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FISCHER FIXING SYSTEMS: MOVING FORWARD WITH THE WORKFORCE - CHANGE COMMUNICATION AT THE GLOBAL DISTRIBUTION CENTER

The investment decision was made last year, and after a time-consuming selection process and intensive negotiations, the contract with the general contractor was signed. The business segment Fixing systems of the fischer group of companies faced a significant investment in its logistics – the development of automation technology in the Global Distribution Center (GDC). According to the project schedule, the transition to the automated small parts storage with shuttle technology would take place in December of this year. It was mid-April, and therefore the right time for the Head of Logistics of the business segment fischer Fixing systems, Matthias Wehle, to describe the current status: Were all the important milestones achieved and would the subsequent steps ensure a smooth transition? The employees in the logistics got accustomed to changes over the years. Structural changes such as the introduction of SAP R/3 in early 2000 and the establishment of the automated high-bay warehouse in 2008 had been successfully implemented. It was the same with the continuous improvement process through the use of the fischerProzessSystem fPS. The introduction of pick-by-light technology for the picking of small sized products with high demand had worked well, too. But the last staff meeting about launch of the shuttle system had left with him a feeling of uncertainty. He could already feel the spirit of optimism from some of the employees triggered by the upcoming introduction of the new system. The majority, however, listened patiently and Mr. Wehle sensed insecurity among the employees – how does this change affect me? Up until now, management had used multiple channels to communicate information to the employees. But feedback from the workforce to those in charge was rather rare. And the logistics manager remembered that the use of pick-by-voice for picking had been stopped for a number of reasons. Now as a result of the largest investment in recent years, the GDC faced a drastic operational change. With this in mind, Mr. Wehle pondered over the issue of employee communication again and again. And they had eight more months in order to take action until December…

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Development of the fischer group of companies

From a Swabian workshop to an international medium-sized company – this was the development of the fischer group of companies in a nutshell since its establishment in 1948. Distinctive for the company was its strong drive for innovation, which triggered not only releasing new products, but also forming new business divisions. Based on the number of patent applications, the fischer group was one of Germany's most innovative companies. The workforce generated 13.2 patent applications per 1,000 employees annually which was 20 times more patents per employee than the average in Germany. Thus the fischer group from Waldachtal-Tumlingen in the Black Forest were ranked third among the major patent applicants in Germany. The well-known expansion plug was introduced to the market in 1958, fischertechnik followed seven years later, and with the introduction of the fischer CBOX in 1982 the company stepped into the automotive supplier industry. With fischer greenline, the company became the first to offer an assortment of biobased fixing systems in 2014. In the following year fischer introduced the universally usable DUOPOWER plug to the market. The time line for the corporate development of the fischer group of companies is provided in Exhibit 1.

In 1980 Professor E.h. Senator E.h. E.h. Dipl.-Ing. (FH) Klaus Fischer took over the overall management of the group. Under his leadership, the enterprise widened its activities from a focus on Germany and on nylon plugs towards a global company. Consequently the group included 43 national companies with production sites in Argentina, Brazil, China, Germany, Italy, the Czech Republic, and the United States of America. The 4,160 employees worldwide generated a consolidated turnover of 661 million Euro in 2014.

The group of companies was divided into four main business divisions. By far the biggest unit was fischer Fixing systems. fischer developed, manufactured, and sold chemical products and metal anchors as well as nylon plugs for different applications and materials. In particular, the chemical fastening systems significantly contributed to business growth. The second largest division, fischer automotive systems GmbH & Co. KG, based in Horb am Neckar, developed and produced interior components for original equipment manufacturers of automobiles. In 1965, the division fischertechnik brought the construction toy of the same name to market; since the early 1980s, fischertechnik models could be controlled with a computer. In addition, it was used in the industry for simulating processes. The latest division, fischer Consulting, was formed in 2004. It advised clients in optimizing their processes – with the goal of avoiding waste. It was based on the fischerProzessSystem fPS to streamline all processes, which was developed since 2000. The consistent transformation to a successful lean company with highly efficient processes and lean manufacturing gained fischer the "Factory of the Year 2015" award in the category "Outstanding Production System", awarded by the management consulting firm AT Kearney.

fischer Fixing systems

Positioning

The core and focus of fischer was the division Fixing systems. This was the distinctive competence of the company. With more than 14,000 articles fischer offered a solution for every fixing problem. The strength of this division was the ability to offer the right product in technical perfection for a wide range of customers, from the DIYer and the craftsman all the way to a key account partner.

Market Development

Fixing systems are used in various industrial applications in order to bond materials together. Associated products include bolts, screws, nuts, washers, plugs and chemical substances, which must all be characterized by high reliability. According to a 2015 study by the Mechanical Industries Research & Development Center (MIRDC), the manufacturers of fixing systems recorded USD 71.1 billion in global

turnover in 2014, an increase of 5% over the previous year. The MIRDC estimated the Compound Annual Growth Rate (CAGR) between 2014 and 2018 to be at just over 6%, resulting in a turnover of USD 93.6 billion in 2018.

Major customers for fixing systems were the automotive, the engineering, and the construction industry. According to the MIRDC, the construction industry accounted for 7% of demand in 2014, which would rise to an estimated 8% by 2018. Considering the products offered, the focus of fischer Fixing systems is primarily on this market segment.

Global Construction Perspectives and Oxford Economics published a study named "Global Construction 2030" in 2015. It examined recent developments in the construction industry's global market in order to make predictions for the future (see Exhibit 2: Market size of the construction industry in global key markets at prices of 2014 in billion USD).

The study assumed that the European market would slowly reach the pre-crisis level; Britain would be an exception and replace Germany as the biggest construction market in Europe due to high growth rates. Continuing population increases in India would create a high demand for the construction industry there. China's construction industry would grow as a result of projects in the health sector and in the infrastructure. In the long term, the abolition of the one-child policy could also help to boost the Chinese construction market. The development of the construction industry in emerging markets was highly dependent on the interest rate policy of the US Federal Reserve. Increasing interest rates could potentially halve the markets in Brazil, Russia, and Turkey. The study gave a positive outlook for the Indonesian construction industry which could overtake the Japanese market size by 2030. Overall, the study results supported the consistent orientation of fischer to further develop and invest into foreign markets.

However, the construction industry is also highly dependent on the economic situation of each country with the respective interest rate playing a major role. Low mortgage rates lead to an intensification of the demand for loans supporting construction projects. Furthermore, the development of local purchasing power is an important indicator. However, an overheating of the real estate market may also lead to so-called housing bubbles and their collapse could have dramatic impacts on the construction sector.

A study from the Central German Construction Association (Hauptverband der Deutschen Bauindustrie) showed this bubble effect (see Exhibit 3: Construction spending at prices and exchange rates of 2010 in EUR billion). From 1995 to 2007, the EU-27 invested 1,586 billion Euro in construction projects. However, this positive trend found an abrupt end in 2007 with the bursting of the housing bubble and the resulting economic crisis. Construction investments were down 21% by 2013 at 1,257 billion Euro. This number was even worse in Spain, Greece, Ireland, Italy, and Portugal with a decline of about 45%. The German market was able to stabilize itself, resulting in an 12% increase of construction investments from 2007 to 2014.

fischer Fixing systems on global level

fischer was active in over 100 countries worldwide. The business abroad ran either through a subsidiary or an importer. In 2014, the 43 subsidiaries handled the major share of foreign sales (see Exhibit 4: Overview of the international subsidiaries of the fischer group of companies).

In addition to the subsidiaries, there were roughly the same number of importers, which allowed fischer to have market presence around the globe. The unit of length used in a country was a key factor for the market development. The United States of America were one of the last industrialized countries not using the metric system officially. This resulted in specific issues for fischer when developing the US market.

Logistics processing via the Global Distribution Center

The basis for the success of a product on the market is not only its quality, but also its availability and on-time delivery to the consumer. For this reason, the fischer group decided to build a central warehouse at the production site in Waldachtal-Tumlingen at the end of the 70s. Already equipped with possible expansion areas, the Global Distribution Center (GDC) was put into operation in 1981. Simultaneously with the centralization of logistics processes, the divisional management relied on the centralization of information processes, too – the ERP system SAP R/3 was introduced in the GDC in 2000. This introduction presented staff and management in the GDC with a major challenge, since the data processes practiced to date changed fundamentally from one day to the other – a first important experience with changes for management. Since then, SAP also controlled the conveyor technology. Immediately after the introduction of SAP, the GDC switched to paperless picking via radio data transmission.

With the standardization of the core processes in the GDC, the fischer group could now carry out further steps of integration in terms of a clearly-oriented distribution strategy. The warehouse manager, Mr. Eckhard Hagen explained: “The aim was to maximize centralization in order to react to market demand with an expansion of the article range while keeping a low stock and appropriate delivery service at minimal costs.” The German warehouses in Berlin, Bremen, Hamburg, Mannheim, and Munich were integrated by 2005. In the years 2005 to 2007 Herbolzheim, Wuppertal, and Weiterstadt followed. The RDC (Regional Distribution Center) in Brehna was incorporated during 2013. The integration steps for the German distribution logistics of fischer Fixing systems are shown in Exhibit 5.

The integration steps required enhancements of the technical facilities in the existing building. Thus, the modular shelving system has been extended from 2001 to 2005 to handle small sized articles with low demand efficiently. At the same time, the fischer group targeted the use of new picking technologies. For this reason a pick-by-light system was installed for small sized products with high demand, especially the do-it-yourself (DIY) goods, in 2002. Because of the characteristics of DIY products with a large product diversity and a high product density per unit area, this technology was particularly useful; its use there resulted in a significantly higher productivity.

Strategic decision - Adding a product range of screws

With its innovative strength in the field of fixing systems, the fischer group could position itself again and again with new products on the market. On the other hand, the consistent pursuit of a systems approach concluded that, from the customer's perspective, the right screw with the appropriate plug represented the ideal complementary product. Therefore, the management decided to expand the product range in 2009 by adding a comprehensive range of screws with approximately 2,700 articles. As a consequence of this strategic decision, it became clear that the existing logistics structure had to be adjusted. In anticipation of the extension of products, a fully automated high-bay warehouse was built in 2008. Since this was an extension on existing premises, the basic processes in the GDC substantially remained the same. This investment was an important milestone for the warehouse manager Eckhard Hagen: “At that time we made the first significant step towards the automation of the order picking processes in the GDC.”

After the automated high-bay warehouse was put into operation, the opportunity presented itself for the use of pick-by-voice technology in the picking processes. The advantage was that the order pickers had both hands free for the actual picking process and the entire flow of information could be handled through a head-set. The picker received his task through the headphone, walked to the storage location, grabbed the article, and gave confirmation through the microphone. The transition to this new technology was carried out together with an SAP consulting company. Already at the beginning there were weaknesses with technology; it became apparent simultaneously that the workforce was only rudimentarily prepared for the use of this technology and the corresponding changes in the process flow. The technical

difficulties were overcome step by step and picking quality increased steadily, however the productivity declined. The employees expressed their dissatisfaction with the system; particularly the long response times in dialog mode were upsetting them. It became clear that the technology was no longer accepted by large parts of the workforce, and therefore the logistics management decided to discontinue its use in 2013. This decision was well received by the workers. From this resulted an important experience for the management in regard to the support of future changes in the processes, particularly the use of new technologies.

Forward-looking decision for further automation

Investment for productivity growth

The overall analysis confirmed the fundamental decision to set up a central distribution center, the GDC in Waldachtal, as well as the decision in gradual investments in automation technology and process improvement. It became apparent that the continuous increase in output led to almost 2.4 million order lines in 2014 at costs for the overall logistics that were significantly lower than in 2008 (see Exhibit 6).

The next step towards automation

A deeper analysis of the past two years showed the development to the current state (see Exhibit 7). Especially because of the integration of the warehouse in Brehna during 2013, the parcel volume increased significantly. Simultaneously, the maximum capacity of the GDC with its expansion and technology status was reached.

In light of the analysis of the status quo, the logistics management drew an unambiguous conclusion. Investing in a further automation of processes was inevitable to secure the future viability of the GDC – the idea of a shuttle system was born. With the present order structure, the new system already offered the potential for an increase in productivity, and further integration steps such as the acquisition of a European distribution warehouse would be possible.

Within the shuttle storage and retrieval system several load carriers such as tote bins were positioned behind one another in each channel. Independent shuttles on each level were used to operate the channels (see Exhibit 8).

The tote bins were conveyed by a roller conveyor to the front side of the shuttle system; this was where the shuttles took over the tote bins to put them into storage or delivered them after retrieval from storage. The advantages of the shuttle system were maximum floor and space utilization along with high volume throughput. In the case of fischer, the shuttle system would be used in the picking processes of about 6,000 small sized products. This step, however, would entail a change in the work flow for about 90 employees. In particular, the picking principle would change. So far, many of the pickers had been driving to the storage bins with an order picking truck and collected the items step by step. This picker-to-goods principle would be replaced by the goods-to-picker principle, in which a roller conveyor carried the tote bins to a picking station, where the pickers would unload the amount needed to fulfil the order.

Picking processes

Status Quo in picking

With external dimensions of 190 x 75 m, about 623 x 246 feet, the GDC in Waldachtal offered a usable interior area of approximately 14,100 square meters, about 151,771 square feet. The material flow in GDC took place in a U-flow, goods in and goods out areas were located side by side in the north. Several types of shelving were used in the storage area. The automated high-bay warehouse served as a reserve

stock with an area of approximately 2,100 square meters, about 22,604 square feet. A pick-by-light system was used for small sized parts with high demand, the modular shelving system was mainly used for small sized items with low demand, so-called slow movers. Pallet racks were available for picking orders to cartons and onto pallets (see Exhibit 9 for the material flow, current state).

Due to the large area dedicated to shelving at current, pickers had to cover long distances in order to reach the individual storage locations. With the lifting ability of the order picking trucks, the shipping units, i.e., the cartons or pallets, could be raised to a reasonable height for the operator. For the gripping process, however, the products were stored at different heights down to ground level.

A typical process for the picker-to-goods principle was the picking of individual orders to cartons from the pallet racks; it was carried out with order picking trucks, equipped with radio data terminals. The process is shown in Exhibit 10.

After successfully logging in on the terminal, the picker loaded several cartons as shipping boxes on his vehicle. A barcode label was attached to the boxes to identify the handling unit, which then had to be scanned with the terminal. After accessing a pick list, the positions to be picked and their storage locations were displayed on the terminal in the picking sequence. The picker then drove to the first storage location and scanned its barcode. He then took the goods in the indicated amount from the pallet and put them into the respective shipping box. Scanning the handling unit confirmed the withdrawal. If the same goods had to be picked for another shipping box, the picker would have reiterated those steps and then driven to the next storage location. Once all order lines were picked, the shipping boxes were put on the roller conveyor system for further transport. This completed the pick list and the picker began the process anew.

Automation of processes using the shuttle system

The shuttle system would be used for the picking of about 6,000 small sized products. This meant that the shelving and the pick-by-light system would disappear; in addition, most of the picking to cartons and part of the picking onto pallets from the pallet racks would be relocated to the shuttle system. The shuttle system would be supplied via two depalletizing work stations; there, pallets from the high-bay warehouse would be reloaded unmixed into tote bins for the shuttle as needed. The tote bins would then be moved via a conveyor belt to the shuttle system and put into storage. The tote bins would be manufactured from recycled material and would be designed for minimum noise pollution.

For an order-related demand, individual and unmixed tote bins would be extracted from the shuttle system and transported via a roller conveyor to the new picking area as shown in Exhibit 11. This process design would avoid previous movements by the pickers in the warehouse. The project manager for the launch of the shuttle system, Hendrik Schote, reported on the results of a computer simulation, according to which the net energy requirement of the system would remain constant – with a simultaneous increase of the output by about 20%. Furthermore, the planning assumed that around 75% of the order lines could be processed by the shuttle system.

The picking onto pallets would take place at floor level; picking to cartons would be placed on a mezzanine level, where a picker would stand at a goods-to-picker work station. The work station would consist of a wide table with six openings. As source containers, one tote bin each would automatically be transported from the shuttle system and placed below the two middle openings. Appropriate shipping boxes would be placed below each of the two openings to the left and right, automatically controlled and transported via conveyor belts – see Exhibit 12.

From text on a screen and light indicators, the picker would get information on how many articles he has to transfer from which source container to which shipping boxes. Once he has done so and confirmed it by pressing a button, the next pick required would be indicated by the system to him. Throughout the process, the source containers and shipping boxes would be exchanged automatically. Using conveyor belts, the source containers would be transported back into the shuttle system and fully picked shipping boxes to packing stations.

The shuttle system would be designed to make the processes as efficient as possible. This meant to choose the best combination of source containers and shipping boxes to work on as many order lines as possible in a short period of time. Another important advantage of the shuttle system would be in better ergonomics. The containers would automatically be raised to the optimum working height, and a height-adjustable floor in combination with a rubberized floor surface would make for a physical relief of the pickers. The picking work station for the pallets would be designed to the same ergonomic principles. Nevertheless, the management team was asking whether working at those stations would be too repetitive and offer less variety in comparison with the previous process.

By automating processes, the timing of the processes would be carried out by the system. The system would have to rely on a continuous flow of material. A disturbance in the shuttle system would interrupt the flow of tote bins to the picking work stations, and a prolonged disturbance in the picking work station itself could cause a backlog on the roller conveyor.

Employee communication

In Germany, employees in small and medium-sized companies usually enjoyed a long employment with the company. Between employers and employees, there is generally a cultural understanding for a respectful cooperation with the aim of positive corporate earnings. Typically, this also included a mutual intention to ensure a long-term cooperation which was reflected in the statutory longer notice periods depending on the length of employment.

The regional proximity as well as the identification with the company and its products reduced fluctuation of staff and retained skilled workers at the company. Mission statements with a focus on the employees had a further positive effect and could result in press awards as outstanding employers. This in turn had a positive impact on employee satisfaction and hence their motivation. As a result of this culture and its public image, new talented employees could be attracted.

A positive, functional working culture can be especially relevant when dealing with upcoming changes in structures and processes of a company. Based on the experience with previous changes, it was obvious to the GDC's management team that the communication with the employees was an important factor in order to make the shuttle system a success. In order to clearly associate all means of communication with this project, the project manager Hendrik Schote decided to develop a project logo as provided in Exhibit 13.

The two symbols on the right side of the logo represented the key objectives of the project, improving ergonomics and increasing productivity. In addition to this visualization, the slogan 'fit for future', as well as a reference to the GDC and the fischer group were added. This uniform logo could be found on all means of communication as well as on slides and textiles.

Essential elements of communication towards the employees were information events in which the management team informed on the main elements of the shuttle and the changes. The first event took place in December 2014. It focused on changes in the layout of the GDC, the operation of the shuttle system, its work stations and upcoming milestones. During this event, every single employee received a

personalized project t-shirt with the employee's name and project logo printed onto it. In a second meeting in March 2015, the information was deepened. Particular attention was paid to the ergonomic benefits of the new work stations. At this event, the management team also presented the results of a computer simulation for a peak day in the GDC using the shuttle system, which clearly demonstrated the capabilities of the new system.

To strengthen the team spirit, a picture of all the GDC's employees in front of a fischer truck was taken and printed in a large scale. Afterwards everyone could sign on this poster and thus confirm the commitment, it was visibly hung in the entrance area. Thus, each and every employee walked past it at least twice a day.

Challenges in the change management

After talks with the general contractor, the logistics manager Matthias Wehle didn't see any issues on the technical side of the implementation of the shuttle system. The information events from the logistics management team had presented the new situation in detail, and the employees' questions were answered conclusively by the team. The large investment in the shuttle system was seen as a commitment from the management board to the GDC and its jobs. But a feeling that a number of employees still were uncertain about the situation after the introduction of the shuttle remained present for Matthias Wehle. The employees believed in the necessity of the change as the capacity limit was reached. But the system would set the pace and hence a fear arose of having to work based on piece rates in the future. On the other hand it was expected that the setting of the pace by the shuttle would make for a fair distribution of work, since everyone would have to deliver the same performance. However, such a large change could lead to major difficulties in the beginning. With this said, Mr. Wehle could still remember pick-by-voice. It was necessary to learn from these experiences. Initial discussions about these topics with the project manager, Mr. Schote, and the warehouse manager, Mr. Hagen, showed that he was not the only one with this opinion. The performance data of the new system were impressive, but they were based on a workforce that was committed fulfilling their tasks. According to a guiding principle of the owner and chairman of the fischer group of companies, Mr. Klaus Fischer, the employees were the greatest asset and most important success factor in the company, not the facilities and buildings. Therefore the logistics manager Matthias Wehle decided to take action, after consulting with his management team.

Decision making

In order to introduce the new logistics system with a goods-to-picker principle, a good change management team had to put several things on the right track. During the change the logistics manager, Mr. Wehle, had to make decisions in order to achieve his goal and be able to successfully use the new system.

The following questions needed to be answered in preparation for the implementation of the system:

- What is the target state of the new logistics processes and with which strategy can it be accomplished?
- What lessons can be learned from the implementation process of the pick-by-voice system? What experiences can be used for the current project?
- What are the advantages and disadvantages of the existing logistics system? What are the advantages and disadvantages of the new shuttle system? What are the main advantages of the new technology from the perspective of the employees?

- Which Key Performance Indicators can be used to measure the success of the new system?
- What does the schedule for the implementation has to look like? Which actions must be taken when?
- How can employees be optimally prepared for the introduction of the new system? What has to be communicated at which point of time by whom and using which means of communication? What messages have to be proclaimed by the management at which point of time?
- What is the role of the employees and works council in the project? What needs to be clarified in advance? Where could the works council support and where might it get critical?
- Could resistance be expected and, if so, from which stakeholder? How should management deal with this potential resistance?

Additional readings

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Updated information with current facts and figures of the fischer group of companies could be found at this website.

Further information was added from internal sources in agreement with the company.

Several interviews were conducted with

- Head of Logistics of the corporate division fischer Fixing systems, Matthias Wehle
- Warehouse Manager GDC, Eckhard Hagen
- Project Manager Shuttle System, Hendrik Schote

Biographies

Dr.-Ing. Klaus Moeller is Professor for Distribution Logistics in the Business School at Pforzheim University. He has 20 years of teaching experience in higher education in international universities and is actively conducting research in Supply Chain Management and Applied Information Systems in Logistics, in particular in Warehouse Management Systems.

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Julian Gabel is finishing his Bachelor of Science degree in Business Administration – Purchasing and Logistics in the Business School at Pforzheim University with a thesis on Change Management at the Global Distribution Center of fischerwerke, Waldachtal, Germany.

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Dr.-Ing. Frank Bertagnolli is Professor for lean production and resource efficiency in the Business School at Pforzheim University. He has over 10 years of experience in lean projects as a lean consultant. He worked as a trainer and manager in terms of training consultants and managers on the topic of lean management in the areas of production, planning and IT. He is a qualified systemic consultant and coach. Among different lean subjects he also lectures change management.

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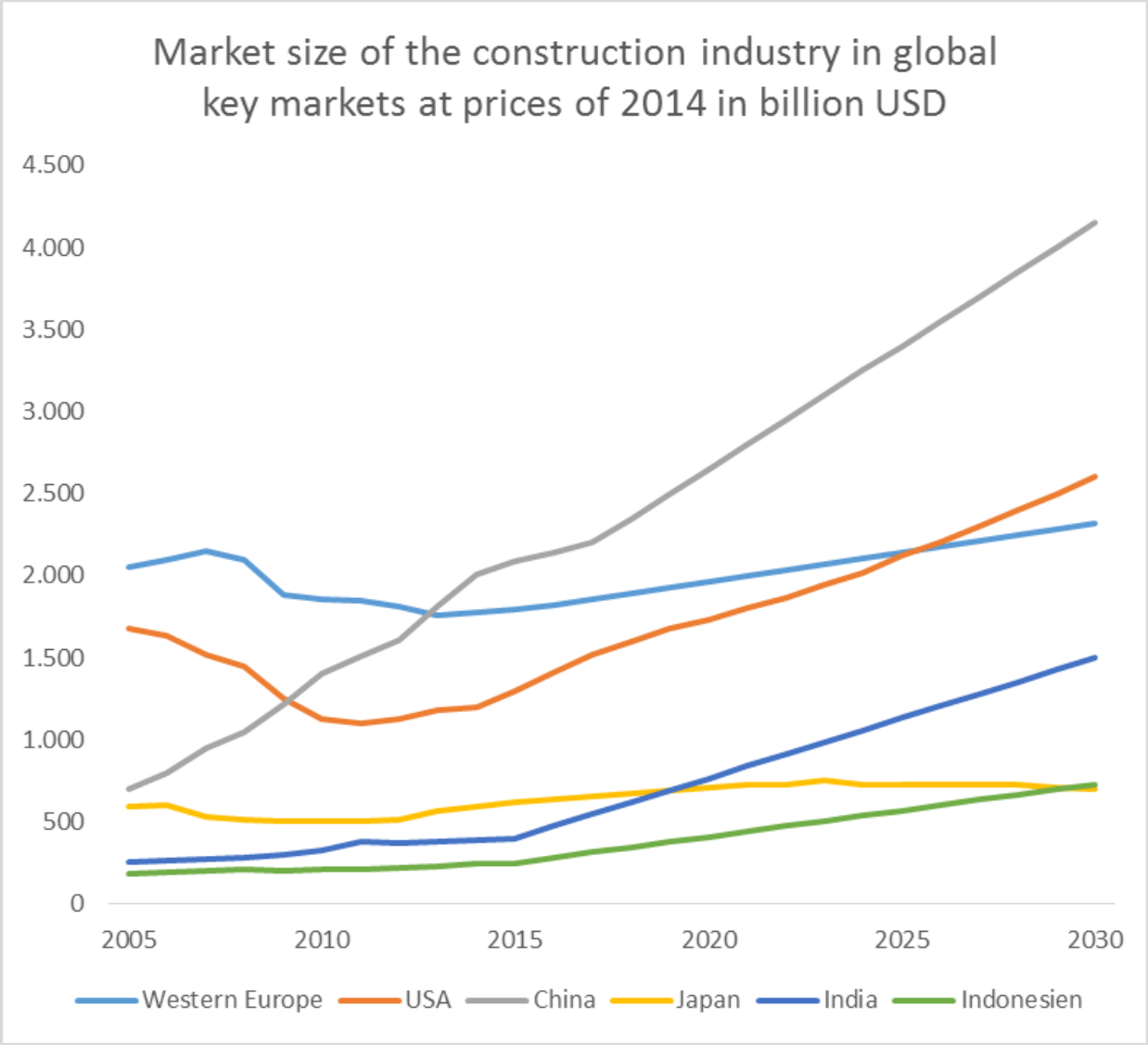
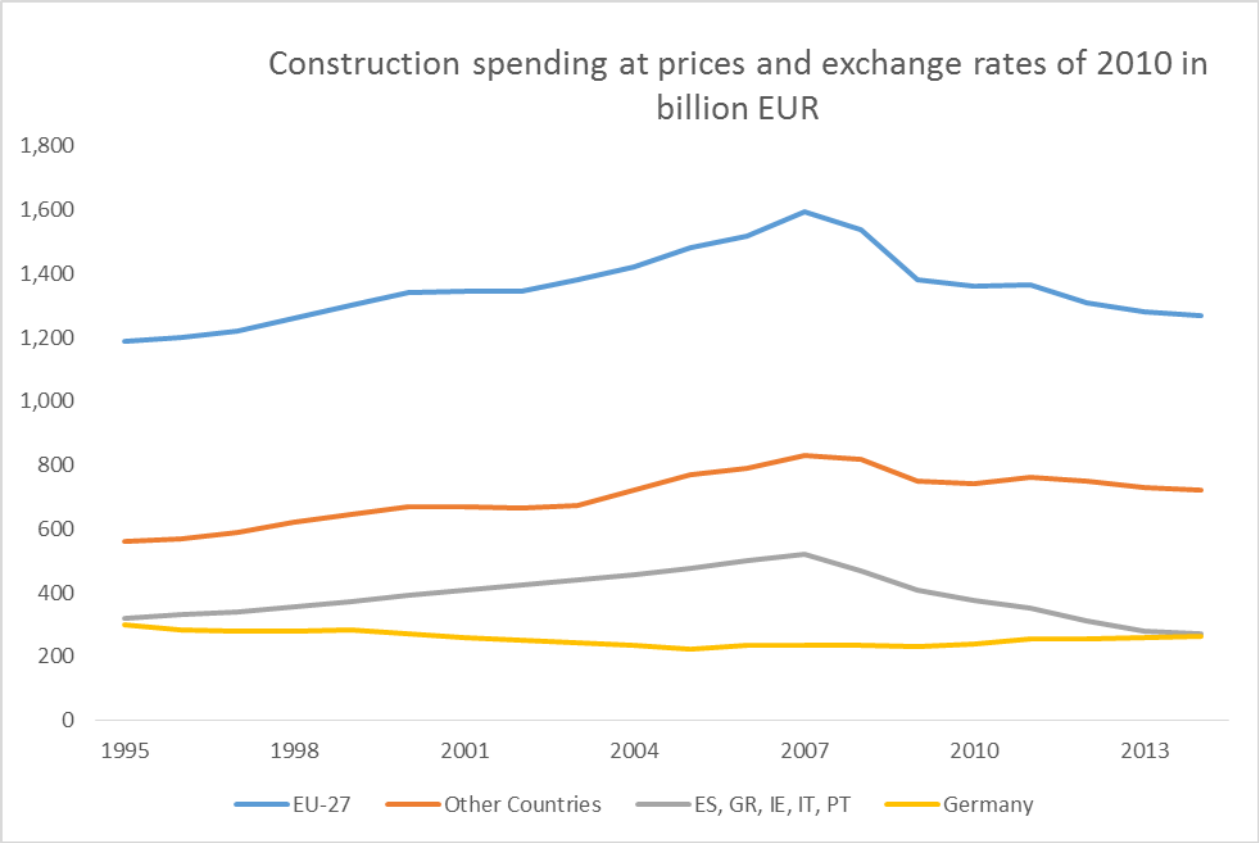
Exhibit 1: Corporate development of the fischer group of companies

Exhibit 2: Market size of the construction industry in global key markets at prices of 2014 in billion USD



Source: Global Construction Perspectives and Oxford Economics

Exhibit 3: Construction spending at prices and exchange rates of 2010 in billion EUR



Source: Eurostat/Hauptverband der Deutschen Bauindustrie

Exhibit 4: Overview of the international subsidiaries of the fischer group of companies in 2014

Exhibit 5: Integration steps for the German distribution logistics of fischer Fixing systems

Exhibit 6: Key Performance Indicators in the GDC and Total Logistics Cost since 2008

Key Performance Indicators for the GDC and Total Logistics Cost since 2008

Year	Articles in Stock	Pallets Shipped	Total Order Lines Pallets	Order Lines per Pallet	Parcels Shipped	Total Order Lines Parcels	Order Lines per Parcel	Total Shipped (Pallets + Parcels)	Total Order Lines (Pallets + Parcels)	Order Lines On-Time Ready to Ship (*)	GDC Cost in EURO	Total Logistics Cost in EURO
2008	5,751	140,250	657,500	4.7	240,320	1,360,500	5.7	380,570	2,018,000	96.83%	8,753,230	9,858,901
2009	7,183	88,750	375,000	4.2	229,750	1,389,500	6.0	318,500	1,764,500	97.64%	7,978,078	9,097,930
2010	8,751	116,250	483,250	4.2	269,855	1,545,250	5.7	386,105	2,028,500	99.46%	8,206,909	9,288,293
2011	9,008	107,500	451,500	4.2	257,500	1,487,012	5.8	365,000	1,938,512	99.64%	8,035,372	9,141,371
2012	9,175	118,500	466,500	3.9	247,750	1,433,081	5.8	366,250	1,899,581	99.81%	8,012,497	9,089,797
2013	9,457	99,317	547,215	5.1	271,739	1,512,473	5.5	371,056	2,007,828	99.16%	8,493,782	9,542,533
2014	8,770	101,957	587,750	5.8	352,955	1,883,756	5.3	454,912	2,379,096	98.80%	9,147,789	9,147,789

(*) Percentage of order lines received by 3:30 PM and shipped on the same day

Exhibit 7: Development of Key Performance Indicators in the GDC since early 2013

fischer
innovative solutions

Key Performance Indicators for the GDC since 2013

Month	Articles in Stock	Pallets Shipped	Parcels Shipped	Total Shipped (Pallets + Parcels)	Total Order Lines (Pallets + Parcels)	Order Lines On-Time Ready to Ship (*)
Jan-13	9,173	21,246	7,086	28,332	162,812	99.81%
Feb-13	9,227	17,688	6,750	24,438	136,052	99.31%
Mar-13	9,379	19,602	7,593	27,195	150,399	98.54%
Apr-13	9,455	22,296	8,593	30,889	163,875	99.78%
May-13	9,469	22,604	9,078	31,682	171,901	98.64%
Jun-13	9,532	23,335	9,653	32,988	173,723	99.48%
Jul-13	9,615	25,548	10,404	35,952	190,172	99.30%
Aug-13	9,611	21,501	7,991	29,492	164,000	99.83%
Sep-13	9,551	24,644	9,254	33,898	184,427	98.98%
Oct-13	9,510	28,893	10,156	39,049	201,224	98.35%
Nov-13	9,474	27,102	8,256	35,358	177,926	98.49%
Dec-13	9,486	17,280	4,503	21,783	131,317	99.65%
Jan-14	9,302	29,491	8,408	37,899	205,229	99.48%
Feb-14	9,313	28,049	7,824	35,873	188,000	99.96%
Mar-14	8,604	29,459	9,221	38,680	202,779	98.87%
Apr-14	8,573	29,534	9,436	38,970	200,279	98.52%
May-14	8,563	27,571	8,751	36,322	192,658	98.25%
Jun-14	8,579	28,680	9,143	37,823	193,280	97.18%
Jul-14	8,666	34,588	10,588	45,176	217,436	96.11%
Aug-14	8,679	28,563	7,201	35,764	188,834	99.62%
Sep-14	8,749	32,418	9,589	42,007	218,168	99.59%
Oct-14	8,736	33,401	9,325	42,726	217,781	99.45%
Nov-14	8,776	29,756	7,434	37,190	195,027	99.20%
Dec-14	8,698	21,445	5,037	26,482	159,625	99.66%
Jan-15	8,724	29,807	8,223	38,030	201,659	99.34%
Feb-15	8,878	28,802	8,655	37,457	195,923	99.91%
Mar-15	8,986	14,162	8,560	22,722	210,710	99.00%

(*) Percentage of order lines received by 3:30 PM and shipped on the same day

Exhibit 8: Shuttle system and facing into a channel

Exhibit 9: Material flow in the GDC, current state

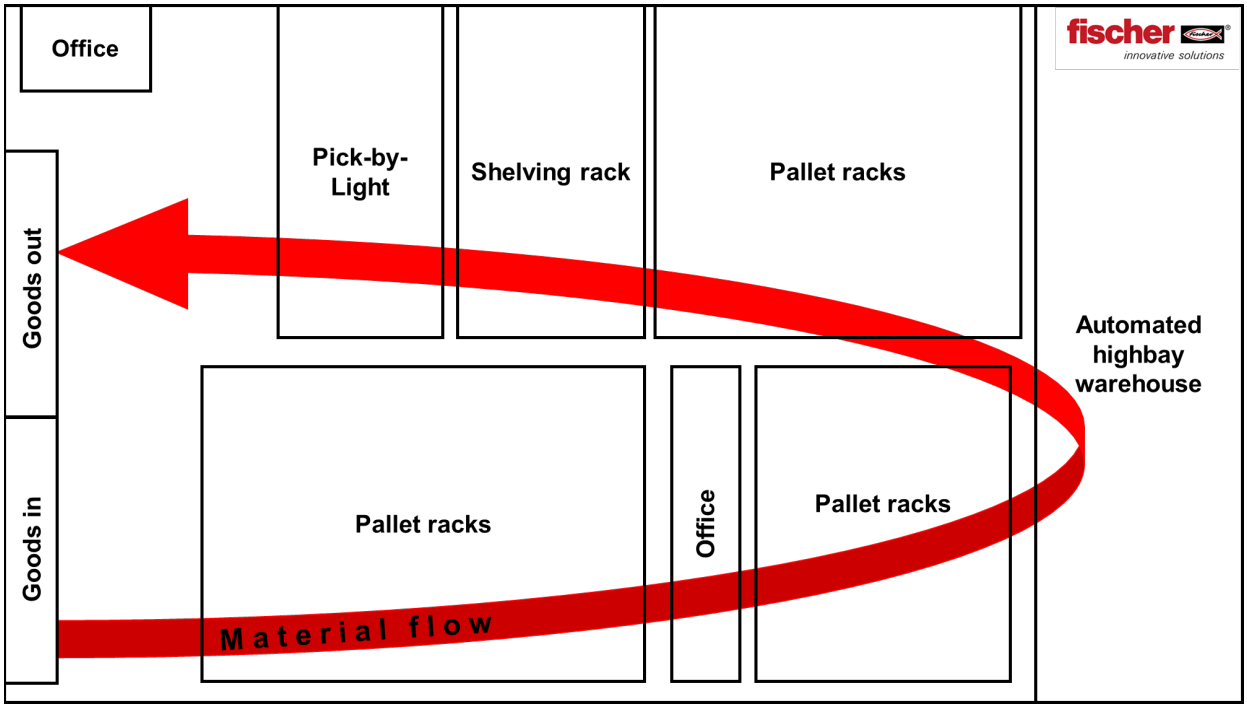


Exhibit 10: Order picking truck for picking to cartons

Exhibit 11: Overview picking processes with shuttle system

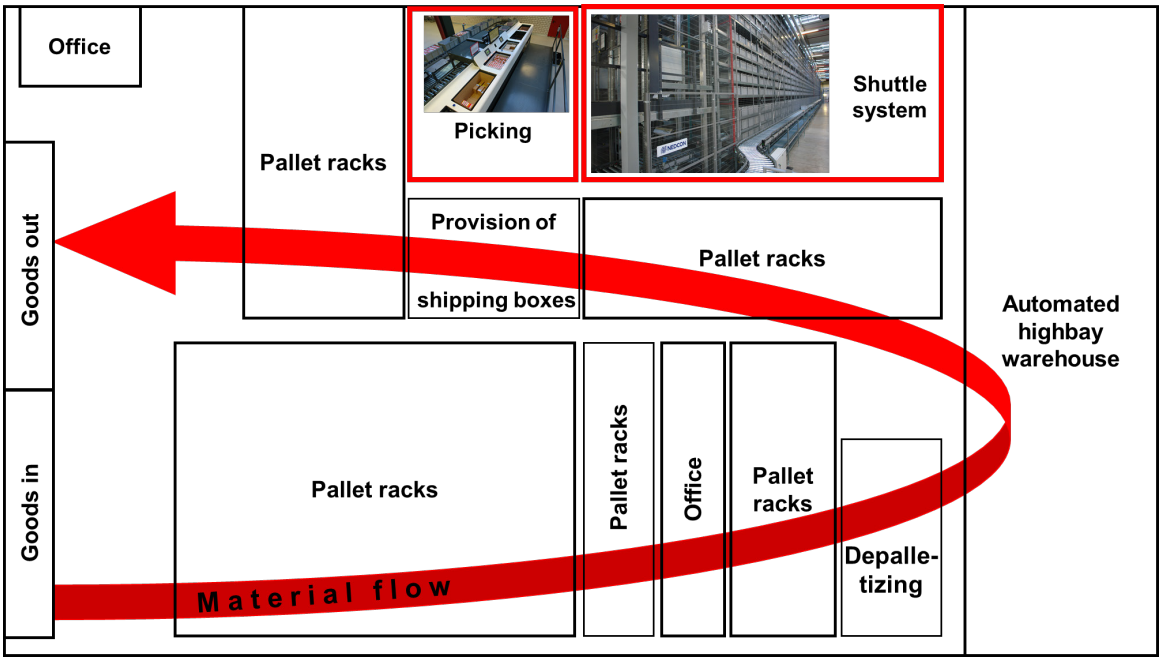


Exhibit 12: Goods-to-picker work station

Exhibit 13: Logo “fit for future”