

LOGISTICS – NEW SYSTEMS

THE TOOLS FOR A FUTURE PROOF FOOD SYSTEM

FOOD 2030: CIRCULARITY, INNOVATION



A new way of transporting materials from one place to another globally would change the way we understand trade and the acquisition of goods in a rapid market. New logistical breakthroughs have the potential to contribute to more effective supply chains and circular food systems.

SPECIFIC R&I BREAKTHROUGH TOPICS

The physical internet: The physical internet refers to a radically novel way of managing sustainable logistics which could replace unsustainable and inefficient global practices of how physical objects are moved, stored, supplied, and used. It draws inspiration from the digital internet to create a global logistical network with high interconnectivity, with goods enclosed in smart, eco-friendly modular containers, distributed by multi-segmented intermodal transport. Such a smart but complex global system will be challenging to put in place but has large implications for the logistical dimensions of food systems. It requires technological breakthroughs in infrastructure design, container handling and transportation, and supply chain modes, as well as social innovations that transform the practices involved in, for instance, (online) shopping, food delivery and transportation.

Service ‘at the door, at any time’: The development that allows consumers to have food delivered to their door at any time is already transforming our logistical practices. It involves the shift towards online shopping and emerging food delivery services, that deliver meals or food directly from farmers or supermarkets to citizens. It has severe impacts on traditional ways of organising catering, restaurants, and retail services. It presents many different challenges and opportunities for rural and urban areas, for new entrepreneurs and more traditional players (restaurant owners, farmers, supermarkets). It has the potential to support local and more sustainable food supply chains and provides opportunities for consumers and businesses. But it raises questions about the position of vulnerable or marginalised communities, and the market position of smaller companies that have to adopt new technologies and practices rapidly to remain competitive.

EXPECTED IMPACT

New logistical breakthroughs could potentially contribute to the transition towards local supply chains and circular food systems. Such new and high-tech developments could radically change the practices and daily routines of those involved in transportation, catering, retail, restaurants, and food production.

MARKET OPPORTUNITIES / CHALLENGES

- Rapid developments in artificial intelligence and big data analytics provide opportunities to innovate and implement the technological elements of the physical internet. It provides a basis for further development of 'anytime doorstep delivery'.
- Successfully developing the physical internet requires global collective action: Harmonising and transforming legal procedures, contract laws, and protocols, as well as significant investments in renewed infrastructures and technologies, like modular containers, as well as distribution stations and information systems.
- Consumer trends might further enhance the market opportunities for delivery services.
- Radical transformations could be at odds with interests of the incumbent logistics sector and invoke resistance from established players and organisations.
- Breakthroughs in logistics will also affect the way people in the transportation field live and work. They offer entrepreneurial opportunities in an emerging market, but might also negatively affect other people that see their livelihood threatened by such novel practices, like truck drivers and retail workers.
- The Covid-19 pandemic has accelerated developments towards food service delivery, contributing to the capacity of companies (and broader food systems logistics) to transition towards new logistical systems.

EXAMPLE REFERENCES

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ASSOCIATED TRENDS IN FIT4FOOD2030 (URL)

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|---------------------------------------|---------------------------------|
| ○ Urbanisation | ○ Consumer engagement |
| ○ Demographic change | ○ New shopping behaviour |
| ○ Economic globalisation | ○ Physical internet |
| ○ Changing households and food | |

ASSOCIATED CASES IN FIT4FOOD2030 (URL)

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| ○ eFoodChain | ○ Followfish |
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