



## THE PLATFORM ECONOMY AND DIGITIZED FOOD DISTRIBUTION

# Let's talk about the digitalization of food

Global ecological crises threaten the sustainability and well-being of our food systems. Meanwhile, digitalization is increasingly affecting food supply chains. The industry was already in transition when 2020 dawned and the COVID-19 pandemic brought the world to a standstill. The virus fast-forwarded a part of the world to a situation that had previously mainly existed in forecasting scenarios.

Both the pros and cons of the traditional food supply and distribution setups

are now more evident than ever. The convergence of the physical and virtual areas, the possibilities of forming universal interconnections, and the impact of big data and analytics are all challenging the linear supply chain model in the agrifood industry. The current global food system needs to change, and if designed properly, digital food platforms could be one of the key enablers of the transformation.

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### Keep reading to find out

- what the market looks like
- what consumers are thinking
- what's going on with regulation
- what's happening in science and research

See last page  
for a quick  
summary!



**BUSINESS**



**CONSUMER  
BEHAVIOR**



**LEGISLATION**



**SCIENCE &  
RESEARCH**

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### Hello, reader!

You're holding a fact sheet produced by Food Tech Platform, an Allied ICT Finland network orchestrated by the University of Turku. It covers the topic from four different points of view:



**BUSINESS**

Food deliveries, drones and virtual restaurants – prolific or problematic?

In 2019, the value of Finland’s overall grocery store sales was over 17 billion euros. Online grocery stores contributed merely 0.3 % to that figure. Then came the pandemic. In April 2020, online purchasing surged to an all-time-high of all grocery sales. A similar trend can be seen in the United States, where grocery app downloads increased by over 100 percent compared to previous years.<sup>1</sup> However, growing demand put more pressure on online grocery stores and pickup networks. It caused long waits, cancellations and outages across the industry. There is still a lot of room for operational improvement, both concerning customer service and businesswise.

The table below gives you an overview of the different kinds of actors in the field and how they relate to one and other. These actors include online grocery stores, food platforms or multi-sided markets, food delivery platforms and co-operative platforms.

A significant platform player also in the grocery business is the global operator Amazon, which takes a 15 % commission on each sale. Though it is a route to the global market, succeeding on the platform requires

constant optimization from sellers: it’s challenging to stand out among the abundance of supply.<sup>2</sup> According to rumours, Amazon is close to opening up a market specific platform in Sweden.

While shopping food online is on the rise, digital restaurant food delivery services are even more popular. In 2018, Frost & Sullivan already estimated the industry at 82 billion dollars in terms of gross revenue bookings, and this figure is set to more than double itself by 2025.

But despite massive investments and revenues, many food delivery companies struggle with profitability, logistical reliability and product quality. To fix these issues, the industry keeps evolving towards a more digital direction. Virtual restaurants and food delivery drones are just some examples of the fast approaching future.

Some of these prospects will prove to be somewhat problematic for restaurants. American delivery providers typically charge restaurants between 15–30 % on every order they fulfill, which is a big added cost for small players.<sup>3</sup> There are major operational changes to execute and partnerships with delivery companies to figure out.

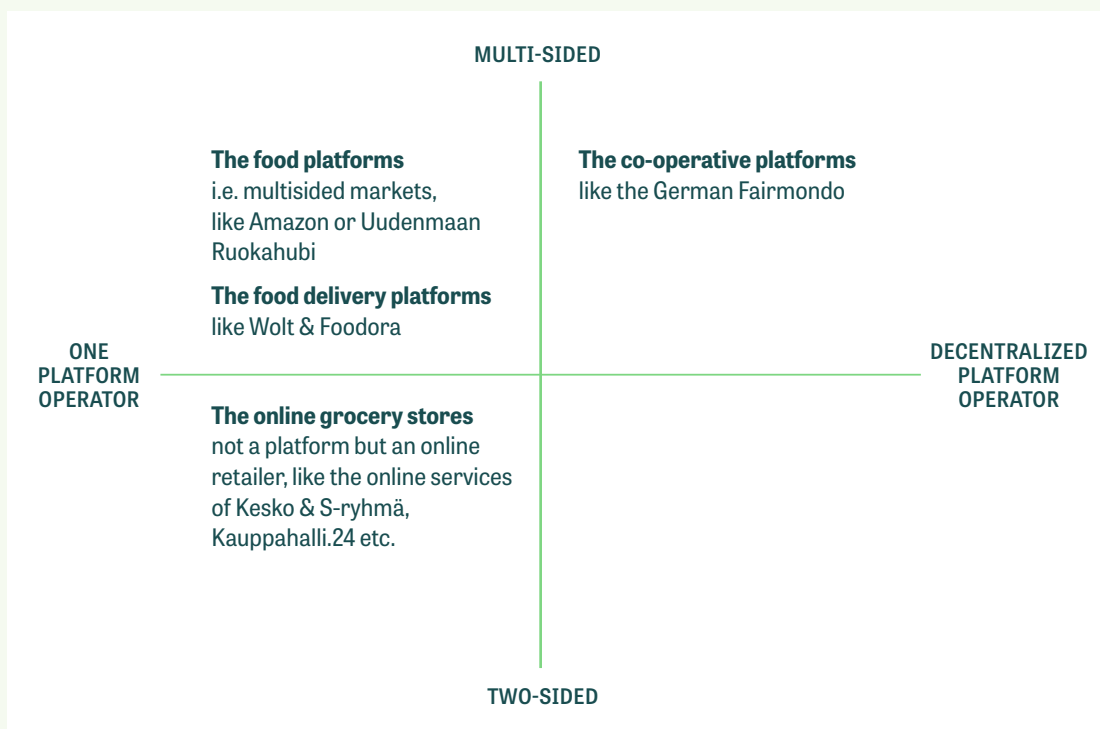
**KEY VOCABULARY**

**Marketplaces** Food and grocery e-commerce platforms, including farm-to-home solutions and grocery store deliveries.

**Virtual restaurants, ghost kitchens, dark kitchens or cloud kitchens** Professional food preparation and cooking facilities set up for delivery-only meals. Food delivery platforms often use them to develop their own set of brands. Some delivery platforms rent other restaurants’ kitchens to use out-of-hours.

**Food hubs** Regional food hubs aggregate, distribute and market foods from food producers within a particular region to different buyers. These platforms facilitate networking, direct selling and buying among farmers, producers, consumers, restaurants, food service operators, wholesale producers and distributors.

**Online buying clubs & co-ops** A group of people that collectively gains direct access to food products and produce directly from farmers and producers. These models are often owned by volunteers. Software has made this process more efficient and easier to scale.



The grocery and meal delivery industry is populated by global giants and rising stars backed up by big money. However, several smaller operators with novel business models and added value have also emerged, including for example, residue batch retailers, subscription meal services, local food hubs and food co-ops.

#### A GLOBAL LOOK AT RESTAURANT FOOD DELIVERY

(2019 data)<sup>4</sup>

**Europe** has over 10 different online food providers. The Dutch company Just Eat has a presence in 8 European countries, and an over 83 % share of the UK market.

**North America** hosts over 10 different online food delivery companies. Just Eat acquired the US market's prominent player Grubhub for \$7.3B in June 2020.<sup>5</sup>

**Asia** accounts for a 55 % share of the global online food delivery market. China alone had over 34 billion dollars worth of food delivery revenues in 2018.



## CONSUMER BEHAVIOR

Digitized food distribution offers both convenience and communality

Speed, convenience and freedom of choice. From a consumer perspective, that's the Holy Trinity and the reason behind the fast growth of the food delivery industry. Customers value online shopping because it multiplies the variety on offer, saves time, reduces effort, isn't limited to usual store hours and offers efficient checkouts.<sup>6</sup> No lines, no hassle.

However, it's important to remember that despite its benefits, online purchasing can be risky. Also, some experiences offered by offline purchasing are missing; crucial ones being interaction with and sensory evaluation of the product.

The pandemic has changed the way we buy food online. However, its long-term effects remain to be seen. According to a recent Finnish consumer survey conducted in April 2020, two thirds of the respondents had ordered food to their homes in the last month. Twenty percent of the respondents ordered food deliveries at least once a week. For Finnish consumers, the delivery price is even more important than the price of the order itself.<sup>7</sup>

Simultaneously a study conducted among Finns in mid-April 2020 indicates that consumers valued their local stores even more than previously and planned to shop in the physical stores in the future.<sup>8</sup> This implies that the popularity of grocery shopping online is not by any means given, despite the spike in demand in the early days of the pandemic.

Digital grocery shopping platforms provide a community building element. Direct contact with small producers and farmers creates an opportunity to "support your local community". Some services (such as the Venner grocery bag in Finland) include social responsibility and create schemes for promoting healthier eating and well-being.

In a nutshell, what previously happened with the digitalization of media and mobility is now happening with food. People can opt for the retailers, farmers and producers that offer new kinds of services and added value – and they are loving it.



## LEGISLATION

### How to regulate self-regulators

As the buying and selling of food through platforms becomes more popular, it is hard for legislation to keep up with emerging issues. In general, it's more complicated for authorities to control digital marketplaces than traditional commerce, since their protocols aren't always adapted to the digital environment.<sup>9</sup> The European Commission hasn't been very dynamic in its decision making regarding platform operators, nor has it followed the rapid pace of technological innovation.

As the platform economy is embedded with elements of self-regulation, many researchers think that a new regulatory approach is necessary. This approach should take into account the technological and self-regulatory character of platform operators. These operators provide the governance mechanisms that digital markets need in order to function.<sup>10</sup>

Due to their operational capacities, access to data and means of influencing user behavior, platform operators can assert control over the production and distribution of goods without the need for corporate form or organisational structures. Operators can automatically enforce regulatory requirements through their algorithms. Community guidelines and reputational systems ensure that platform users remain well behaved and morally conscious.<sup>11</sup>

The platform economy is an emblem of technology and digitalization, but it has a very human core – gig workers, the people who drive us around and bring food to our doors. Their rights continue to be a heated subject of debate. As gig workers are mainly entrepreneurs, freelancers and independent contractors, their occupation is far more precarious than that of a “real” employee.



## SCIENCE & RESEARCH

### 3 supply chain innovations

The digitalization of food is a goldmine for supply chain innovations, that is, innovations occurring in the context of food supply chain processes, technology and network structure. Three examples of innovative ideas, technologies and scientific developments in the field are listed below.

**1. Delivery drones.** Several companies, such as Amazon and Uber Eats, are already testing commercial food delivery drones. This is a necessary next step for the industry, as it has the potential to improve both the speed and safety of the service.

With Uber Eats, the protocol is simple. The restaurant prepares the meal and loads it onto a drone. Tracked and guided by Uber's cloud systems, the drone then flies its cargo to a predetermined drop-off site and notifies

the delivery driver about pickup.

Finland served as a testbed for delivery drones in 2019, when Google tested the delivery technology together with Food Market Herkku.<sup>12</sup>

**2. Blockchain technology.** Blockchain tech (a digital, decentralized ledger of transactions in a value chain, secured with cryptographic signatures) enables food safety and open source ecosystems on future food platforms. It deploys distributed control over shared databases, thus making it almost impossible to falsify information. It therefore improves much needed transparency and trust in food supply networks. Despite regulations, food safety remains a challenge and blockchain technology could play an important role in preventing food fraud.<sup>13</sup>

**3. Agile business models.** Digitalization is paving the way to a world where networking ecosystems take over the conventional linear value chains. Platforms directly broker transactions between different actors that have traditionally been rigidly stuck in linear value chains. With the emergence of the platform economy comes a bunch of new business models and opportunities, especially for small and mid-sized companies.

In the most extreme scenario, the platform model will completely overtake the traditional value chain structure. Local, decentralized, smart and real-time logistics services will replace the traditional, centralized service model based on forecasts made with old data. This shift could benefit smaller companies, as their production capacities have traditionally been too low to serve the mainstream market through traditional market channels.<sup>14</sup>

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THE PLATFORM ECONOMY AND DIGITIZED FOOD DISTRIBUTION

# Let's talk about the digitalization of food

We hope this leaflet has given you some food for thought. Take your time to digest it! But if you're feeling too full, take these bites with you.

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## BUSINESS



From casual meal subscriptions to online food co-ops, the digital food business is blooming. New business models are emerging.

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## CONSUMER BEHAVIOR



So far, speed, convenience and freedom have attracted people to adopt food delivery services. Digitized food chains and platforms add more value to customers, including precise data on food and direct contact with farmers and suppliers.

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## LEGISLATION



Regulation lags behind in many ways from covering the precarious position of gig workers to the platform owners' means of algorithmic control.

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## SCIENCE & RESEARCH



The digitalization of food is a goldmine for supply chain innovations.

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**Let's start a dialogue!**  
Contact the Food Tech Platform Programme Leader Laura Forsman ([laura.forsman@utu.fi](mailto:laura.forsman@utu.fi)) and start something exciting.

**Food Tech Platform Finland** is a food focused research-business network in Finland that brings together companies, startups, science and education communities, and the public sector. Its ambitious aim is to develop a sustainable Food System 2.0. For this purpose, it facilitates the breeding of science-based food innovations and novel business propositions. Food Tech Platform Finland is an Allied ICT Finland powered growth network and is orchestrated by the University of Turku.

