



IFPW 2018 General Membership Meeting EXHIBITOR SPOTLIGHT



Experience, Know-how, Innovative spirit, Vision, Partnership. Decades of tradition link KNAPP to the entire healthcare supply chain and have shaped the sector with pioneering innovations. Trust is the basis for successful partnership: A market share of over 70 percent worldwide illustrates the trust that our customers place in us. The future holds changes and new challenges that must be mastered together in order to continue successfully.

KNAPP, a family owned business since 1952, generates almost 50% of its roughly 1 billion USD order intake within the Pharmaceutical Supply Chain. State of the art, leading edge technology ready to use is what KNAPP is known for and is what KNAPP provides to its clients by delivering, extending or servicing its systems, from simple to complex.

The importance of article availability is nowadays beyond dispute. Service is therefore the focus of our attention: Punctuality, accuracy, traceability and costs are now the decisive factors for customer satisfaction and therefore, for success. Fulfilling these demands requires flexible, economical and error-free intralogistics. All the processes along the supply chain must be transparently fashioned and optimized. Starting with these current trends and demands, KNAPP developed its.

The zero defect warehouse links quality, process security and efficiency along the entire supply chain. How does it work? Continuous checks within the individual processes mean that these demands are no longer in conflict with each other.

Vision technology is used to make the zero defect philosophy a reality. There's a customized Vision solution for all the main processes in a warehouse, from goods-in to goods-out. The zero defect warehouse achieves Sigma level 6, which is considered error-free. Vision technology fulfils the legal requirements, for example, for lot and serial number tracking using 1D and 2D codes.

We at KNAPP believe that a state of the art, solid yet configurable seamless software suite is key for efficient operation of automated distribution systems with the clear target to support the business processes and requirements of our clients today and in future.

KiSoft is the KNAPP group's comprehensive software package that provides transparency along the entire supply chain. *KiSoft* covers all applications in the warehouse, from warehouse management to the control of automatic and semi-automatic processes including individual sensors. It's also possible to integrate several locations and evaluate key process figures as well as visualize processes.

(continued on page 2)

In Brief...

♦ **Dow Jones** announced that **Walgreens Boots Alliance** will be added to the Dow 30, replacing the last original member of the Dow, **General Electric**, once considered the mightiest of the blue chip stocks. "The DJIA will be more representative of the consumer and health care sectors of the U.S. economy," said David Blitzer, chairman of the index committee at S&P Dow Jones Indices.

♦ The **Cardinal Health Foundation** announced that it has awarded over US\$3 million in grants to more than 70 nonprofit organizations in an effort to support local efforts in the battle against opioids in Ohio, West Virginia, Kentucky and Tennessee. The grants are being made available through the Foundation's *Generation Rx Program* and are funded by Cardinal's *Opioid Action Program*, which was launched in the fall of 2017.

♦ **Genomma Labs** (Mexico) acquired three OTC brands in an effort to strengthen its presence in the U.S. branded consumer health market. Included in the acquisitions are the *Bufferin* brand from **Dr. Reddy's Laboratories**, and *Cheracol D* and *Rose Milk* brands from **Sheffield Pharmaceuticals**. Genomma plans a revitalization of all three brands with a relaunch in 2020.

♦ **Sandoz Canada** announced that it has finalized its collaboration with **Tilray**, a Health Canada licensed producer of medical cannabis, making Sandoz Canada the first Canadian pharmaceutical company to enter the medical cannabis field. This collaboration will help to support the rising interest in medical cannabis as a medical treatment option and broader access to products as well as product innovation, research and education.

(Sources: Company Press Releases, Drug Store News, and The Wall Street Journal)

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2017 Top Pharmaceutical Companies in the World

(Source: an article prepared by Dominic Tyler and published by Pharmaphorum; GlobalData)

Looking at recent research by GlobalData on the largest pharmaceutical companies as listed by market capitalization (*see associated table*), the data and analytics company found just half of the top pharmaceutical companies achieved double digital growth.

Meanwhile, the value of five pharmaceutical companies fell in 2017 as Merck & Co, Celgene, GlaxoSmithKline (GSK), Allergan and Shire all saw their market capitalization decline. But there was little change in the upper ranks of the top pharmaceutical companies, with Johnson and Johnson, Roche and Pfizer retaining their top-three status but Roche move ahead of Pfizer into the number two slot. Notably, all three took steps during 2017 to boost their oncology portfolios, with Pfizer's US\$14 billion Medivation deal, Roche's US\$1.7 billion acquisition of Ignyta and several purchases by J&J, including Actelion for US\$30 billion.

GlobalData's listing of publicly-traded global pharma companies, based on a combination of its own analysis, annual reports and stock exchange filings, also found Vertex fared better than most, doubling its market cap to US\$40 billion in 2017. During this time sales of its lead product *Orkamhi* rose 35% to reach US\$1.3 billion and blockbuster status, while *Kalydeco* was up 20% with sales of US\$845 million.

Abbott and AbbVie also increased their market cap by more than 50% in 2017, supported by their promising late-stage clinical pipelines. For AbbVie this includes its oral *JAK1-selective inhibitor* for moderate to severe rheumatoid arthritis and investigational *interleukin-23 inhibitor* for moderate to severe chronic plaque psoriasis. Meanwhile, Abbott was buoyed by the performance of its *Alinity* portfolio of diagnostic systems. Novo Nordisk and Bayer entered the top 10 this year after crossing the US\$1 billion market capitalization value, primarily driven by rising sales.

A lead analyst at GlobalData, explained: “Novo Nordisk grew sales from the diabetes and obesity care categories through its

Tresiba, *Victoza* and *Saxenda* brands, while Bayer benefited from the de-consolidation of its adhesive manufacturing subsidiary Covestro and increased sales from its core pharma brands *Xarelto*, *Eylea*, *Mirena* and *Xofigo*.” He added: “It's easy to see why investors have confidence in the sector. Collectively the top 25 pharma companies reported a healthy average operating margin of 22% which increased to 25% for the top 10.”

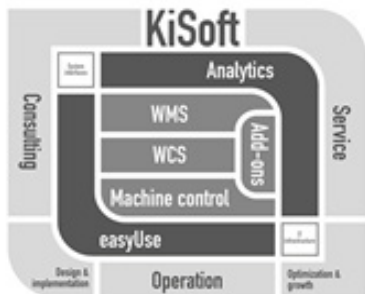
Finally, looking to the future, the top companies continued to invest well in R&D, with an overall R&D/Sales average of 18.2% (once you remove Vertex's whopping 96.5%).

Top Pharmaceutical Companies by Market Cap in 2017

Company	Market Cap (\$m)	2017 Rank	2016 Rank
Johnson & Johnson	387,235	1	1
Roche	217,746	2	3
Pfizer	217,029	3	2
Novartis	205,443	4	4
AbbVie	160,026	5	8
Merck & Co.	154,859	6	5
Novo Nordisk	137,396	7	12
Amgen	133,117	8	6
Sanofi	111,433	9	7
Bayer	105,904	10	13
Abbott	102,556	11	20
Gilead Sciences	102,076	12	11
Bristol-Myers Squibb	101,248	13	10
Eli Lilly	94,760	14	15
GlaxoSmithKline	90,159	15	9
AstraZeneca	88,528	16	16
Celgene	83,054	17	14
Biogen	71,132	18	18
Allergan	58,418	19	17
Merck KGA	48,696	20	22

KNAPP (cont.)...

Furthermore, KiSoft can track lots with precision and can record security and quality features such as serial numbers. KiSoft therefore addresses current demands and supports the 100% check of articles. This makes KiSoft an important element in KNAPP's zero defect warehouse and makes high quality and performance a reality along the entire supply chain.



OSR Shuttle™ Evo and Pick-it-Easy Health - Unbeatable combination.

By combining the OSR Shuttle™ with Pick-it-Easy Health, KNAPP offers a powerful solution for efficient and error-free handling of a wide range of articles.

Goods are stored securely and space-effectively in the OSR Shuttle™ making it the perfect storage system for sensitive or expensive articles. With the OSR Shuttle™, every article in the system is accessible and available at all times.

The OSR Shuttle™ conveys the required containers to the Pick-it-Easy Health work stations. This evenly distributes the workload, even during peak periods. Picking is carried out according to the goods-to-person principle. The easyUse user interface and visual guides make sure that there is transparency, security and efficiency in every step of work. Integrating 100% checks and Vision technologies make the zero defect warehouse a reality.

With Pick-it-Easy, the person is the focus. The special KiDesign of the work station combines process security with efficiency and ergonomics. This translates into reduced strain on the employee,

(continued on page 3)

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while safeguarding optimal performance and quality.

Pick-it-Easy Robot: When workers reach their limits the machine takes on the task. At KNAPP, automation does not mean pushing people out of the work processes. It's much more important to automate where it makes sense and to arrange manual processes so that they're efficient, ergonomic and accurate. In a modern warehouse, people and machines work hand in hand – manual and automatic processes work harmoniously with each other.

Robotic picking is highly suitable for areas demanding a consistently high performance and level of quality over a long period of time. Pick-it-Easy Robot has enabled KNAPP to reliably automate bin picking.

The primary application for Pick-it-Easy Robot is in pharmaceuticals and healthcare. The robot is tailor-made for the



typical range of articles in this sector. The automatic picking solution includes an articulated arm robot with a flexible gripper, precise image recognition and processing, specialized control software and a comprehensive safety concept.

Automatic picking with 100% check.

KNAPP, leading supplier of central belt technology, has more than 25 years of experience in this area. With the Central Belt System, KNAPP offers a modern, comprehensive solution, including special software, for automatic picking in high-performance applications. A wide range of articles can be automated by using different types of autopickers such as the SDA.

Thanks to Vision Central Belt, an add-on from the Vision product line, a 100% check is even possible in automated picking areas. When the articles are transferred from the central belt conveyor to the load unit, Vision Central Belt registers the security and quality features on every single item (serial numbers, lot information, date of minimum durability, etc.). Vision Central Belt is ideally suited for retrofitting into existing systems. The Central Belt System is therefore a central element in KNAPP's zero defect warehouse.

KNAPP-Store: Solution for e-commerce and wholesale.

The KNAPP-Store is the perfect complement to the proven autopicker portfolio and guarantees a decisive competitive advantage with low storage location costs, fast reaction times and high delivery quality.

The KNAPP-Store provides space-effective storage and efficiently picks a wide range of articles on a single item basis. Returns that were otherwise tiresome to store again for automatic picking, can be processed easily and securely thanks to the KNAPP-Store. Lot and serial numbers, along with date marks are automatically registered during the storage process. There are

several different ways that a KNAPP-Store can be integrated. For example, it can be used as part of a Central Belt System or in the manual picking area.

Pack2Patient: New solution for direct shipping

With Pack2Patient, KNAPP offers a customized solution for automatic and secure assembly of patient-specific orders. Pack2Patient guarantees fast order processing with the highest possible quality and end-to-end traceability, as is required for the direct shipment of medicines (Direct2Patient). The innovative Vision technology is central to the Pack2Patient solution as it makes a zero error strategy possible as well as guaranteeing end-to-end monitoring of all process steps.

Four automatic steps to quality and performance.

Automatic separation of pre-picked articles into patient orders, 100% check using innovative Vision technologies, Automatic labelling: the medicines receive individual patient information, Automatic sorting and packing of the articles on ramps, completed orders are automatically provided with relevant information.

Even in the warehouse, Pack2Patient generates added value for the patient. All medicines are delivered to the patient with relevant information, raising the quality of service.

Mail Order Central Fill (MOCF): Reliable automation

At the heart of KNAPP's MOCF solution is the error-free, efficient and automated processing of patient-specific orders that are delivered to patients either by post (Mail Order) or via pharmacies (Central Fill). The medicines are picked as individual pills, in exact accordance with the individual prescription. The focus is therefore on process reliability and quality.

KNAPP's MOCF solutions are sustainable, cost-effective and reliable process solutions that are tailored to the specific requirements in each case, allowing patients to profit directly. The picking process is secured against manipulation from outside – the entire process is protected from cross-contamination. With their high degree of automation, KNAPP's MOCF solutions are ideally suited for high-performance applications in the pharmacy and healthcare sector. With its portfolio of MOCF solutions, KNAPP is optimizing safety for patients and security for processes along the entire supply chain.

Vision coupled with the power of innovation characterize the KNAPP solution portfolio. With its broad spectrum of solutions KNAPP supports the entire supply chain from production to pre-distribution to wholesale to direct-to-patient, as well as other distribution models. KNAPP is not just a partner, but is also an innovator and has influenced the pharma supply chain over the last few decades with developments and solutions such as automated picking of fast-moving articles, shuttle technology, paperless manual picking systems and the current Vision technological bundle zero defect. KNAPP has the necessary vision to pick up on current and future trends, and to translate these with innovative spirit and sector know-how into concrete technologies and solutions.

From Buenos Aires to Leipzig – from Novosibirsk to Cape Town: To be the strong partner at your side, the KNAPP network spans the globe with more than 30 subsidiaries and representatives throughout the world. From solution provider to service provider: A central part of the holistic approach at KNAPP is service and care for the life-time of the system. With the innovative service concept, System Support 360⁺, we ensure long-term investment security, efficiency, and economy of your system.