

## Expert opinion

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### What will the logistics warehouse look like a few years from now?

By Jean-Yves Costa, Deputy Manager of Logistics Solutions at Hardis Group.

*Which technologies will be heavily integrated into warehouses in the future? Some trends are already taking shape such as robotization, automation, artificial intelligence and connected warehouses. It is, however, difficult to imagine that all warehouses will look alike in the future due to the diverse range and ever-changing specific requirements in each sector, types of logistics flows and customer expectations.*

In an age of digital transformation, connected devices, real time, pressure on margins and international communications as well as sustainable development and an awareness of the environmental and societal impacts of companies' activities, it is difficult to imagine a single warehouse of the future. However, there do seem to be some pointers as to what the future will bring.

#### **Well-considered robotization**

Like many sectors, logistics has not escaped the tendency to increasingly automate certain tasks. However, the degree of mechanization and robotization of warehouses varies from one sector to another or from one activity to another within the same organization. Given the level of investment required, businesses do not undertake a complete automation project unless the benefit-cost ratio (quality of service, productivity and competitiveness gains, change agility) can fully justify it.

In most cases, they try to automate and improve the ergonomics of the workstation to increase productivity, make work easier (loads carried, movement around the warehouse, etc.) and limit repetitive and/or low-value-added tasks for operators. The development of cobotics (or collaborative robotics) means that robots and operators can now work together. Repetitive, laborious tasks are entrusted to robots, leaving operators free to perform higher-value-added tasks.

#### **Transforming jobs within the warehouse**

Contrary to some highly pessimistic views, logistics jobs will not all be replaced by robots. This is firstly because numerous operations in the warehouse still require human intervention. Secondly, logistics need to be considered on a global scale: while western businesses are automating their processes to remain competitive, in emerging markets, where labor costs are lower, processes are still managed manually. Finally, because digital solutions and cutting-edge technologies which are increasingly integrated into warehouses are likely to attract younger generations, giving logistics jobs a second wind and boosting their image.

**Connected warehouses, smart buildings and smart data**

As industrial buildings with numerous co-existing fixed and mobile infrastructures, warehouses will need to embrace data intelligence and artificial intelligence. The enormous volume of data produced by connected equipment - hardware and software - in the warehouse (trucks, racks, conveyors, energy sensors, drones, etc.) is still largely underexploited. It is a safe bet that in the future, new technological platforms will be able to process, analyze and use this data to set up solutions for predictive maintenance, dynamic resource allocation, fault correction and process optimization using machine learning.

Warehouses will also be increasingly connected with the outside and their ecosystem (other warehouses, stores, carriers, etc.) in real time. This trend, which has already started, is expected to increase to improve load and stock distribution to all channels and optimize product availability and delivery while reducing operating costs and the supply chain's carbon footprint.

**Warehouses supporting commerce and its changes**

It is not out of the question either that 3D printing will dramatically change the organization of the supply chain with on-demand, just-in-time production and by bringing factories and warehouses closer together to reduce storage, transport and the energy footprint with their associated costs.

In any event, warehouses of the future will not be molded on a single, one-size-fits-all model. A luxury brand will continue to manage its warehouse differently from an e-commerce giant and a local agri-food business will not set up the same logistics processes as a global industrial supplier.

The warehouse of the future is sure to be smart but it will continue to support commerce. Its future therefore depends on changes in customer demand and consumption methods. Can we really anticipate what these will be over the next ten years or more? The increasing interest in responsible consumption and environmental issues will reshuffle some cards, affecting the logistics organizations and warehouses of the future.

**About Hardis Group**

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Hardis Group is a consultancy firm, digital services company and independent software vendor, helping its customers to transform their business model, digital value chain and logistics operations. It develops and integrates business, technological and digital solutions tailored to its customers' needs and challenges, improving their competitiveness and operational performance.

Hardis Group has developed expertise in the areas of insurance, distribution, industry and energy, e-health, and logistics services. Today this expertise enables it to offer comprehensive solutions, using an agile approach incorporating co-construction, innovation and continuous improvement.

Since its creation in 1984, the company has built its growth on a pragmatic approach and values of efficiency and firm commitment, to both its 2,500 customers and its 850 employees. In 2016, Hardis Group achieved sales of €83.3 million. As well as its head office in Grenoble, it has five other offices in Lyon, Paris, Lille, Bordeaux and Nantes in France and two subsidiaries in Switzerland and Spain.

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