

Physical internet: rethinking logistics

Sending goods through open channels as easily as information via the internet - that is the vision of the physical internet (PI). It applies the principle of exchange of standardised data packets to material flows in order to make transport logistics more efficient, flexible, and environmentally friendly.



The 4th International Physical Internet Conference which took place last week looked at the steps and solutions required to make this vision come true.

Putting ideas into practice

Since Dr Benoit Montreuil, chair and professor at Georgia Tech, Coca-Cola Material Handling and Distribution Centre, Atlanta, GA, presented his vision of a physical internet, it has evolved from a visionary approach to an international research initiative. And it has influenced the concepts of logistics in industry and trade.

“Hyperconnected“, “synchromodal“, “collaborative“, “modular“ are the buzzwords that are linked to PI. Standardised modular boxes, the cooperation of all parties involved in storage and transport, collaborative planning, and execution of transport, an open concept for the exchange of information and data – these are the basics required to turn PI into reality. And they help optimise the entire supply chain.

In recent years, leading companies have adopted this visionary approach towards a powerful integrated transport system.

The standardisation organisation, GS1 Germany, recently introduced special standardised containers for the supply of goods. This type of container was designed and tested as part of the EU project MODULUSHCA – the first project towards the implementation of the PI, which was coordinated by PTV Group.

Standardised cargo carriers, which allow individual items to be combined onto a single shipment, are the basis for an integrated logistics system at European level. A single system for all parties involved helps coordinate central depots and warehouses and implement an open concept. The test results were presented at the conference.

Clusters 2.0: Get connected!

Marcel Huschebeck, manager logistics research at PTV, is also in charge of the coordination of the new EU project Clusters 2.0, which was presented and discussed at the conference. The workshop focuses on the synchromodal initiative, CargoStream, which aims to develop a platform for the exchange of data between shippers and transport companies.

The platform will combine the shipments so that they can be allocated to transport modes in a synchromodal manner. This demand-oriented approach will also take into account all kinds of restrictions, such as available time slots. CargoStream is an important part of Clusters 2.0, designed to facilitate cooperation between shippers and transport companies at all levels.

The devil is in the detail

Smart geocoding is the basis for all processes across the transport chain. Precise coordinates are a must for precise transport planning. In his presentation, "Smart geocoding for accurate and reliable delivery planning and execution" Dr Michael Nutto, solution director PTV xServer at PTV Group, went into detail about accurate transport planning because it's often the detail that causes the headache.

For example, the postal and delivery address might not be identical. If the barcode contains the postal address instead of the delivery address, which refers to another part of the building or an adjacent building, it will be difficult for the driver to deliver the goods. The routing information is no longer correct. This means the driver must ask for the right delivery address, he might even have to park his vehicle somewhere else and will thus waste valuable time.

PTV's knowledge-based systems can help identify and adjust the precise position and provide the driver with all relevant data in real time, including detailed information, such as a route description to the postroom within the building. Drivers can thus avoid tedious searching and ensure reliable delivery. The company develops intelligent software solutions for transport logistics, traffic planning, and traffic management.

The European transport model, which encompasses all passenger transport and freight movements in Europe, is developed using PTV software.

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