White Paper: Logistics in 2020

The future is closer than you think

March 2013
Today, 2020 seems a relatively long way in the future. Although it’s a date that features in our longer-term plans, it isn’t close enough for most of us to envisage precisely what we'll be doing, or translating strategic aims and high-level objectives into tactical activities. It is now over five years from the start of the global economic downturn, a period in which the world has experienced a series of interdependent regional economic crises. Following a long period of debt-powered prosperity and growth in the 1990s and 2000s, established western economies have endured an extended ‘hangover’ after the affluent early years of the new millennium.

Diminishing household incomes and consumer spending power are reflected in the cuts businesses have been forced to make in order to reduce costs and remain profitable (or in some cases minimize losses). Some companies have chosen to take their logistics in-house, particularly in the hi-tech/electronics sectors, whilst others have moved to outsourcing logistics for greater flexibility and cost control.

And due to globalization the effects of the downturn have been felt almost everywhere. Whilst many regions have now exited recession, others (in particular in the Eurozone) continue to feel its direct effects whilst even those that are well on the way to recovery still continue to feel the pinch through reduced demand from Europe and North America. Even many of the high growth emerging markets have tended to see growth level off closer to single digit figures.

The worldwide impact of the prolonged downturn means that the global logistics industry has been particularly hard hit. Subdued consumer demand and retail sales have translated to lower production levels and consequently lower shipping volumes, driving permanent changes to the landscape and dynamics of the logistics industry.
Looking ahead to 2020

Despite a handful of key economies continuing to falter, the signs of recovery are now evident within the logistics industry and beyond. Transportation rates and margins may remain volatile, reflecting the on-going fluctuations in local retail performance, particularly for air freight, but volumes are stabilizing and road and rail freight in particular are showing an increasing trend. Sea freight volumes overall continue to be affected by over capacity, with slow steaming and fewer routes still common. Merger and acquisition activity levels are buoyant and new partnerships between regional and international LSPs are regularly being announced.

Yet there are a number of challenges ahead. In particular, key operating costs are set to keep increasing. Spiralling fuel costs are a well-documented issue for the logistics industry, particularly for those operating in the Eurozone where government taxes exacerbate the impact of the regular per-barrel oil price increases. And labor costs are increasing the world over; standards of living and average wages are rising significantly in emerging markets whilst in more established western economies, several years of lower birth rates are beginning to create more competition to attract employees. LSPs are therefore seeking out ways of protecting their margins, by leveraging economies of scale through partnerships and networks and taking a bigger share of supply chain profits through expanding the reach of their operations and offering value-added services.

Time to market (speed) and agility to react to changing demand as well as customer service are key and potential differentiators. The modes of transport and sourcing destinations are changing as the customer criteria change, with more near shore and same shoring and more road and rail (versus long sea voyages or high cost air freight) as some supply networks contract in terms of geographic distances.

In Western markets, consumer demand continues to be focused around high-tech goods such as smart phones and tablet computers, with their reach widening to ever younger consumers and further into the business world. Multi-channel retail has firmly taken hold with tech-savvy consumers increasingly shopping around for both variety and price, shopping online and via mobiles as well as continuing to visit physical stores. These consumers expect fast, often free delivery, which puts increasing pressure on the supply chain logistics.

Developing countries, such as China and India, not only remain at the forefront of production for high-tech goods but are also experiencing a growing middle class domestic market for these and other products. There is strong demand, particularly for branded goods that were previously out of the reach of the majority of household budgets. Multi-channel has expanded at a similar rapid rate as these economies, with social change in buying patterns being driven by technology, fast changing fashion/new products, variety and availability, working patterns, traffic congestion and the ability to compare price and convenience. Many consumers still like to touch and feel the goods first, but then price search and buy online from a trusted brand or retailer.

In this whitepaper we take a look into the future, at the key issues affecting road, air, sea and rail freight and warehousing by 2020, and importantly, how the technology that underpins the logistics industry is likely to have changed.
Technology in 2020

Technology is, by its very nature, constantly evolving. By the beginning of the 21st century, businesses in almost every sector were already reliant on increasingly sophisticated telecommunications and IT. By the beginning of the second decade, many western markets could boast a mobile phone in use for every member of the population, and doing business without smart phones and handheld devices would be unthinkable.

Here are some of the key technology developments the logistics industry will be affected by in 2020:

**Generation Z/the post-90s generation** have entered the market, as both consumers and employees. Having grown up using email, social networking and communications technology such as mobile /smart phones, MP3 players, laptops/tablets and games consoles, they have never known a world without them. Adept at switching between multiple platforms, formats and devices, they expect to utilize the technology they are familiar with in the work environment, accelerating the prevalence of Bring Your Own Device (BYOD) in industries heavily reliant on the timely transfer of data, such as logistics. They are uncompromising in their expectations from the retail supply chain. Shopping around online, globally, for the best price and choice, they expect same day or rapid delivery either free or low-cost, with defined time slots, and demand choices on where there goods will be delivered.

**Cloud technology** will be widely adopted, and enabling the sharing and re-use of data more comprehensively than ever before. As the natural progression to a shared physical and financial flow, a shared flow of information and documentation will increasingly exist, improving visibility and efficiency throughout the supply chain. In logistics this brings major benefits, e.g. the streamlining of international customs declarations and improved accuracy of follow-on activity scheduling.

**2020: Sharing Data in the Global Supply Chain**

![Diagram of the supply chain process](image)

Data Shared, Augmented & Passed Onwards Through Entire Supply Chain

The diagram above illustrates the example of goods passing through the supply chain from point of production in, for example China, via a local LSP and fulfilling local and international customs requirements before being transported via a global freight forwarder to Europe. Here they again clear customs before being processed by a local LSP and finally delivered to the customer – a major retailer. Ideally, at each stage the next partner in the supply chain makes use of the previous partner’s data, enriching it, augmenting it and sharing it onwards.
Smart phones have become a commodity in use by everyone from children to the elderly and are used extensively for business and pleasure. Email is now largely a thing of the past - the majority of messages are sent via instant messaging and social media and contain less than 156 characters. Marketing/service providers have adapted their offerings accordingly, and the larger LSPs have issued and regularly update smartphone apps for their supply chain partners.

Touch screens are everywhere – at both home and work - and give a new dimension to the user experience. Businesses with more complex operations, such as multiple languages and currencies, sometimes struggle to keep up with a complete change to touch screen. On the plus side, training requirements and support calls have reduced, due to the intuitiveness of touch screen on the whole.

Road Freight in 2020

Road freight represents a major part of most LSPs’ strategies. Regardless of the importance of other modalities to global logistics, it is almost impossible for the supply chain to keep moving, either domestically or internationally, without using the road network.

Yet LSPs are facing a number of key challenges in keeping the supply chain moving via our increasingly congested roads:

**Fuel prices have kept on rising and rising.** By now, the price per barrel of oil will be on average about $150, with much higher peaks possible (source: International Energy Agency Oil Market Outlook 2011). Energy savings are a major focus for LSPs worldwide, with activities that maximise haulage efficiency, such as groupage/consolidation and participation in logistics networks, more important than ever before.

LSPs continue to experiment with ‘green’ fuels and vehicle innovations, such as longer length trailers and better aerodynamics, with the overall aim of making vehicles more fuel efficient and driving down fuel consumption. Solar panels on the roofs of truck cabs and containers are by now a relatively common sight.

Many regions are by now beginning to see road freight shift to rail over long cross-country routes to minimise fuel costs with the added benefit of reducing CO2 emissions.

**Green logistics:** traffic congestion has certainly not been resigned to history. The mileage tax or ecotax has been implemented in many regions (starting with France in 2013). Trucks incur a surcharge based on average fuel economies, with better than average incurring a lower surcharge/tax.

Carriers are now measured on their CO2-emissions and can use this to differentiate, next to price, quality and speed, with listed companies (both shippers and LSPs) ever mindful of compliance with increasing corporate social responsibility reporting requirements.
Labor shortages: the shortage of drivers and warehouse workers will present a very real challenge to the logistics industry. The international spread of the origin of drivers will grow, increasing complexity in terms of health and safety compliance. Of greatest concern is the forecast increase in share of cost of labor for road transport, which is set to rise by up to 50% by 2025, according to various studies.

Reduced inventories: retailers and manufacturers are increasingly looking to reduce their inventories, minimising their own costs by carrying less stock. LSPs are under pressure to service DCs and stores with smaller, more frequent deliveries. This is driving them to fill loads across business sectors and they are increasingly seeking to enter into collaborative agreements with customers and competitors to maintain margins. Achieving flexibility and agility efficiently has become even more critical.

Parcel shipping: the rapid growth of Internet, shop and collect and catalogue shopping is placing pressure on logistics service providers to not only manage full load and pallet deliveries, but to also manage parcel shipping on behalf of their customers.

Traffic congestion: increasing traffic congestion results in trucks being stuck in traffic jams and losing valuable transport time. In the future, we may see increasing use of live traffic conditions to optimize routes or reroute shipments, and vehicles will be connected to the internet as standard and able to access updates.

4PL: movement towards 4th party logistics providers that do not own any assets but manage the movement of goods through the supply chain on behalf of their customers (single or multimodal).
Air & Sea Freight in 2020

Globalization has meant that air and sea freight play a major role in getting consumer goods – from fruit and vegetables to computer games – on the shelves in stores (online and virtual). Yet both modalities are hard-hit by the sudden changes in volumes created by lower or higher than expected levels of consumer demand that became common following the downturn.

The key issues on the agenda for air and sea freight carriers are summarized on the next page:

- **China is now the largest trade nation**, having overtaken the U.S. as the world’s largest trading nation by 2016, (according to a 2012 forecast HSBC Holdings Plc). Chinese ports and hub-and-spoke networks are of primary importance to global freight forwarders, and shipping schedules are developed around them. China has significantly harmonized its customs rules, which previously varied by port. Countries including China are investing heavily in infrastructure to move products from inland manufacturing sites to the ports.

- **Improved supply chain links with emerging economies** in Latin America, the Middle East and Africa are on the agenda as China leverages its alliances with those regions and increases imports from its trading partners to support its own infrastructure projects. LSPs have begun to gear up for increases in future shipment volumes going the other way. Rising costs are forcing Chinese companies to outsource some low skilled and labour intensive production to lower cost countries.

- **Near shore and on-shoring is once again becoming more popular in some Western countries**. This is largely for speed to market, agility to react to consumer demands and because the economic downturn combined with the rapid development of China is making it cost justifiable (if not cheaper).

- **Increasing fuel costs will continue to affect margins**: In 2004 Air France-KLM spent over 2 billion Euros on fuel. By 2010 this was already tripled to over 6 billion Euros. Carriers have become even more sophisticated at measuring profitability of routes and customers, with unprofitable routes unceremoniously dropped and even sharper increases in rates common where capacity is limited.

- **Mega containers**: by 2014, several 18,000 TEU vessels were due to be operational, forcing a move towards a hub-and-spoke network due to the limited number of ports that can receive these vessels and the need to run as close to full capacity as possible in order to deliver economic running costs. This is leading to shipping lines limiting the number of ports they service.

- Utilization and agility are key factors; speed is increasingly important - operators cannot wait for a full load without missing customers’ delivery due dates. More river and canal barges are under production to service the hub-and-spoke networks, along with more rail links.

- With over capacity in shipping an issue prior to the 18,000 TEU vessels entering the market and pre-recession orders for container ships having previously been surplus to requirements, by 2020 there may well be a highly competitive market, resulting in a weakening in rates.
With road congestion, high fuel prices and fewer ports being serviced by mega-container ships, the (relatively) fuel efficient option of rail freight is set to play a more important role in global logistics going forward.

The key drivers around the expansion in rail freight are summarized below:

- **Rising fuel costs**: with road transport hardest hit by the ongoing increases, rail freight, which whilst less flexible is significantly more fuel efficient, is playing a more important part in logistics strategies.
- **Increased Government funding**: Governments in established and emerging markets have major investments underway and planned in rail. December 2012 saw the opening of a 1,428 mile rail line linking Beijing to Guangzhou in only 8 hours, the precursor to a planned £248bn investment to complete a 10,000-mile network by 2020, with four main lines running east to west and four from north to south.
- **Speed is imperative**: road networks are increasingly unreliable, with congestion common and a lack of direct routes in some areas.
- **Long distance**: To counter this, LSPs are looking to rail freight to cover long distances cross-country, for example taking goods from China to Europe, as infrastructures in former Soviet countries reap the benefits of major investment. Panalpina recently boosted its fast-growing less-than-container load Asia-Europe network with the launch of three services from China and Singapore to Hungary, the Czech Republic and Austria. This offers shippers a lower cost than airfreight and faster service than sea cargo.
- **Green Logistics**: more stringent regulation and reporting requirements on both emissions and measures taken to reduce environmental impact are pushing retailers, manufacturers and LSPs to utilize rail freight for larger portions of journeys due to better fuel economy.
- **Hub-and-spoke logistics networks**: the evolving nature of global trade, with new ports in emerging markets growing rapidly in commercial importance, along with the now prevalence of mega-container ships and larger cargo planes has prompted a rise in hub-and-spoke networks for global shipments. Rail is playing an increasingly important role in getting goods from major hub ports to their final destination. There is increasing focus on rail terminals, often multimodal, to enable a service feeder concept. The challenge for the expansion of rail in Europe is the need for priority of freight on rail where governments have focused on the vote winner of prioritizing passenger transport, with rail freight normally moving on the same tracks in time windows during night.
Warehousing in 2020

At the heart of the logistics industry is warehousing. Often dismissed as the low-tech, low-innovation ‘workhorse’ of the supply chain, warehousing is in fact the area most pivotal in enabling the logistics industry to keep up with the fast pace of change.

The key issues on the agenda around warehousing for LSPs are summarized below:

- **Optimizing the flow of goods throughout the whole supply chain** remains a critical concern, with LSPs continuing to favor maintaining storage and value-added logistics (VAL) facilities that are located close to the main regional sea ports and rail terminals. Automated high bay racking systems to utilize space and improve efficiency will become more and more common.

- **Goods will by now be routinely brought closer to their final destination;** instead of one enormous regional distribution centre, there are multiple local DCs, served by more frequent deliveries. Supply chain network planning will become increasingly important, as will days coverage planning of inventory to ensure the right stock is held at each location to maximize availability and optimize replenishment cycles while minimizing cash tied up.

- **Process adjustments are increasingly influenced by eCommerce** and the need for flexibility to fulfil customer demand for choice in terms of product and delivery timescale and location. A relatively simple standard process for a warehouse used to be Pallets or Containers in, Parcels out, Returns in.

  - With value-added logistics increasingly common, goods may move from one area of the warehouse to the other, via labelling/packaging, and may never touch the retailer that sold them where orders are fulfilled via direct despatch.

  - In the early days of multi-channel, e-commerce inventory was sometimes kept separate from normal distribution inventory. To leverage efficiency it will be increasingly important when optimizing logistics that all unallocated inventory is pooled and visible for order fulfilment.

- **Cross-docking;** increasing use of cross-docking to reduce inventory holding costs at different locations and to reduce trucks running with partial loads.

Role of IT in 2020

Key areas where IT will support logistics companies in achieving success in 2020:

- **Data-sharing:** now more than ever before, information is power. The electronic exchange of information (including documentation) and financial data with supply chain partners, including regulatory bodies, will be becoming mandatory in many regions by 2020.
Better utilization of resource; via granular cost allocation and detailed efficiency analysis by route, modality, carrier and type of goods.

CO2 reporting compliance; impossible to achieve without effective allocation, tracking and measurement of costs and resources down to individual shipment level.

React to traffic conditions; linking of Trade Management Systems and Transportation Management Systems to live traffic conditions with process flows and automation that can influence route planning in sufficient time to divert.

Track and trace visibility; vision is end-to-end visibility of the supply chain from factory to the end customer or consumer.

Inventory management; first by minimizing the inventory required in each location to meet customer demand and secondly by optimizing every last cubic centimetre of warehouse space, with agile systems that enable rapid put-away, selection and processing, as well as integration to warehouse equipment such as forklifts, high bay racking systems, etc.

Mobility; systems must be quick and easy to rollout, with flexible set-up and configuration, to cope with new customers, new routes, new regions, partnerships and alliances, mergers and acquisitions.

Standards and interoperability; increasingly connected supply chains to enable the sharing of information with customers’ and subcontractors’ systems as well as connections to industry Hubs such as INTTRA and TRAXXON, and traffic information sites.

Streamlining of cross-border and compliance processes; multi-country customs, AES submissions, hazardous goods checking, denied party screening and other regulatory compliance.

Summary

The period to 2020 will see the balance of global trade continue to shift away from the traditionally dominant West towards the East. Emerging markets such as China, India and Russia are being matched by Middle Eastern and North African nations that are frenetically expanding and improving their infrastructures to keep pace with demand for both imports and exports.
Through direct investment from their own governments and increased trading co-operation with one another, emerging markets are overcoming major challenges including climate, terrain, long distances between densely populated areas and the availability (or lack) of local labor to build new roads, railways, ports and airports. These infrastructure developments demonstrate the drive and commitment of emerging markets to taking centre stage in the global marketplace of the future.

This expansion in the number of countries that are major players in global trade suggests a more pivotal future role for the logistics industry, with infrastructure development increasingly designed with the supply chain in mind. Logistics companies are increasingly driving supply chain strategies, as developed countries rely on them to fulfil consumer demand and developing countries seek their assistance in establishing robust export and internal distribution flows.

Going forward, LSPs will actively seek to offset increases in operating costs by taking advantage of their expanded role in global trade to take a bigger share of supply chain profits, by working more closely with their customers and with their supply chain partners. As business models evolve, the boundaries between retailer, supplier and LSP will become increasingly blurred.

Working in partnership with their customers, LSPs will continue to expand their range of outsourced services – from taking complete responsibility for their customers’ logistics right down to offering a menu of services at a much more granular level. They will differentiate through a much broader offering, including value-added services (e.g. light assembly, kitting, packaging, labelling, repacking, quality checking, local market customization) and delivering superior customer service. Together with their supply chain partners, they will continue to leverage economies of scale by working in partnership on some routes despite competing on others. They will participate in networks, which will expand to cover more modalities, and beyond close regional boundaries.

Environmental issues will rise in prominence for LSPs, as countries across the world start to implement and enforce long-talked about measures to reduce the environmental impact of fossil fuels via transportation, and enforce compliance through regulation and in some cases taxation. Environmental reporting will become a statutory requirement, driving the logistics industry to improve visibility of data down to shipment level.

As ever, the greatest certainty for 2020 and beyond is that it will involve a great deal of change. Some of this change is foreseeable - the shift in global trade from West to East. Some less so, such as the impact of civil unrest and political instability which threatens to disrupt even the best laid plans. LSPs need to stay ahead of the curve and be ready to adapt their strategies, structures and operations to future-proof their businesses.

Technology will remain an essential enabler for LSPs when deployed flexibly, with the global ‘big picture’ in mind.
Technology will also be a driver of change and open up new business models and streamline processes.
Technology can also be an inhibitor, where investment fails to keep pace with industry and technological developments. Those that don’t have good business critical systems in place today may lose out or struggle to catch up.
About Kewill

Kewill’s Transport Management, Warehouse Management, Customs Compliance and Freight Forwarding software delivers end-to-end global logistics, enabling LSPs and enterprises to manage the movement of goods and information domestically and across the globe.

Our logistics solution suite empowers LSPs to: lower logistics and shipping costs, gain better control and visibility & maximize compliance.

Established in 1972, Kewill has over 7,000 customers around the world including Crane Worldwide, DHL, Hankyu Hanshin, ITG Global Logistics, K-Line Logistics, MOL Logistics, Raben Group, VAT Logistics, UPS and TNT.

For further information please contact us at:

We have offices in 9 countries worldwide. Visit our website to contact a specific office, or alternatively, use the email addresses below for your respective region:

- EMEA: info-eu@kewill.com
- Asia: info-apac@kewill.com
- USA: info-usa@kewill.com
- Website: www.kewill.com
- Blog: www.kewill.com/logistics_blog