

Excellence. Simply Delivered

DHL adds digital logic to logistics



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Efficiency, speed, and timing are the top priorities in logistics. With more than 350,000 employees operating in 220 countries and territories, DHL leads the world in logistics. Dr. Markus Voss, CIO and COO of DHL Supply Chain, explains how digital transformation can forge processes that will help the freight giant continue to deliver on its slogan: “Excellence. Simply Delivered.”

By Linda Xu



Digital Darwinism

In 2014, Deutsche Post DHL announced its plan for the coming years, Strategy 2020: Focus. Connect. Grow, which includes expanding its logistics services into the world’s emerging markets and maximizing returns from the global eCommerce boom. “Digitalization is the key theme for us for the Strategy 2020,” says Voss. “It’s going to have a profound impact on us and everyone else’s lives because logistics is an essential part of life.”

The digitalization the physical world won’t come without threats to enterprises. And those that want to prosper need to act now: The World Economic Forum (WEF) reports that US\$1.5 trillion of value is at stake for logistics players, while a further US\$2.4 trillion



worth of social benefits will be generated from digital transformation from now until 2025.

Even established companies can't afford to neglect digital transformation. Voss offers some sobering statistics, "Look at the Fortune 500 companies, the biggest companies in the world in the year 2000: Half of those companies have vanished...Their business models have completely been taken over by digital business models." He believes that competition is cut-throat, "It's a world of digital Darwinism out there. If we don't want to lose out, we have to constantly put new technology-enabled services out into the market."

Legacy inefficiency

Logistics may not be seen as cutting-edge to many,

but sweeping changes are descending on the supply chain. The WEF holds that the logistics industry is woefully inefficient in many areas; for example, 50 percent of trucks are empty on return journeys, an unnecessary burden on the environment as well as bad for a company's bottom-line. Voss explains, "We have a number of examples of introducing drones and robots. They essentially do the same thing as we do right now, but they just do it faster, work collaboratively with our workers, and help drive up efficiency by 10 to 15 percent."

New business models underpinned by digital technologies plus targets to reduce cost, create solutions, and offer value-added services are driving digital transformation. According to Voss, "Digitalization means new business models...new

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ways of commercializing and driving something that used to be pure logistics, and offering new services.”

AR, VR, and IoT

DHL Supply Chain is one of the first companies to widely apply augmented reality and virtual reality to its daily operations. With a successful AR trial in the Netherlands in 2014, DHL Supply Chain has rolled out the next phase of its Vision Picking Program in the US and Europe. Pickers are equipped with smart glasses that visually display where each picked item needs to be placed on the trolley. Vision Picking enables hands-free orders at a faster pace and lower error rates. “The feedback is just phenomenal. I've just been at one of the warehouses. The workers' glasses were on maintenance. One of our staff was literally crying, 'Give me my glasses back.' So that's very encouraging for us,” recalls Voss. “We believe this program is a game-changer in how we run our supply chain operations and deliver added value to our customers.”

DHL Supply Chain is applying IoT to its warehousing operations to optimize efficiency and make work

safer. “By 2020, there will be 50 billion connected devices. And we need to trace the goods that we're exporting through the supply chain with a digital mirror. IoT enables us to optimize the supply chain,” says Voss.

He gives a specific example of yard management in car manufacturing, which requires manufactured cars to be sequenced at the door. “There are hundreds of doors, literally next to each other where trucks need to arrive. This is a problem to organize — telling the right driver when to go to which door,” Voss explains. While not a complex operation, it's extremely error-prone. “What we've done with Huawei is use their NB-IoT technology to equip all doors with a sensor that tells us if the door is currently empty.” All drivers have a mobile app that tells them when and where to go, which Voss says “has reduced the waiting time of drivers by 50 percent and taken all errors out of the process.”

Socially responsible

According to the WEF, logistics produces 13 percent of all global emissions. In August, DHL announced the ambitious plan of reducing its

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logistics emissions to zero by 2050. One pilot project that’s already in play is deploying electric vehicles for last-mile delivery, or more accurately, over a 70-km radius. However, the type of vehicle DHL needed wasn’t available in the market. So, it partnered with the University of Aachen and now, Voss reports, “We have about 3,000 electric vehicles on the roads. We intend to electrify our entire fleet, and we’re even selling these vehicles to our partners.”

Powered by 30-kW asynchronous electric motors fed by lithium-ion battery packs, the vans have a top speed of 80 km/h and an in-service range of 50 to 80 km between charges, depending on load mass and driving conditions. They can carry up to 650 kg at a time, and weigh about 1,500 kg empty.

DHL is on the road – and in the sky – to making its operations greener, faster, and smoother than ever before. [www](#)

