Professional diploma in procurement and supply

Strategic supply chain management

CASE STUDY
INSTRUCTIONS FOR CANDIDATES

The pre-released case study examination is designed to assess your ability to apply the relevant theories, principles and techniques associated with the unit content to a realistic business situation.

The examination is a three hour open-book examination. The examination questions will test each of the learning outcomes from the unit content.

You will be expected to demonstrate your knowledge and understanding of relevant theoretical principles, concepts and techniques; to apply these appropriately to the particular situation described in the case study and; above all, to make sound decisions. You will not gain marks by writing a general essay on the topic. Prepared notes may not be included as part of the answer.

*Please note that all work should be your own. Copying or plagiarism will not be tolerated and could result in no marks being awarded. If quotes or short extracts are used they should be attributed or the source of the information identified.*

You should acquaint yourself thoroughly with the case study before the examination. You must take your copy of the case study into the examination.
Introduction

IKEA Group (IKEA) is a global retailer of Scandinavian designed furniture and accessories. According to the Marketline Company Profile (2013), the parent company of the IKEA Group of companies is Ingka Holding BV, a private Dutch-registered company, which, in turn, is owned by Stichting Ingka Foundation. The Stichting Ingka Foundation was established in 1982 by Ingvar Kamprad and the ownership of this foundation lies with the Kamprad family. The IKEA trademark and concept is owned by InterIKEA Systems, another private Dutch company, but not part of the Ingka Holding group. The parent company of InterIKEA Systems is InterIKEA Holding, which is registered in Luxembourg. IKEA has operations in 44 countries across Europe, North America, Asia and Australia and is headquartered in Delft, Netherlands. It employs 139,000 people and sells 9,500 home furnishing products in 298 retail-stores worldwide.

IKEA offers a range of furniture for living rooms, bedrooms, kitchens and children’s rooms. The company offers fabric sofas, leather sofas, armchairs, sofa beds, rattan seating, bookcases, extra covers, cabinets, sideboards, shelving units, wall shelves, CD and DVD storages, TV solutions, and coffee tables and side tables for living rooms. For the bedroom, the group offers beds, mattresses, comforters, pillows, linens, curtains and wardrobes. The group’s kitchen offerings include built-in kitchens, free standing kitchens, kitchen accessories and appliances. For children, IKEA offers nursing and changing tables, sleeping, eating, storage and playing accessories.

All IKEA retail-stores have customer restaurants that offer a choice of local dishes. Most retail-stores also have a food shop, the Swedish Food Market, which sells Swedish delicacies such as meatballs, pickled herring, crisp bread, and loganberry jam. The range includes nearly 90 products which are sold under the IKEA food brand. Many IKEA retail-stores also have a play area named Smaland for children aged four to 10 years.

Revenue Analysis

IKEA recorded revenues of €27,628 million ($36,101.5 million) during the financial year ended August 2012 (FY2012), an increase of 9.8% over FY2011.

Europe, IKEA’s largest geographic market, accounted for 70% of the total revenues in FY2012. Revenues from Europe reached €19,339.6 million ($25,271.1 million) in 2012, a decrease of 2.8% over FY2011.

North America accounted for 16% of the total revenues in FY2012. Revenues from North America reached €4,420.5 million ($5,776.3 million) in 2012, an increase of 25.4% over FY2011.

Russia, Asia and Australia accounted for 14% of the total revenues in FY2012. Revenues from Russia, Asia and Australia reached €3,867.9 million ($5,054.2 million) in FY2012, as compared to €1,762.1 million ($2,302.5 million) in FY2011.

Corporate Aims

IKEA’s vision statement is: “To create a better everyday life for the many people.”

IKEA’s mission statement is: “To offer a wide range of well designed, functional home furnishing products at prices so low that as many people as possible will be able to afford them.”

IKEA’s market positioning statement is: “Your partner in better living. We do our part, you do yours. Together we save money.”

1 Direct extract from: IKEA Group Company Profile, Marketline, 9 May 2013.
The objectives of IKEA are to:

- Produce affordable products for the public/customers
- Provide a better life for those who cannot afford expensive products
- Ensure the customer finds what they are looking for in the retail-stores
- Offer low prices.

Corporate Strategies

IKEA’s emphasis on providing home furnishing products at low prices has been the main reason for the widespread customer acceptance of its products which, in turn, has facilitated its growth in various geographies. The company designs, manufactures, transports, sells and assembles its merchandise to minimise cost at each level. To help keep prices low, the group ensures that production equipment and raw materials are used efficiently. Customer involvement also contributes to low prices. IKEA relies on customers to choose, collect, transport and assemble products themselves and offers home delivery services only at an additional cost.

In spite of high raw material prices, expensive transport and inflation, the group reduced its average prices by 0.8% in FY2012. Over the past decade, IKEA has continued to lower prices to customers. The group’s low-cost proposition is central to its product offering and is also a key driver for customers. In FY2012, IKEA stores had a total of 690 million visitors and the group’s websites attracted more than 1,000 million visits during FY2012. Low prices have enabled IKEA to hold a strong market presence which, in turn, gives the group considerable bargaining power and an advantage in terms of higher customer recall. In order to achieve its low-cost strategy, IKEA relies on a combination of innovative design, cost reduction initiatives, a global supply chain strategy, and close relationships with customers and suppliers.

Another strategy adopted by IKEA is to offer unique services that its competitors do not. According to the Marketline Company Profile (2013), it is becoming very difficult for specialist retailers to find relevance as grocers and mass-merchandisers expand to capture a share of the homeware market. Thus, shopping experience facilitated through improved range, price, ambience, layout and facilities could be one such differentiating factor for specialists which can give them a competitive edge. According to a survey carried out by a leading research firm, consumers have scored IKEA high on loyalty, based on improved range, price, ambience, layout, and facilities. This indicates the importance of these factors to consumers when making shopping decisions. Improved price perception and shopping experience will increase footfall which gives scope for increasing the customer base. IKEA’s clearly superior shopping experience and price range enables it to differentiate itself from other competitors and also drive loyalty in a market where the customer is more fickle than ever.

In response to pressures on global retailers to co-exist with the environment, IKEA has also been working towards sustainability since 1990 when the group developed its first environmental policy. IKEA’s sustainability initiatives focus on five areas: offering a sustainable range of products, reducing carbon footprint, turning waste into resources, reducing water footprint, and social responsibility. In order to focus on manufacturing a sustainable range of products, IKEA introduced the Sustainability Product Score Card (SPS) in FY2010. This helps the company develop more sustainable home furnishing products. The score card reflects sustainable aspects throughout the lifecycle of a product, such as the type and amount of raw material used, manufacturing, distribution, product quality, product use and recycling potential at the end of its lifetime.

IKEA has been reducing its carbon footprint by using renewable energy. The company has allocated €1.5 billion (approximately $2 billion) for investment in renewables until 2015. In FY2012, IKEA produced renewable energy equivalent to 34% of its total consumption. Adding the briquettes and pellets that the company makes from waste wood and sells to others, that figure is about 51%. Furthermore, by FY2012, IKEA installed more than 250,000 solar panels on its retail-stores and buildings across the world, and invested in 126 wind turbines in six countries.

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2 ikea.com, July 2013.
3 Direct extract from: IKEA Group Company Profile, Marketline, 9 May 2013.
4 Mittal, Navita; “IKEA’S Low Price Strategy”, cmuscm.blogspot.co.uk, 5 February 2013.
IKEA has also taken several initiatives with respect to waste management. Many of its retail-stores offer customers the facility to return and sort waste for recycling. The group has also started investigating the opportunities to facilitate full recyclability of different materials used in its products. In order to reduce its water footprint, the group ensures that most of its suppliers, primarily based in South Asia, make use of biological water treatment plants. For this, the group provides its suppliers with specialists and external consultants, who, in turn, assist the suppliers to upgrade their water treatment plants and also provide technical know-how. The group’s social responsibility initiatives cover three key areas: employees, suppliers, and communities. IKEA has taken up several measures to ensure the wellbeing of these groups.5

According to the annual Cultural Traction report from Added Value, a WPP-owned global brand and marketing consultancy, the IKEA brand has a very powerful connection with consumers across the globe. The IKEA brand ranks fourth overall behind three technology firms, Google, Apple and Samsung, in the report which assesses brands based their perception as Visionary, Inspiring, Bold and Exciting (VIBE). The research involves more than 62,000 respondents in 10 countries, covering 160 brands and 15 sectors.

The fact that technology brands top the list is not surprising. However, the fact that IKEA ranks so highly among the technology brands confirms its ability to connect with consumers. “This is a brand that’s doing exactly what we’re proposing,” says Maggie Taylor, CEO of Added Value North America. “It’s not just about diving into the cultural conversation; it’s all about refreshing the brand in a way that is culturally relevant but doing it in a way that stays true to who you are.” IKEA is “tapping into the cultural zeitgeist” by acknowledging how people are increasingly interested in design and fashion. And its brand experience is a “much more connected one; IKEA just lives this in everything they do.”

The Supply Chain

IKEA’s supply chain has a global spread with both sales and purchasing in all major regions of the world. The company operates 33 distribution centres and 11 customer distribution centres which supply goods to IKEA retail-stores. The company also has 30 trading service offices in 25 countries and 1,084 suppliers in 53 countries.7 Of the 139,000 employees in IKEA, 14,500 of them work in purchasing, distribution, wholesale, and related areas.8

In a book about IKEA by ex-CEO Anders Dahlvig the author writes about the development of IKEA’s supply chain over the past decades. IKEA started sourcing products from Poland back in the 1950s. The conscious decision to run a relatively small range of products helped the company to keep its supply chain manageable. As the company expanded, according to Dahlvig, IKEA’s success was due to its ability to control and coordinate the entire supply chain, from raw materials, manufacturing and product range to distribution through to its retail-stores; IKEA owns this vertically integrated supply chain.

In the 1990s, a new purchasing strategy entailed relocating the manufacturing activities to the emerging low-wage countries predominantly in Asia, significantly reducing the number of suppliers, creating internal competition between purchasing teams in different countries and, in 1991, acquiring manufacturer Swedwood, which had factories in Europe.

Dahlvig is quite open in his description of the various silos and the associated disconnections within IKEA’s supply chain which built up around the turn of this century. In order to overcome this, IKEA’s supply chain was transformed from a functionally-oriented to a process-oriented organisation. This was the biggest change in the company’s history, writes Dahlvig, and he regards it as a sensible decision to take the time to do it properly (ten years in all): “Small steps of change are less risky than giant leaps.”9

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5 Direct extract from: IKEA Group Company Profile, Marketline, 9 May 2013.
7 Direct extract from: IKEA Group Company Profile, Marketline, 9 May 2013.
8 ikea.com, July 2013.
Supply Chain Planning

According to Jonsson, Rudberg & Holmberg (2013), IKEA’s growth has been tremendous over the last few years and sales are still growing. Currently IKEA plans to open 10-20 new stores every year with a goal to double sales within the coming five years. Considering the pace of growth in sales, the many stores and warehouses, and the fact that some business areas change up to 30% of their assortment every year, supply chain planning is a real challenge. The supply chain needs tight control and high levels of visibility to keep costs down and avoid obsolete inventory and/or stock-outs.

The supply chain is mainly make-to-stock and only a few products are made to customer orders. Consequently, the entire supply chain is heavily dependent on forecasts. The regions and the stores traditionally had strong power and a high degree of local freedom in terms of planning and placing replenishment requests. This led to fragmented supply chain planning with local optimisation and a lot of manual intervention with plans throughout the supply chain. Furthermore, due to frequent shortage situations, some regions purposely overestimated demand to ensure delivery, which in turn has led to imbalance in terms of demand coverage. Hence, some markets have suffered from stock-outs during long periods, whereas other markets have ended up with obsolete inventories.

Forecasting was undertaken at a regional level with approximately 120 users striving for different goals and using different methods. Part of the explanation for this was that IKEA lacked a common and structured tactical planning of demand and replenishment. In terms of capacity planning, all different parts of the supply chain (stores, warehouses, regions, etc.) tried to optimise their own part of the supply chain, leading to a set of imbalanced supply plans with a low and unstable total throughput with long replenishment times for the supply chain as a whole.

This situation led to a number of problems which had a direct impact on performance in a number of ways. First of all, the supply chain had a functional orientation with limited transparency, leading to a reactive behaviour with fluctuating goods availability (sometimes stock-out situation and sometimes over-stock). IKEA also used extensive manual work in its planning processes and the planning was based on fragmented and unreliable planning information. Hence, there was a lack of trust between different parts of the supply chain, which further exacerbated the bullwhip effects in the supply chain. Other problems related to the supply chain performance were: difficulties in data maintenance, a lack of proper follow-up tools to monitor forecast deviations, difficult to change mindsets among users, and no synchronisation of order and stock data, to name but a few.

To overcome the difficult situation, IKEA initiated a programme aimed at taking better control of its supply chain, and enhancing performance in terms of delivery service and costs. A new planning concept was developed and is currently being implemented. Its cornerstones are mutually integrated planning processes, a centralised planning organisation, focus on data quality, and use of advanced software support. As a first step in developing the new planning concept, IKEA centralised all forecasting activities and need calculations in order to control stock levels and replenishment throughout the whole supply chain.

The new planning process starts with (i) corporate sales planning, which sets the frames for the (ii) tactical demand planning activities at the 12 business areas. The forecasts are thereafter input to the (iii) need planning process, which in turn drives the (iv) supplier capacity planning process and the planning of the distribution supply chain (transport, warehouse, and retail-store planning). The planning process is owned by a central function at IKEA of Sweden (IoS), where decisions concerning the number of articles, purchasing, suppliers, distribution, and retail-store coordination are made. As such, IoS is the centre of all planning activities in the new process.

(i) Sales planning starts with the overall sales forecast made by Group Management (GM) at IKEA. The forecast is made at an aggregate level in terms of total sales volumes in monetary units for IKEA in total. It expresses the expected sales increase in percentages. The forecast is related to the strategic business plan, involving business cycle and market intelligence issues, and includes the remaining part of the current fiscal year plus five years into the future. The corporate sales plan is updated three times per year. At the other
end of the sales planning process, demand planners at IoS provide forecasts for each of the 12 business areas in terms of sales volumes, taking into account the business areas’ (BA) growth plans and ambitions for the future.

The responsibility for merging the two gross forecasts lies within IoS, where demand planners explode the corporate management sales plan into BA sales and compare the two forecasts. After differences between the two forecasts have been reconciled, the merged forecast is broken down into sales frames per regions (a region is a group of countries), and further down into sales frames per product area. These frames are thereafter compared to the forecasts provided at the tactical demand planning level. The sales plan and the frames are reviewed three times per year, and the forecasts have to be adapted to the frames also three times per year. If there is a difference between the forecast and the frame, the demand planners need to adjust the forecast accordingly. One method is to adjust the forecast in a specific country. If this is not appropriate, the forecast is proportionally adjusted in all countries.

(ii) The next stage of the process is demand planning. 32 demand planners are active in the tactical demand planning process, each responsible for forecasting a certain part of the assortment. The tactical forecast resides with IoS and is carried out on a rolling 84-week planning horizon at retail-store level, with new historical sales data loaded once a week. The operational forecast is a manual forecast of the replenishment needs of the retail-stores for the coming three weeks, whereas a tactical forecast (based on sales history) is used for weeks four to 84. The operational forecast and the tactical forecast are combined to create a final forecast for each article at the retail-store level. Thereafter the forecasts on store levels are aggregated, reconciled, and compared with the sales frames at the retail forecast-group level (usually country level) and on the distribution services regional-level (several countries).

A Retail Forecast Group (RFG) consists of between one and several stores located geographically close to each other. In Europe, a RFG normally corresponds to a country. The RFGs are usually grouped and served by a fewer number of Distribution Services regions. In Europe, for example, there are six such regions. The market input on the two upper levels concerns every country’s activity plan (for example campaigns) and estimated price changes on product level. IKEA encourages the individual countries and stores to have local campaigns and activities. But country-specific activity plans must be decided at least six months in advance. Activities on store level can be planned on shorter notice. Demand planners review the forecast at the regional level each week in order to identify those products for which the forecast deviates considerably from actual sales. In these cases, the demand planner looks for the reason and adjusts the sales figures or forecast model accordingly.

(iii) Need planning is the next stage in the process, and follows traditional distribution requirements planning (DRP) principles. The retail-stores provide a forecast for each article in relation to the coming three weeks, whereas weeks 4 to 84 are the responsibility of the demand planner. The forecasts are netted against current stock levels and safety stock requirements at the retail-stores, and also netted against goods in transit. Thereafter the net requirements of the retail-stores are aggregated into distribution centres (DCs) and then netted against DC stock levels and goods in transit to replenish the DCs. Each DC Group is thereafter aggregated and the calculated forecasted demand for the coming 84 weeks is established, of which the coming 26 to 52 weeks are communicated to the suppliers (depending on the quality of the plans).

Volumes are divided between suppliers based on a supplier matrix which determines the split of volumes between different suppliers. One DC article could for example be sourced from two or three predetermined suppliers. The need planner is the person responsible for the need calculations, and also takes care of the exceptions messages that might occur. Examples of exception messages that the need planner must resolve are stock exceptions (low, high, stock-out, etc), transport exceptions (late-in-transit), and supplier exceptions (capacity, commitment, etc).

(iv) The need calculation is used to plan capacity requirements at the suppliers. In the general agreements between IKEA and its suppliers, IKEA often commits to provide a certain volume to a supplier. This is to make the supplier willing to invest in plant and equipment to produce the desired products. Furthermore, the supplier communicates a capacity limit to IKEA up to which the supplier guarantees delivery of volumes.
The supplier capacity planning at IoS includes load-levelling between weeks to always fulfil the committed volumes (which also includes shifting volumes between different suppliers), and also to stay within the capacity limits. This could be conducted by a load-levelling function in the planning system or manually by the supply planners.10

**Implementation Enablers**

In order to realise the new supply chain planning concept, Jonsson, Rudberg & Holmberg (2013) identified four main enablers for its implementation: (i) planning organisation, (ii) data quality, (iii) software support and (iv) project and change management.

(i) Planning organisation. Supply chain planning responsibility was centralised to IoS, and two specialised planning positions (demand planner and need planner) were developed to take responsibility for the main processes in the planning concept. There are 32 demand planners and their role is to secure that the sales planning is translated into a sales forecast at article-level. The responsibility includes the global sales forecast accuracy, involvement in the sales planning process, product range changes and development of the sales forecast methodology.

The 70 need planners focus on ensuring that need planning continuously matches capacity planning. Need planners are responsible for service levels and stock levels in retail-stores and DCs, the need planning process, balancing the need and capacity per supplier/category/material, actions on capacity exceptions, and supply-plan accuracy. The longer-term planning issues, such as checking and securing supplier capacity, involve the strategic purchasing and trading business support organisations.

The establishment of the two centralised planner positions is important for creating necessary specialist competence in demand and need planning, but also for making it cost efficient and practically possible to carry out the planning processes in a standardised way. However, there have been some problems implementing the new planning concept and working methods, partly because of insufficient end-user training and support, insufficient knowledge and involvement by line management, and unfamiliarity with the planning software.

(ii) Data quality. The importance of improved data quality was identified early as an enabler to successful implementation of the planning concept. Insufficient maintenance of lead time data gave incorrect input to the need calculation and caused stock-out problems in retail-stores. Process improvement was difficult due to incompatible data capture and lead time measurements throughout the supply chain. As a response to these problems, a new lead time concept that assigns clear responsibilities to different actors was implemented. Furthermore, a work group was established with members across the supply chain deciding on working methods and lead time issues and a web-based application (based on a data warehouse solution) was created to visualise lead times and exceptions on missing lead time data.

There were also some problems with in-transit and stock-data synchronisation, which sometimes resulted in double-counting of stocks. Status updates of in-transit data were not always available throughout the supply chain. This resulted in incorrect need calculations and delayed order generation, which resulted in stock-out risks. Also, the master data quality was sometimes of insufficient quality, for example, due to an incorrect updating process.

In summary, incorrect data figures resulting in poor planning accuracy decreased the trust in the plans and also resulted in extra manual work. Extra manual work also led to more manual intervention with plans, which is counter-productive to the main ideas with the common working methods concept. As it is now, the supply plan accuracy is still quite low, mainly due to low forecast accuracy of new products, manual intervention with plans, and because everyone does not follow the established working methods. Also, the project is still in process and has so far only been implemented in parts of the supply chain (mainly for suppliers to the DCs and partly for DCs to the retail-stores).

(iii) Software support. IKEA had an old patchwork of systems and applications, and it was difficult to change any of them. However, to facilitate the new planning concept, Advanced Planning and Scheduling (APS) software from JDA Software Group was implemented to support most of the planning process. The JDA Networks Demand module was implemented to support the forecasting processes. The software, in combination with organisational changes, made it possible to reduce the number of forecasters from 120 to around 30, and at the same time the average forecast accuracy increased from 60% to 80%. The JDA Fulfilment module was implemented to support the 70 need planners in the need calculation and supplier capacity planning process. It also supports other roles in IKEA’s planning organisation with accurate and up-to-date information on net requirements, stock levels, safety stock calculations, and replenishment needs.

In summary, the demand and fulfilment software supported the forecasting and the need calculation with functionality to carry out frequent quantitative forecasting, distribution requirements planning, aggregating and disaggregating forecasts, but also with a user friendly interface allowing for customised visualisation, report generation and exception based working methods.

(iv) Project and change management. IKEA has over time struggled with achieving consistent results from its implementation efforts. Although several projects resulted in successful implementations, the opposite has also occurred, resulting in some employees not being fully adapted to the new working methods and tools. The change process was not sufficiently recognised and affected employees have sometimes been brought in too late to the process or been left on their own too early at the implementation stage.

In order to overcome this situation, a four-step model has been defined which clearly recognises the need to create awareness in the first step, create interest in what is coming in the second step, make users try out the solution in the third step, and finally adopt the changes in the fourth and last step.

The experience thus far is that the receiving organisations truly appreciate this implementation approach and the result is very good. An approach like this requires that staff, skilled in communication and learning actively, support the line workers. This might at first glance be perceived as an extra cost, but the true belief is that making things right from the start saves money in the end.

In conclusion, the implementation of IKEA’s new planning concept led to several improvements in its supply chain, such as reduced stock levels and improved service levels. Table 1 illustrates the characteristics of and main differences between the old and new planning concepts. ¹¹

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<thead>
<tr>
<th>OLD PLANNING CONCEPT</th>
<th>NEW PLANNING CONCEPT</th>
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<td>• Functional orientation</td>
<td>• One integrated planning process providing reliable planning information</td>
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<td>• Limited transparency</td>
<td>• A common working-together environment creating supply chain visibility</td>
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<td>• Reactive behaviour</td>
<td>• Working methods and tools to detect and deal with problems at an early stage</td>
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<td>• Extensive manual work</td>
<td>• A coordinated and balanced Supply Chain</td>
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<td>• Unreliable planning information</td>
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<td>• Lack of trust</td>
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<td>• Fluctuating goods availability</td>
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<td>• Over stock</td>
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Table 1: Old and new planning concepts at IKEA

Distribution

As part of IKEA’s expansion in the USA, it built a new 750,000 sq ft distribution centre (DC) in Port Wentworth, Georgia, located near the port of Savannah. According to Trebilcock (2011), the DC handles 3,500 different home furnishing lines with a throughput of 600 pallets per hour at full capacity. There are 140 employees working seven days per week. Three principles came into play in the design of the facility, according to Jim Leddy, IKEA’s expansion manager for North America, and Ed Morris, manager of the Georgia DC.

First was the recognition that IKEA is a global company. “We incorporated a design based on a model used by other similar DCs around the globe,” explains Morris. The second was location. While the DC design is global, the facility’s location allows it to quickly deliver fast-moving products to IKEA retail-stores in local markets in the south-eastern United States, including North Carolina, Florida and Texas. While IKEA is a global company, the DC’s location was chosen to position the fastest movers closest to the retail-stores for replenishment. That not only improves service times, it also reduces transportation costs. A third was automation. While IKEA operates highly-automated facilities in other countries, this is the first automated DC in North America. In this case, the DC was designed around a 13-crane automated storage and retrieval (AS/RS) system featuring a 100 foot-tall high-bay in-house rack system. At full operation, the system can process 600 pallets an hour, or nearly one pallet per minute from each crane.

The combination of factors has reduced the turnaround on orders to the retail-stores from 72 hours to 24 hours while taking nearly 700 miles out of the distance from the DC to the retail-stores and from the port to the DC. “As we increase the number of [retail] stores and the volume being handled in that facility, our ROI [return on investment] will improve because of the increased throughput in the system,” says Morris. The location and design will also allow IKEA to double the capacity as the company continues to open stores.

Before the new DC was built, IKEA had just two retail-stores along the south-eastern seaboard: one in Atlanta and one in Virginia. Those retail-stores were supported by a DC in Perryville, Maryland. IKEA, however, is in growth mode. “We have to have a distribution strategy that can support our growing retail operations,” says Leddy. “We’re opening [retail] stores in Florida and Charlotte, North Carolina, plus we have three existing [retail] stores in Texas.”

Port Wentworth was chosen because of its proximity to Savannah, just four miles from the largest deepwater port on the east coast with room to grow. “Since the majority of our product is received via ocean freight, we bought on port property,” says Leddy, who oversees site selection and property development for IKEA in North America. The new facility allowed IKEA to create a new distribution strategy. The Perryville facility now handles low-volume products for the entire eastern half of the USA. Meanwhile, regional DCs, like Port Wentworth, can handle the fastest-moving products sold by the retail-stores serviced by those DCs. “We’re putting the higher volume products that much closer to the market, which reduces our transportation time, and reduces the total distance we need to travel to support the stores,” says Leddy.

Just as the location was important, so was the design, which is based on successful implementations at other IKEA distribution centres around the globe, right down to the three pallet designs used for storage on racks and in the AS/RS: A standard Euro pallet, a half pallet and an IKEA pallet, which is an over-sized Euro pallet. In part, that allows IKEA to use standardised packaging for shipping. “We control our product pipeline, so we design our products around these three standard pallet sizes,” says Leddy. “The idea is that no matter where our product is manufactured, it can be shipped to any of our facilities anywhere in the world.”

But, adds Morris, there are other operational benefits to using a global design. “With global DC designs in place, we are designing standard operating procedures within those models. When that happens, there will only be one way to work when a new DC opens in the future, with local exceptions, of course.” In addition, standard processes and designs enable IKEA to apply the results of pilot projects across the organisation, creating exponential improvements. “When you try something new, you can determine if it makes sense to adapt that process in other facilities,” says Morris.
Standardisation also creates opportunities to benchmark performance across the enterprise. “If one facility is struggling, it’s easier to look at their metrics and pinpoint where a problem might be coming from,” says Morris. “And if one facility is outperforming the others, we can see what they’re doing differently and apply that to other operations.” Finally, as a global company, standard business processes facilitate movement within the organisation. “We have people who move from Europe to America and America to Europe,” says Morris. “Standard DC designs and processes make it much easier to transfer knowledge within the organisation.”

Several factors led to IKEA’s decision to open its first highly-automated facility in North America. The first was the tightening labour market facing almost every company operating a large-scale DC. “We recognise that driving a lift-truck up and down storage aisles is a pretty mundane job,” says Leddy. “Automation will allow us to increase our throughput without the need for additional workers in a tough labour market.” Likewise, taking advantage of the height of the building enables IKEA to support the growing operations in the south-eastern US.

The fact that more than 90% of the facility’s volume is full pallet in/full pallet out also led to the choice of an automated storage and retrieval system. That system, as well as conventional receiving and put-away processes, are further optimised through task interleaving. Each time a crane puts away a pallet in a storage location, it simultaneously retrieves a pallet to fulfil an order. Likewise, the warehouse management system directs operators on the floor to the next available task so that a lift-truck never travels empty: an operator who has just dropped off a pallet for put-away at the AS/RS, or who has put away a pallet in the pallet rack, is directed to the nearest pallet available to fill an order at the receiving dock.

Using an automated storage solution has also resulted in more accurate inventory. “Because the system is so automated, you have very tight control over your inventory,” says Morris. “It’s the best auditor we could possibly find.”

While the AS/RS is the most visible automated system in the facility, IKEA looked for other opportunities to implement automation. One of those was a fast-charging system to replace the traditional battery changing room. “We knew that each worker was losing 20 to 30 minutes a day for battery changes,” says Morris. “You multiply that by lift-truck drivers, and we were losing about 45 hours a day plus the cost of a battery maintenance crew to battery charging time.” Morris adds that this was the first facility that is a 100% fast-charging facility, but that change is expected to deliver savings of $125,000 a year.

As the facility begins its second full year in operation, Morris and Leddy say it has met or exceeded all the goals IKEA set out for the facility. In fact, IKEA is so pleased with the results that it is implementing the same design in Tacoma next year with plans to open another at a later date in Joliet. “We have reduced our lead-time to the [retail] stores and reduced our transportation costs,” says Morris. “As we take on more volume this year, we expect this to be our highest-performing DC in North America.”

**Material Handling**

In October 2011, IKEA announced that it will phase out wooden pallets on a global basis. Wood will be replaced with a shipping platform IKEA is calling the ‘material area paper pallet’. “The objectives of this change are to decrease costs and create a more sustainable business by having less impact on the environment,” IKEA explained on its website.

IKEA had been experimenting with alternatives to wooden pallets for several years, using three standard, unique paper pallets at its operations near Savannah, Georgia, as well as using Optiledge, a unique, recyclable plastic shipping platform that makes more efficient use of the space inside shipping containers.

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According to a report from Rick LeBlanc of Packaging Revolution, the elimination of wooden pallets will “involve the upgrading of IKEA’s racking storage systems through the company to support unit loads built on paper pallets and the [plastic] Optlidege system.” LeBlanc added that “IKEA believes that it will achieve better fill rates in ocean containers and trucks.” Other reports indicate that IKEA believes it can save $193 million a year in transportation costs.13

Sourcing

A number of distinct characteristics related to its sourcing principles enable IKEA to stay competitive in the interface with its suppliers. A cornerstone of its sourcing strategy is the ownership of product rights, allowing IKEA to switch suppliers when necessary. In addition, IKEA seems to concentrate on as few suppliers and as few supply markets as possible. This selectivity means that IKEA is effective in balancing its market choices; concentrating its sourcing activities in certain geographic areas by committing to and investing in some markets, while deciding to forego opportunities in others.

A study of one of IKEA’s supply chains by Hultman, Hertz, Johnsen & Johnsen (2009) demonstrates the global nature of its sourcing approach. The sliding doors for IKEA’s PAX wardrobe are assembled in Sweden, Slovakia and China by Sapa Profiler, a Swedish company which is one of two suppliers contracted to undertake this activity. Table 2 provides an overview of the supply set-up for the major components of the sliding doors for the PAX wardrobe system.

<table>
<thead>
<tr>
<th></th>
<th>ASSEMBLY UNIT FOR PAX IN SWEDEN</th>
<th>ASSEMBLY UNIT FOR PAX IN SLOVAKIA</th>
<th>ASSEMBLY UNIT FOR PAX IN CHINA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tempered glass</td>
<td>Sourced from China with local back-up supplier in Sweden</td>
<td>Sourced from China with local back-up supplier in Sweden</td>
<td>Sourced from China with local back-up supplier in China</td>
</tr>
<tr>
<td>Sliding profiles</td>
<td>Sourced from Germany</td>
<td>Sourced from Germany</td>
<td>Sourced from Germany</td>
</tr>
<tr>
<td>Packaging materials</td>
<td>Local sourcing</td>
<td>Local sourcing</td>
<td>Local sourcing</td>
</tr>
<tr>
<td>Rubber components</td>
<td>Sourced from Sweden</td>
<td>Sourced from Sweden</td>
<td>Sourced from Sweden</td>
</tr>
<tr>
<td>Steel components</td>
<td>Sourced from Sweden</td>
<td>Sourced from Sweden</td>
<td>Sourced from Sweden combined with local source in China</td>
</tr>
<tr>
<td>Assembly fittings</td>
<td>Sourced from Slovakia</td>
<td>Sourced from Slovakia</td>
<td>Sourced from Slovakia</td>
</tr>
<tr>
<td>Aluminium frames</td>
<td>In-house production and locally sourced processing</td>
<td>In house production and in-house processing</td>
<td>Local sourcing with in-house processing</td>
</tr>
<tr>
<td>Bristle seals</td>
<td>Sourced from China</td>
<td>Sourced from China</td>
<td>Sourced from China</td>
</tr>
</tbody>
</table>

Table 2: Sliding doors for the PAX wardrobe system

The most complex sourcing arrangement is tempered glass, due to its significant contribution towards the total cost of sourced accessories (around one third), and its heaviness and fragility which make it very demanding to transport. Moreover, the quality of tempered glass in the product is very visible, as it constitutes the front of the wardrobe system that is handled and seen head-on by the consumer. The main reason for sourcing tempered glass in China is the potential to reduce costs.

Several of the components of the PAX wardrobe system are sourced globally with the primary or sole source in Europe. Four of the component categories are sourced from Europe for the production unit in China. There are several reasons for continued sourcing in Europe: either patents (sliding profiles), contracts that are tied to IKEA (fittings), or that the Chinese sourcing market did not satisfy the sourcing needs (rubber components and steel components).

13 “IKEA to phase out wooden pallets”, Modern Materials Handling, 30 November, 2011.
Since the 1980s IKEA has aimed at controlling the development and supply of fittings within its product range. In the case of the sliding doors for the PAX wardrobe system, fittings are sourced from IKEA Components in Slovakia and China. The fittings sourced from IKEA Components are, however, in their turn also sourced globally with worldwide integration across the entire IKEA range.

Other component categories are sourced locally. For example, packaging materials are sourced locally for each production unit. Concerning packaging materials for the sliding doors for the PAX wardrobe system, IKEA Components is again involved in contracting with preferred suppliers of, for example, cardboard.14

Supplier Management

In order to ensure that its suppliers are compliant with its sustainability objectives, IKEA has developed its IWAY (IKEA Way) code of practice, which enforces minimum standards on the environment, safety, social, and working conditions. The IWAY code of practice expects suppliers to:

- follow national and international laws
- not use child labour
- not use woods and glues from non-sustainable forests
- reduce their waste and emissions
- contribute to recycling
- follow health and safety requirements
- care for the environment
- take care of their employees.

The application of the code raises standards. Each of the requirements within the code of conduct helps to develop sustainable business activities. They have a positive impact on the business environment in which the suppliers operate. They also improve the experience of people working for those businesses.

To monitor suppliers, IKEA regularly carries out an IWAY audit. This involves talking to employees and inspecting documents and records. IKEA visits suppliers on-site on a number of occasions to ensure that they are following the code of conduct. The code of conduct for suppliers and the work with other organisations underlines IKEA’s commitment to ‘low price but not at any price’. Although IKEA wants its customers to enjoy low prices, this should not happen at the expense of its business principles.15

IKEA has a goal of making all of its suppliers compliant with the IWAY code of practice. In its latest sustainability report, the company said it expected some existing vendors would not be fully compliant by the deadline of the end of September 2012, and was preparing to ‘phase out’ those who did not meet the standards. In total, 60 per cent of suppliers are IWAY approved. Some 90 and 94 per cent of vendors in Europe and the Americas are, but only 11 per cent in China. “Many suppliers in China do not comply with requirements relating to working hours, and it is not realistic to close the gap between the legislated working hours and reality in a short period of time,” said the report. As a result, these vendors have been allowed to operate a 60-hour working week, as a step toward achieving the 40-hour week demanded by the code.

In 2011, the retailer terminated business with 19 suppliers, eight for failing to comply with IWAY and 11 for other non-compliance issues. The previous year, it ended deals with 27 vendors. It carried out 993 audits in 2011, with 711 of those unannounced. IKEA also intends to extend the implementation of the IWAY code. In 2012 providers of cleaning, waste management and security services at IKEA retail-stores will have to sign up to the code of conduct. All its global food vendors have also now been confirmed as compliant. The retailer also plans to roll out its ‘trust line’ – where suppliers can seek advice or report on unethical behaviour – to all suppliers worldwide by the end of September 2012.16

14 Direct extract from: Hultman, Jens; Hertz, Susanne; Johnsen, Rhona; Johnsen, Thomas; “Global Sourcing Development at IKEA: A Case Study”, conference paper, 25th IMP Conference, 2009.
15 Direct extract from: “Building a Sustainable Supply Chain”, www.thetimes100.co.uk.
To support sustainable partnerships with suppliers, IKEA works with other organisations. In 2000 IKEA formed a partnership with UNICEF to work on a community programme in Northern India. The aim of the work was to prevent child labour by raising awareness and addressing the root causes. IKEA has also formed a partnership with the World Wildlife Fund (WWF).

IKEA and WWF have committed themselves to promoting the sustainable use of natural resources. This helps to ensure that forests can be used both now and in the future. For example, IKEA and WWF actions have led to:

- a series of training courses for people in Russia, Bulgaria, Romania and China on responsible forest management
- the development of forestry plans in China
- demonstrations to managers in Latvia on the benefits of responsible forestry.

All these projects show IKEA’s commitment to supporting sustainable practices.\(^\text{17}\)

\(^\text{17}\) Direct extract from: “Building a Sustainable Supply Chain”, www.thetimes100.co.uk.
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