccines, consumer health-care products, animal health products and vaccines, medical technology products, and vision care products. Companies from these branches belong to the healthcare sector, but of course their logistics needs are diversified. They expect their logistics partner to have experience and know-how from their speci-

Due to the demand, we have rapidly started operations not only in Turkey but in Ukraine and Hungary as well. We are planning to extend our coverage area to Europe and Iran in the near future.

Ahmet Dörtyön, health-care business unit manager, Ekol, Turkey

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Excellent Logistics for Excellent Products

How Digitalization is Changing Supply Chains in Health Care

Health care sets high requirements for logistics service providers. Particularly pharmaceuticals have high product values and strict legal regulations, which must be fulfilled during logistics performance. An unbroken cold chain and demonstrable compliance with qualitative standards are essential criteria in logistics of health-care products. With the increasing complexity of supply chains, safety risks of the products also rise in transport, storage and handling. This builds pressure on logistics service providers to meet customers' current and future requirements.

Pursuant to official statistics, the value of production, imports and exports of health-care products continuously increased in Germany from 2009 to 2013. As the health-care industry is hardly influenced by the economy but closely connected to demographics and an aging population, a further positive effect on production and foreign trade of health-care products is expected.



Viola Roschdi. Fraunhofer SCS

Martin **Schwemmer** Fraunhofer SCS

Together with rising outsourcing by manufacturers, the importance of logistics service providers along the health-care supply chain will further grow. For that reason logistics service

providers have to be prepared for challenges and adapt their service portfolio to specific needs of their customers.

A study of Fraunhofer SCS among 18 participants from logistics service providers and pharmaceutical wholesalers examines the current status of logistics service providers in health care and how their operations will change to meet future challenges.

Transportation

The dominating mode of goods transportation in the health-care industry is by road. This mode will gain importance, the experts said. Especially in the pharmaceutical sector, the road is attractive, as the transport of pharmaceuticals is characterized by small product packages of high value. Additionally, the road is the only sensible approach to supply private customers

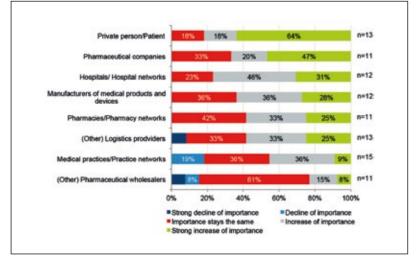


Fig. 1: Which of the mentioned facilities will gain in/lose importance as a customer or recipient in future?

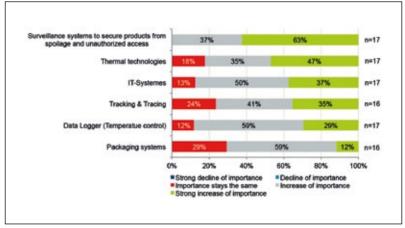


Fig. 2: In which areas will technical innovations in transportation/storage/handling of pharmaceutical and medical products gain in/lose importance in future?

and patients with medicines on the last mile, which is by far the most expensive part of distribution.

Airfreight also will gain importance, as it represents a reliable mode of transport for long distances and for sensible goods. The growing middle class of emerging economies increases its demand for pharmaceutical and medical products, which further strengthens the importance of airfreight. In addition, the survey shows that almost half of the logistics service providers use means of transport that are only partly customized to the requirements of health-care products. This means that a large part of the surveyed logistics service providers is not specialized enough to meet more individual needs of customers of the health-care industry.

Statistics show the significance of pharmaceutical products in Germany, as they represent more than half of the value of manufactured healthcare products. Logistics service providers with their field of activity in the health-care sector offer their service range especially for pharmaceutical products. For more than 80% of the surveyed service providers, pharmaceuticals are part of the transported, stored and handled product portfolio. Therefore it is not surprising that pharmaceutical companies represent the most important customers and goods recipients of logistics service providers in the health-care industry.

E-Commerce Pushes Importance of Private Recipients

Logistics outsourcing is growing in the health-care industry. The surveyed experts expect a still (strong) rising importance of pharmaceutical companies (67%) as demanders of logistics services in the health-care in-

Currently, private persons play a rather insignificant role, since they don't appear as customers of any surveyed logistics service providers and are goods recipients for few logistics service providers. Nevertheless, in the future over 80% of the sample attribute a strong or very strong increase of importance of private persons/patients as customers and goods recipients. This development is particularly pushed by e-commerce and the growing use of mail-order pharmacies, which brings the supply of private persons with medical products into focus for logistics service providers.

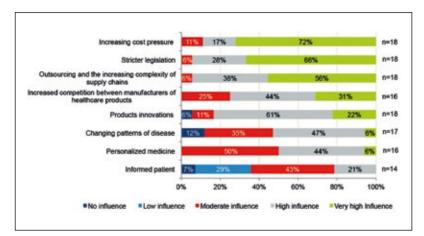


Fig. 3: How strongly do the changes in the area of pharmaceutical and medical products influence the work of logistics service providers?

Furthermore, the "digitalization" trend will be significant for the health-care supply chain. Digitalization supports medicine supply via telepharmacy. In combination with a pickup function for pharmaceuticals, telepharmaceutical services represent a particularly close competitor to general pharmacies and pharmaceutical wholesalers in the long term.

Effects Of Self-Medication on the Supply Chain

Furthermore, investigation on future issues in the medical and pharmaceutical sector shows that changes of the legal framework and entrepreneurial and business changes have decisive effects on the work of logistics service providers.

Changes as a consequence of medical progress are perceived as less concerning. Therefore changing disease patterns and personalized health care are being ascribed as comparatively less important.

Additionally, increasingly well-informed patients represent only a small challenge in the next 10 years. This is quite surprising as digitalization is triggering the trend of more people tracking their health and bodily functions with the consequence of being better informed about their health status. This development might push the booming self-medication trend and could lead to a growing demand of over-the-counter (OTC) medicines and to increasing use of mailorder pharmacies.

Once more, private persons and patients can be recognized as important actors within the health-care supply chain. Nevertheless, the future influence of changes in the course of medical progress is currently not recognized by the surveyed logistics service providers.

Technological Innovations for Safety Improvements

Logistics service providers cannot do business without communication or monitoring technology. As healthcare products are particularly sensitive goods, the use of technologies is an essential monitoring tool for product quality.

Tracking and tracing systems are used by over 80% of the surveyed logistics service providers. Surveillance systems to secure products from spoilage and unauthorized access are comparably less available. However, in the future the surveyed logistics experts expect a strong increase in the importance of new technological innovations in this field (63%).

Tamper-proofed packaging represents a good solution to improve the safety of pharmaceutical products and to fight the booming trade in counterfeit medicines. Nevertheless, innovative packaging systems are currently used by just over half of the participants. Therefore it is surprising that the logistics service providers expect a comparatively small growth in the importance of such sys-

For the majority of the surveyed logistics service providers, health care is an important business area. According to the respondents, the importance of health care will increase in the next 10 years and become an even more important business sector for them. An aging population will demand even more health-care products and services.

Not surprisingly, logistics service providers that already generate more than 50% of their turnover in the field of health care assess the health-care segment as very important for their companies' business now and in the future. Even logistics service providers that are not focused on health-

care logistics and assess the importance of health care as neutral for their companies predict a high importance of health-care logistics for their futures.

Specialized Logistics Service Providers

The market for health-care products offers excellent long-term growth prospects. This strengthens the need for specialized logistics service providers. Especially with larger sales volumes and the increasing complexity of supply chains, ensuring the safety and integrity of every single product is getting more challenging. Furthermore, because of trends like digitalization and e-commerce that become more and more perceptible, manufacturers of the health-care industry pursue a multichannel distribution strategy that leads to changing supply chains.

Private persons and patients come into focus as customers become goods recipients of logistics service providers. This means that courier, express and parcel services have to be prepared for small product packages of high value with special needs like cooling or compliance with hygienic standards. Together with strict legal specifications and monitoring technologies, health-care products must meet high requirements in their transportation, storage and handling when compared with other products.

To set themselves apart, logistics service providers can pursue different strategies, for example, the use of innovative technologies, the optimization of processes or the expansion of services. Logistics service providers already use some of these strategies but must implement them more consistently in the near future.

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Improving Efficiencies

Using a B2B Network Can Help Chemical Companies Get a Better Grip of their Supply Chains

A 2015 Accenture study showed that 94% of chemical companies expect to boost their investment in digital capabilities in the next three years to embrace a competitive advantage.

Adding digital functionality will increase customer satisfaction, streamline operations and improve efficiencies. Businesses are demanding the features found in most business-toconsumer (B2C) technologies, which allows them to easily search for products, compare features, shop for bargains, watch product demonstrations, track shipments and manage returns. With digital business-tobusiness (B2B) enhancements, chemical companies can find prospective customers, research new suppliers, alert buyers to shipping delays and foster deeper trading partner relationships.

Many chemical manufacturers have invested heavily in process automation and standardization, to drive savings, improve efficiencies and control internal operations. Some chemical companies still have significant opportunities for additional efficiency gains, which can come from using a B2B network to facilitate the buying and selling of products and services. Others add traditional licensed software or add-ons to the existing enterprise resource planning (ERP) to improve efficiencies, but when these solutions meet the outside world, they stumble for a number of reasons.

First, numerous transactions between companies, such as orders, invoices, shipping notices and status updates remain paper-, fax- and phone-based. Second, even though internal integration can be achieved through executive command, external supply-chain partners — customers, suppliers and service providers - have their own way of doing business and won't change their processes. Third, changes required in the ERP system usually require resources that are already backlogged with unfulfilled requests.





Ed Rusch, Elemica

The reality is that chemical manufacturers can't expect all their customers, suppliers and logistics providers to collectively adopt a single process. Instead, chemical companies and their trading partners want to conduct business in a network environment that allows easy connectivity without having to change the way they work. These types of B2B networks are called supply-chain operating networks, and they are real game changers, helping businesses to transform and connect through endto-end visibility and an ability to scale across an infinite number of partners in an evolving marketplace.

A supply-chain operating network facilitates the exchange of documents and information, such as invoices, advanced shipping notices and status updates, while participants execute specific activities, such as tracking the location of shipments, confirming receipt of purchase orders, etc. This networkwide visibility, along with business intelligence and analytics capabilities, creates an interenterprise system of record that enables faster and smarter business decisi-

Full Real-Time Visibility Accelerates Processes

B2B networks have evolved over the years from simple one-to-one connections to one-to-many connections. Historically, chemical companies buy from and sell to nearly every industry in the world, adding special demands for connectivity. Electronic data interchange (EDI) is historically a one-toone exchange of information where companies focus on delivering data

with a trading partner. Supply-chain operating networks offer a level of sophistication missing in EDI and typical B2B networks. The network is an ecosystem where once data is exchanged all parties can see data in real time, modify process behaviors and collaborate with each other.

Supply-chain networks are growing significantly as businesses realize substantial benefits through their collective participation, enabling companies to more efficiently and effectively conduct business with each other. A network thrives when key pieces of commerce come together, so that the strengthened interactions across companies deliver prosperity and economic growth for the benefit of all participants.

B2B networks give customers full visibility into their extended global supply chains through integrated messaging, applications and analytics across their trading partners. Once connected, trading partners gain the ability to coordinate, communicate, and conduct commerce with each other in more automated and significantly scalable ways. Distributing business processes and sharing critical information helps companies differentiate themselves in the market. mitigate risk, accelerate their productivity and create meaningful cost savings.

Easier Communication And Collaboration

The network fosters better collaboration and communication through the exchange of meaningful data. Incorporating elements from social media, partners can interact, share interesting trends, broadcast and like posts through the network. Just one single person can create massive change by sharing crucial information that can affect internal and external partners.

Companies can collaborate on a much larger scale vs. traditional methods of email, fax or phone. Capitalizing on the network effect, the more partners connected, the larger the network, the more value the network gives to all trading partners that are attached.

As business networks grow, just like with social networks, the value to participants explodes. The more opportunities a company has to conduct commerce with others - whether it is searching for new suppliers or prospective customers or trying to find a new carrier to ship a load the greater the return.

There is a tremendous amount of data flowing between buyers, sellers and logistics providers that can be captured and utilized to deliver more informed decisions. The wealth of data captured from raw material procurement through distribution to the end customer creates a comprehensive, holistic view of how a supply

chain is performing. It feeds analytics and fosters collaboration and insights for continuous improvement and high operational efficiency.

With the collective power of a supply-chain operating network and its big data analytics, companies can be proactive and generate additional revenues, such as having the ability to unload inventory to another business on the network that is out of stock of the same products.

Better Understanding of the **Whole Supply Chain**

For chemical companies buying and selling around the globe, it is important to utilize robust technology that automates processes across procurement, order fulfillment and logistics, capturing data along the way, and analyzing trends and information

across product, demand and supply networks. A chemical company will using a network that strengthens interactions across companies to deliver prosperity and economic growth for all participants.

Supply-chain operating networks are real game changers. Business is transformed when visibility across the entire supply chain is realized, helping a company to better understand where and when to source their raw materials, where to store their inventories, how to navigate delays in shipments, and how to optimally scale production to meet real market demand.

Ed Rusch, vice president, corporate marketing, Elemica, Philadelphia, USA

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Escaping The Complexity Trap

Camelot's Survey Reveals Differentiated Supply Chains as a Solution

The good old days are gone — at least with regard to simplicity in business life. This is particularly true for life sciences companies affected by trends increasing the complexity of their business, especially in the supply-chain area. Despite an optimistic view of the current and future business climate, most industry players seem to be aware of this complexity and of the need to respond to it. Many executives share the opinion that differentiated supply chains may be a suitable solution to this challenge. They are at strife, however, with regard to which differentiation strategies in which areas should be the focus.

This is the picture that emerges from the seventh Camelot Management Consultants Pharma Management Radar Survey, a biannual survey that examines the climate in the life sciences industry and takes an in-depth look at a varying current management topic. In January and February, more than 40 executives from globally active pharmaceutical companies based in 13 countries and spread over several continents participated in the online survey.

Companies with a business model predominantly characterized by developing and/or commercializing innovative medicines ("Innovators") composed around 70% of respondents; roughly one-third were participants from companies predominantly active

"Stronger differentiation in specific supply chains is the prerequisite for logistics to evolve into a value-creating revenue driver."

Andreas Gmür, Camelot Management Consultants

in the generics segment ("Generics"). Survey participants include the representatives of 70% of the top global pharmaceutical companies including all top five firms. The focus topic of the seventh Pharma Management Radar is differentiated supply chains.

Business Outlook on Record High

Having improved further since the Pharma Management Radar Survey



Andreas Gmür, Camelot Management Consultants



Peter Holland, Camelot Management Consultants

six months ago, the executives' view of the business climate for the pharmaceutical industry is on a new record level. More than 92% of participants rate the situation "mostly good" or "good" (February 2015: 90%). This particularly applies to the Generics executives, all of whom have a positive impression of the business climate, whereas 12% of Innovators consider the current business climate "mostly bad". These mood differences are also reflected in the outlook on the economic developments during the next 12 months: The share of Generics expecting the business climate to remain just as good in the next 12 months is higher than the share of optimistic Innovators (79% vs. 64%).

Biotech Drives Growth Expectations in Established Markets

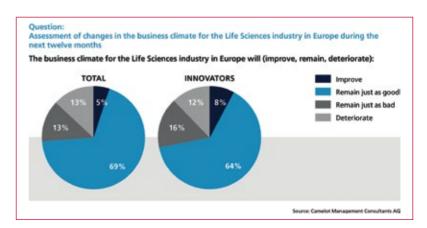
Respondents are even more optimistic with regard to their own business development, confirming the bullish mood expressed in the survey six



months ago. More than 90% expect their sales performance to improve while more than three-quarters are confident of being able to raise earnings before interest and tax (EBIT) in 2016. With regard to the regions driving this growth, North America performs very strongly with 68% of respondents having positive demand expectations — a trend that started in the last survey. Growth expectations attributed to various other established markets hint at the very positive development of biotech products. Concerning China, fears of a general economic slowdown are reflected in the fact that expectations are still mostly positive but have declined from half a year ago. Russia, too, is looked at with increasing pessimism.

Investments Focus on China, North America and Germany

Many of the life sciences industry's regional investment plans for the next 12 months reflect these expectations. China, North America and Germany stand out as particularly strong markets. For China, where investment plans are very widespread among Innovators, the development is not surprising, as this market is expected to continue its growth in the next years. India and some other emerging markets, on the other hand, are more attractive for the Generics as a target of investment. As one may expect, the will to invest and the general economic optimism are accompanied by growing employment figures. While



one year ago nearly half of all respondents had expressed plans to reduce the number of employees, today more than 70% of respondents expect to keep their employment figures constant or even increase staff during the next year. At the same time, however, cost awareness leads to a stable volume of external sourcing. Not surprisingly, external sourcing plays a considerably higher role for Innovators (94% vs. 55%) for whom cost pressure is a particularly relevant topic.

Patent Expiry No Longer Seen as Major Risk

As far as the greatest risks for the companies' business development during the next 12 months are concerned, patent expiry, which was considered a major risk in 2015, has fallen back massively (27% vs. 48%). It seems that R&D progress is stronger than previously expected and that industry players are confident that new biotech developments may compensate for expired patents. Instead, cost pressure (63%), increased challenges in the regulatory environment (47%) and political risks in growth markets (33%) are now named as the most relevant risks by representatives of the Innovators and Generics segments.

Considering these results it is not surprising that more than three in four respondents again name cost-related measures as the most important industry trend. Efforts to secure supply reliability and the concentration on emerging markets, too, are considered important trends.

Rising Relevance of **Mergers and Acquisitions**

In the life sciences industry, the trend for mergers and acquisitions — which reached a peak in 2015 — is expected to continue in 2016. Shire has announced the \$6.6 billion acquisition of Dyax. And Generics producer Teva is working on the \$2.3 billion takeover of Representaciones e Investigaciones Médicas (Rimsa), to name just two examples of upcoming deals. According to two-thirds of respondents, the number of M&A deals will even increase this year. Corporate growth clearly stands out as the main motivation for current and future M&A activity. For Innovators, access to specific products is particularly important (53% vs. 18%), whereas Generics are more interested in gaining access to new therapeutic areas (36% vs. 29%).

Pharma Supply Chains: What Drives Complexity?

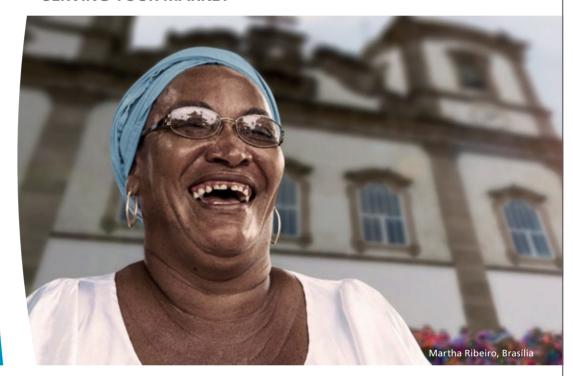
When it comes to trends influencing the complexity of their supply chain, both Innovators and Generics attribute significant power (54%) to lower volumes per stock keeping unit. Especially Innovators feel highly or even

very highly affected (65%) by the increased number of country-specific makeups, e.g., different types of packaging demands according to regions. Furthermore, their supply-chain complexity is for obvious reasons affected highly or very highly (66%) by the increased number of biotech products.

The trend of increased volatility in demand is also particularly relevant for representatives of this business model, who have to increasingly handle lower volumes at higher costs. Similarly. temperature-controlled drugs are attributed high or even very high influence by a majority of Innovators but only by one-fourth of



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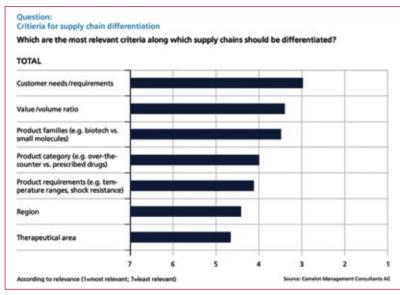
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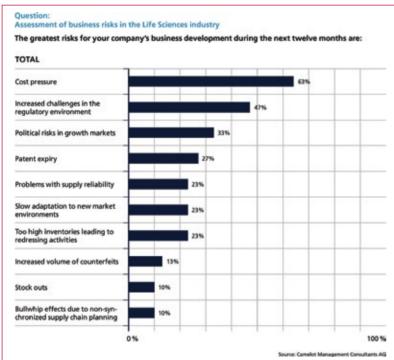
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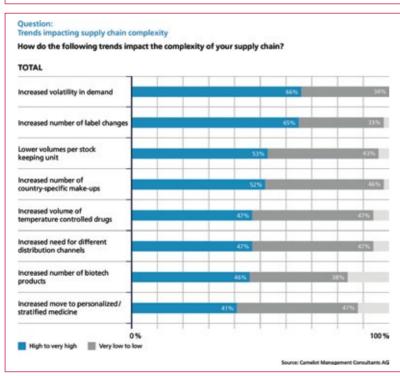


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[Logistics]







Generics' respondents. This is not surprising, given that the "cold chain" is a prerequisite for many biotech products — a market still mostly dominated by Innovators.

Diverging On Differentiation Criteria

Innovators' and Generics' representatives also disagree on the most relevant criteria along which supply chains should be differentiated. Innovators have a strong focus on customer needs, whereas Generics are very much interested in product families and product categories as a criterion to differentiate supply chains.

Generally, answers regarding the various differentiation criteria are very volatile, which adds to the impression that the industry as a whole has not yet found an overall solution for supply chain differentiation. It seems that the industry is unsure about how to differentiate — and the right strategy may in fact depend on the respective company.

Where Differentiation Approaches are Applied

Most companies have realized the relevance of differentiation, and that is reflected in the considerable share of respondents actively dealing with it

This is particularly true for manufacturing and logistics. In manufacturing, 46% of Innovators and 54% of Generics have initiated or planned to apply different strategies, while different processes are a topic for 46% of Innovators and 31% of Generics. In logistics, Generics mainly focus on different processes, while many Innovators take into account different strategies as well.

Sales and supply-chain planning methods also show relatively high rates of planned or applied differentiation approaches, with Innovators preferring different sales strategies. Though up to one-third of respondents have not yet decided on differentiation approaches, the results clearly indicate that the topic has finally arrived in the pharmaceutical supply chain.

Which Differentiation Procedures are Suitable?

As far as the various possible procedures to encounter increased supply-

chain complexity are concerned, enhancing collaboration with customers as well as a transition to flexible manufacturing networks are considered good procedures by the vast majority of respondents — and are already applied by most of them.

Implementation of manufacturing postponement as well as logistics postponement, on the other

"The pharmaceutical industry has accepted differentiated supply chains as a way out of the complexity trap."

Peter Holland, Camelot Management Consultants

hand, is much more relevant for Innovators than for Generics (81%/89% vs. 45%/58%). Opinions differ when it comes to vendor-managed inventory systems: While 68% of representatives of both business models advocate this procedure, one-third of participants do not consider it a good procedure. The relatively low rates of companies already applying this procedure might be due to this fact.

To sum up, the survey shows that a considerable amount of differentiation projects have been implemented or at least planned in various subareas. Nevertheless, there is ample potential to further profit from the advantages of differentiated supply chains — which is why the topic will most likely gain further relevance in the near future.

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