

Logistics and ICT 4.0 / Digitalization



Introduction

The last decades transportation, supply chain management, warehousing are more and more depending on software. Efficiency has always been important, but nowadays visibility, speed and agility are also very important. Visibility data intelligence is a necessity and a key tool to overcoming the increasing complexity and challenges industries are facing (EFT, Eye for transport). For instance the influence of e-commerce.

In this white paper, we give an overview of the most important development for the next five years. Developments affecting road, air, sea and rail, freight and warehousing, and how technology is an indispensable part of that.

Technology

Developments in technology are going fast. Industries and consumers are doing business with smart phones and other handheld devices.

According to Kewill, the post-90s generation have entered the market, as both consumers and employees. Having grown up using email, social networking and communication technology such as mobile/smart phones, laptops/tablets and games consoles, they are very familiar with them. Adept at switching between multiple platform, formats and BYOD.

There expectations are high regarding the retail supply chain. Shopping online, globally fort the best price and choice, this generation expect same day or rapid delivery either free or low cost, with defined time slots, and demand choices where there goods will be delivered.

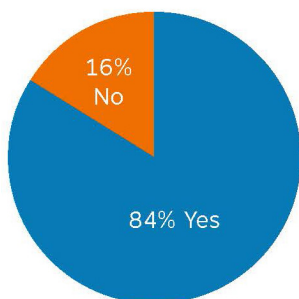
Also cloud technology will be widely adopted and enabling the sharing and re-use of data more comprehensively than ever before. A shared flow of information and documentation will increasingly exist, improving visibility and efficiency throughout the supply chain. In logistics this bring major benefits, e.g. the streamlining of international customs declarations and improving accuracy or follow-on activity scheduling.

Data as a Service (DaaS) will become more and more a reality. Local service providers (LSPs) have begun to exchange data as they previously did with other assets such as staff, trucks etc, improving efficiency and reducing costs.

Timeliness of Information is the number one challenge in the supply chain today and so increasing visibility is a top priority for those companies who are responsible for the movement of goods.

Over 80% of the companies who already deployed operation visibility solutions are looking for deploy more solutions in the future (EFT, 2014). They expect that M2M technologies will overtake RFID and barcodes as an operational visibility information gathering tool.

Do currently use operational visibility technologies



EFT, 2014

Smart phones are a commodity in use from children to the elderly and are used extensively for business and pleasure. Email will become a thing of the past. Instead people are using instant messaging and social media. Marketing/service providers have adapted their offerings accordingly and the larger LSPs have issued and regularly update smartphones apps for their supply chain partners.

Touch screens are everywhere and give a new dimension to the user experience (Kewill, 2013)

Road, air and sea

As we look to the separate development we see in the important road network for the global logistics some major challenges. LSPs will continue to experiment with 'green' fuels and vehicle innovations. For instance the [European Truck Platooning Challenge](#). Participants where MAN (München), Daimler (Stuttgart), Scania (Stockholm), Volvo (Göteborg), Iveco (Brussel) and DAF (Westerloo).

Other major developments for the road network are the increase importance of green logistics, labor shortages, reducing inventories, parcel shipping (because of the rapid growth of internet) and traffic congestion. Globalization means that air and sea freight play important role in getting consumer goods on the shelves in stores (online and virtual).

The key issues for air and sea logistics are the fact that China is now the largest trade nation. The Chinese ports and hub-and-spoke networks are of primary importance to global freight forwarders. Countries including China are investing heavily in infrastructures to move products from inland manufacturing sites to the ports.

Near shoring and on-shoring is once again becoming more popular in some Western countries. This is largely for speed to market and agility to react to consumer demands. Track and trace is indispensable for supply chain visibility and performance measurement, as service levels become stricter and more directly linked to remuneration. The key drivers around the expansion in rail freight are the increased Government funding in China. Speed is imperative because road networks are not always reliable with congestions.

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 promoted a rise in hub-and-spoke networks for global shipment. Rail is playing an important role in getting goods from major hub ports to their final destination.

Warehousing 2020

Warehousing in 2020 is in fact the area most pivotal in enabling the logistics industry to keep up with the fast pace of change.

For warehousing optimizing the flow of goods throughout the whole supply 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 seaports and rail terminals. Automated high bay racking systems to utilize space and improve efficiency will become more and more common.

Instead of one enormous regional distribution center there are multiple local DC's, served by more frequent deliveries. Supply chain network planning will become increasingly important, as will days covering planning to 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 fulfill customer demand for choice in terms of products and delivery timescale and location. And also an increasing use of cross-docking to reduce inventory holding costs at different locations and to reduce trucks running with partial loads.

ICT will support logistics companies in the following ways (Kelwill, 2013):

- **Data-sharing;** now more than ever before, information is value. The electronic exchange of information and financial data with supply chain partners, including regulatory bodies, will be mandatory in many regions.
- **Strategic Supply Chain** planning for simulating network design and sourcing decisions.
- **BYOD and the effective utilization of platform** – neutral apps (for example delivery tracking by courier) require increasing levels of collaborating between IT systems, both internal and external, and a bigger picture approach to policies.
- **Better planning on multimodal transportation;** to meet both green and efficiency targets and handle hub-and-spoke networks. Estimated breakdowns of potential routes will be required.
- **CO2 reporting compliance** is impossible to achieve without effective allocation, tracking and measurement of costs and resources down to individual shipment level.
- **Track and trace visibility** is end to end; from factory to the end customer.
- **Inventory management;** First by minimizing the inventory required in each location to meet customer demand and secondly by optimizing every last cubic centimeter 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 roll-out, with flexible set-up and configuration, to cope with new customers, new routes, new regions, partnerships and alliances and M&A.
- **Standards and interoperability;** This means increasingly connected supply chains to enable the sharing of information with customers' and subcontractor's systems as well as connections to industry hubs such as INTTRA and TRAXXON and traffic information sites.
- **Streamlining of cross-border and compliances processes**

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Joachim Leuck is a leader in the executive search industry, having built his search career on a solid foundation in management and strategy consulting. He is adept at recruiting talent for a range of senior management roles, including C-level and functional leadership. Joachim lends his expertise to the Industrial and Technology Practice Groups, adding specialised knowledge of supply chain/ logistics and in consumer goods and retail.

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