

Modulushca Project presents a Roadmap towards FMCG fully interconnected logistics system

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Modulushca project defined its roadmap to 2030 interconnected FMCG logistics. A roadmap is often described as a plan that matches short and long term objectives with specific technology solutions. However a roadmap can't only be consider as a description of the future but a process and a coordination tool. Indeed, Modulushca roadmap preliminary versions were discussed through several workshops and conferences held in France, Germany, Italy, Netherlands and Spain.

The Physical Internet initiative is based on the idea of a new open global logistics system founded on physical, digital and operational interconnectivity through encapsulation interfaces and protocols. This innovative concept and the dynamic environment that accompanies it brings a unique opportunity to gather the industry around a shared vision.

Nevertheless, the main problem of the current logistics system is a lack of interconnections between its subsystem that has not been strategic designed and engineering specification. For instance, there is a gap of interconnectivity between packaging, pallets and semitrailers which are the key subsystems of the current logistics system for inland transportation. They usually do not fit well with each other due to misfit issues such as incompatible sizes and misaligned structural capabilities. In fact, currently there are as many product specific packaging, as products are in the market, making really difficult to handle, transport and storage them. In addition, these subsystems are also suffering from regionalism issues as exemplified by distinct European vs. North American dimensions for pallets.

This lack of interconnectivity between the subsystems of the current logistics system is illustrated through a misfit jigsaw. The subsystems are interdependent but they don't fit well with each other affecting the quality of the overall system. Thus a new jigsaw ball designed with a coherent interconnected vision is needed. This new ball will take into account all the interfaces between subsystems whilst keeping in mind the full vision of the overall system.

To reach this new vision of a FMCG fully interconnected logistics networks, they set three main milestones from now: 2020, 2030 and 2050. The first milestone is 2020, 6 years from now. In this first step the idea is to design, experiment and adapt interconnection solutions of all dimensions of the Physical Internet. The main goal then is to discover how the system could actually work. The second milestone is 2030. In this phase is intended to define the standards and implement them with the latest technologies available. The last milestone is 2050. It will be the time to spread the idea over the world and deal with specific needs.

Physical Internet is conceived as a system with multiple interlaced facets that needs to be integrated. Actually, there are four interconnectivity dimensions intimately intertwined

through multiple subsystem of the overall logistics system upon which supply chains rely. These dimensions are **Physical, Digital, Operational and Business** Interconnectivity, all of them covered by the Modulushca project.

Physical Interconnectivity

Physical Interconnectivity is a key enabler of interconnected FMCG logistics widespread adoption in Europe. The key mechanisms to achieve interconnected FMCG logistics are standardized modular designed-for-logistics containers, vehicles, handling systems and open facilities.

So the first goal is coming up with standardized unit loads that can be used by all FMCG players. These boxes can encapsulate safely and space efficiently all kind of products. Besides, they have minimal ecological footprint and are cost effective across the industry. This unit loads are known as Physical Internet containers. Modulushca project focus is on M-Boxes that are PI containers specially designed to handling purposes and for being loaded in larger transport. M-Boxes don't need to be palletized as can be composed and handled as a single unit load. The second objective is to develop handling, storage and transportation technologies aimed to efficiently deal with these containers. The last objective is to have logistic facilities such as hubs and open distribution centers designed for interconnected logistics.

Digital Interconnectivity

The digital interconnection will be the link with the M-Boxes enabling to hand over, monitor and decide the path of every M-Box. The information should be communicated as much as possible to ensure accurate real time monitoring and thus appropriate decisions.

The purpose of digital interconnectivity is to transform logistics containers from passive to active objects of the Internet of Things. M-Boxes should be able in the future to report the position, objective (destination, time window, special requirements such as temperature, acceleration and humidity), the link content information and the status at any time to ensure accurate management of the supply network and thus protect the product value until delivery to customer.

The next step will be to connect any object to the Internet, enabling it to communicate not only with us but also with other objects. This is known as machine-to-machine communication. This technology will allow permanent communication in both ways in a near future.

Operations Interconnectivity

Operations Interconnectivity is really the place to grab the benefit all investments made in the other dimensions, like the containers. The main goal is to get a seamless interconnection of operations across logistics services providers.

The path towards operations interconnectivity starts with the interconnection of a few logistics companies. The main differences with the current system will be the openness to new partners, the public protocols and no long-term commitment from the costumers. The next challenge in this dimension will be to deliver not only from the hub to the customer, but also deliver to another hub and start to skip traditional warehouses.

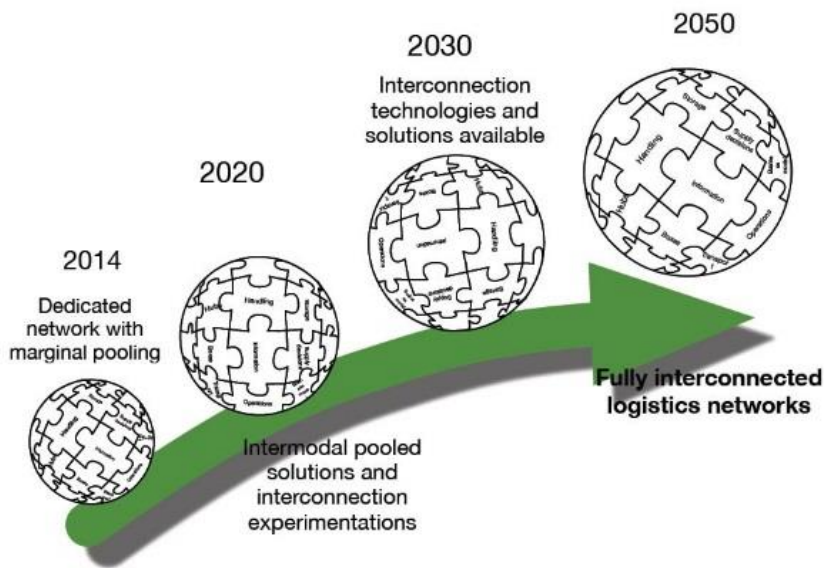
Business Interconnectivity

Finally, interconnected logistics as intended by this roadmap will change drastically the business for all FMCG stakeholders. This is why, beyond physical, digital and operational interconnectivity there is a need for enabling business interconnectivity.

New business models should be designed for all the FMCG players, such as manufacturers, retailers, etailers, hubs, transporters and logistics service providers. Providing clear and sound pricing and revenue models, value proposition and stakeholder incentives, among others.

For more information & videos, please visit: www.modulushca.eu

Picture:



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