

Expected impacts of Covid19 to online grocery, retail and delivery

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Purpose

- This presentation analyses expected impacts of Covid19 to online grocery, retail and delivery focusing
- We will focus on international examples published recently and have also some insights from Finland



Perceived impacts on supply chains 2020

- Global supply chains, dependencies on industrial logistics and lack of resiliency has been discussed widely during the Covid19 outbreak.
- On a local level – many retailers are struggling due to lockdown situations, an increasing pressure to move local businesses and services toward e-business and delivery based models.
- Traditional retailers such as department stores have failed to move to web based businesses
- New solutions to last mile delivery problem are being innovated and tested in many companies as there is no other solution.



Transition toward online

Traditional players face problems

- Examples from US:
- Neiman Marcus *mulling bankruptcy in order to ease its \$4.3 billion debt load.*
- J.C. Penney *has enough liquidity to get through 2020 even with its stores closed, lately there have been rumblings about possible bankruptcy. It did skip making an interest payment in mid-April.*
- Macy's *more than 700 stores are shuttered. Adding insult to injury, Macy's was pushed out of the S&P 500 Index and Fitch cut its credit rating to junk.*
- Similar experiences all around the world with department stores. However, many of the problems have been around for a while.

April 27, 2020 11:32 AM

Here's the state of play for America's ailing department stores

Those symbols of North America's 20th century consumer culture were already in trouble before the coronavirus outbreak.

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QUARTZ
SLOW YOUR ROLL

Even once Covid-19 is under control, stores may think twice about reopening right away

April 10, 2020
By **Marc Bain**
Fashion reporter

H&M business in China



How H&M's business in China fared during the Covid-19 outbreak

Week	Share of stores open	Sales growth versus 2019
1	100%	16%
4	98%	63%
7	36%	-89%
10	89%	-79%
14	99%	-23%

Quartz | qz.com | Data: Company filings

- H&M a global clothing-retail company quarterly report shows how COVID19 has impacted the operations in China
- A drastic impact on demand
- Stores have been opened and still seeing low demand

Covid19 boosting online sales

- First time online customers entering the market and new categories increasing drastically
- However, as processes are not finetuned, many operations do not make profit
- Grocery is a category growing fast, capacity constrains operations
- US Nielsen/Rakuten data shows increase in several categories from 2019

Alibaba and Amazon borrow furloughed service workers

Cross-industry arrangements ease unemployment pain as pandemic skews labor markets

MOTOKAZU MATSUI, MARIKO HIRANO and HIKARIKO YAZAKI, Nikkei staff writers
MAY 04, 2020 03:05 JST

Best Buy online sales up 250%; furloughing nearly all part-timers

By Marianne Wilson - 04/15/2020



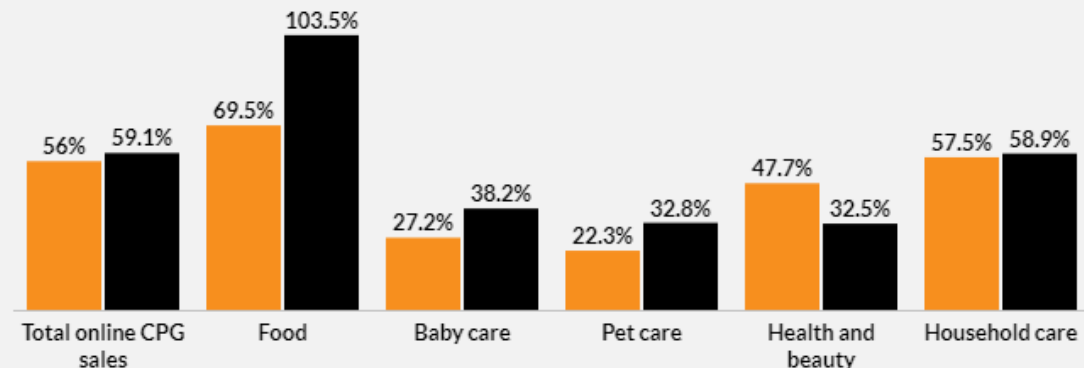
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Best Buy is furloughing about 51,000 employees

Growth in online consumer packaged good sales by category

Year-over-year increase for weeks ending April 18 and April 11

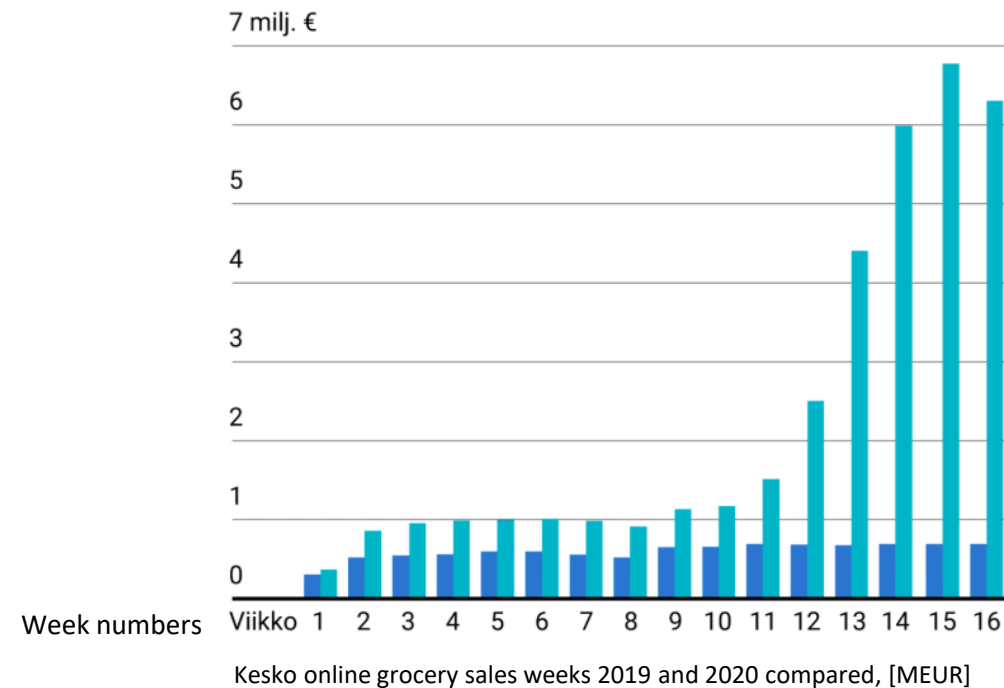
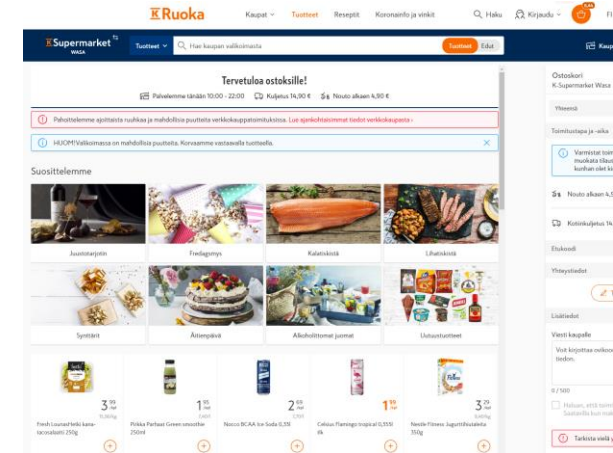


Week ending April 18 Week ending April 11



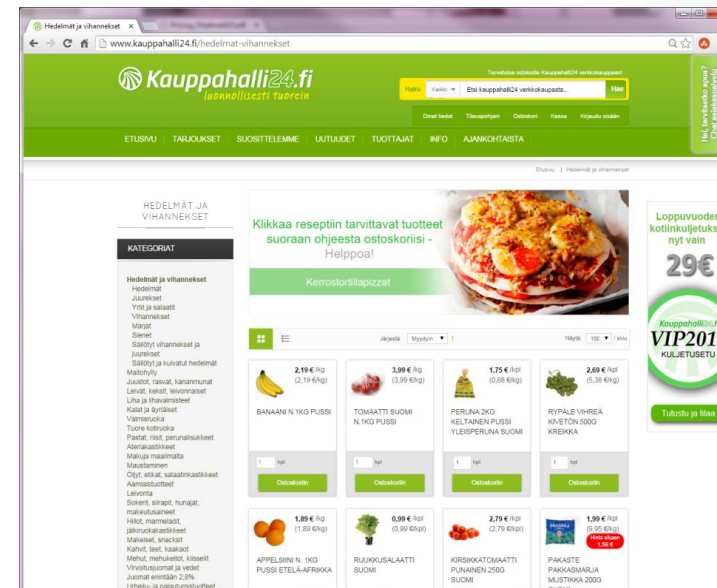
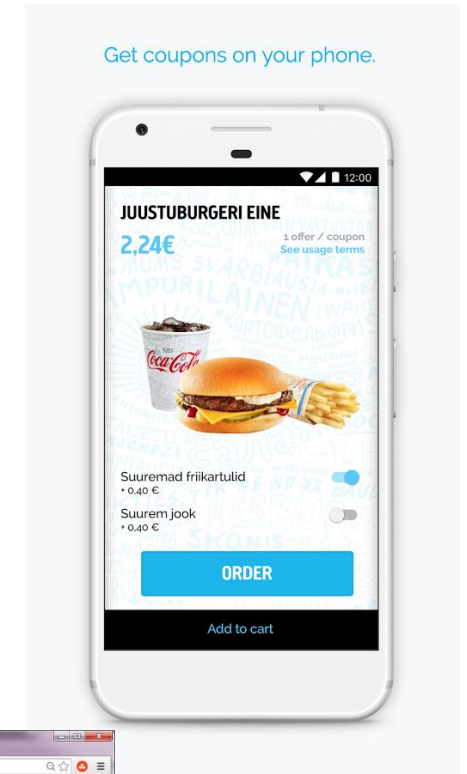
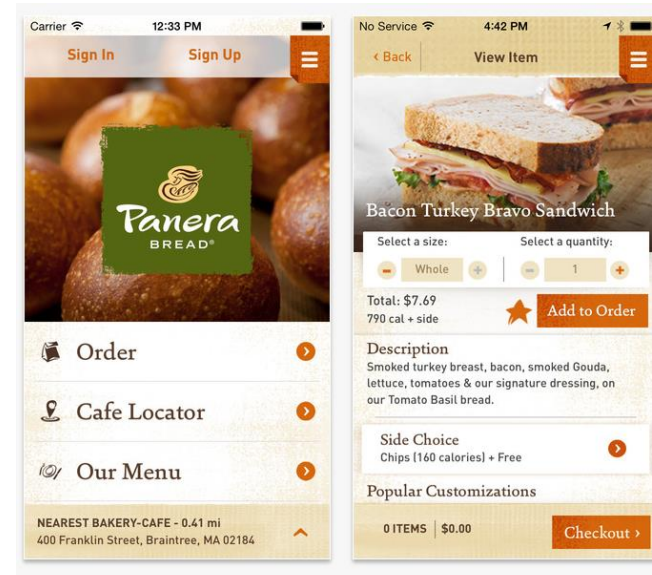
Kesko – online food grocery

- An example of a retailer level perspective for online sales - Kesko, one of the largest retailers in Finland, increasing online grocery sales +800% in 5 weeks
- Online sales has been existing but now consumers are adapting new behavior due to Covid19



Apps linking brands to customers

- Apps and online stores are now the front-end – these are linking consumers, products and process together
- Marketing, retailing and delivery are combined – demand management
- Faster response and new kind of communication possibilities – place order, pickup, feedback
- Managing variety in the supply chain by clustering and creating predefined packages, e.g. grocery bags with recipes.





Why online retailers have not been so successful in the past?

- Consumer adaption has been slow in many areas
- Cost of implementation of e-business and delivery has been high for low margin retailers
- Grocery-retail competition on other issues e.g. cost structure
- Organizational issues – Competition between brick and mortar stores vs. online stores within the same retail group

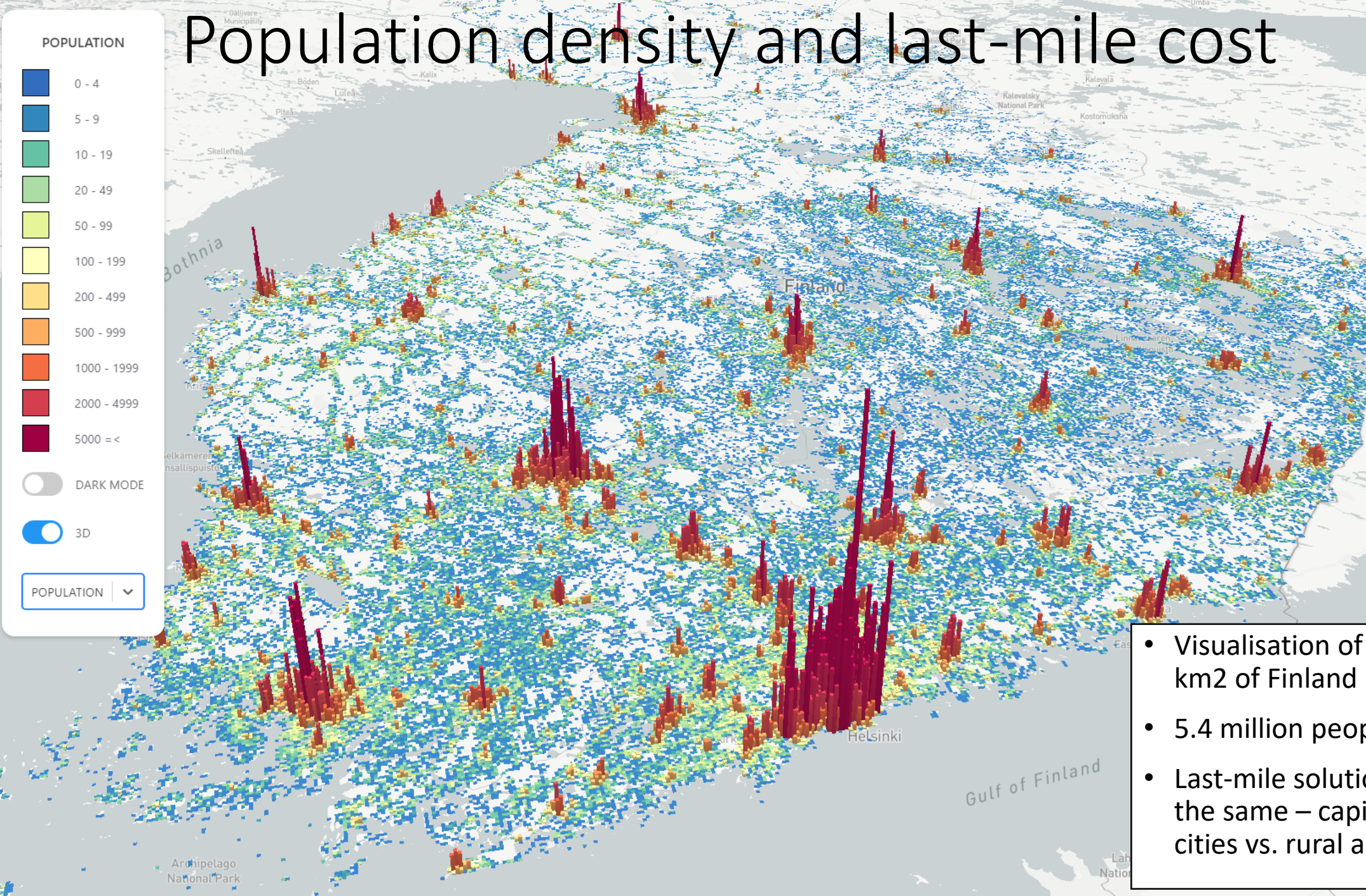
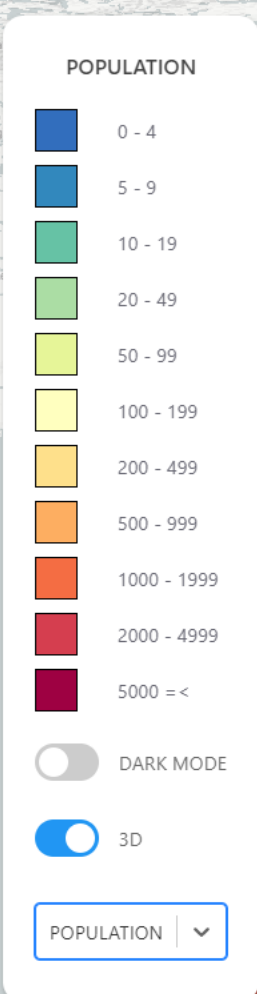
Delivery services

Delivery models



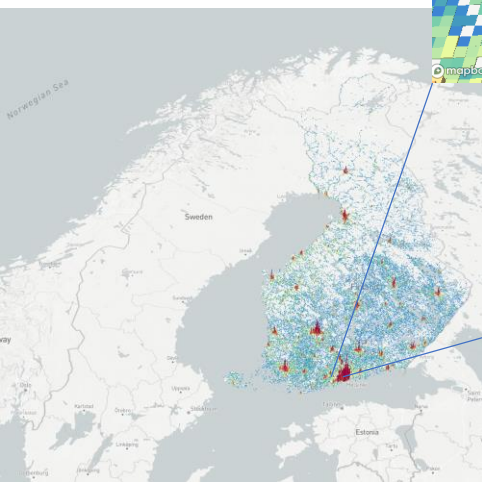
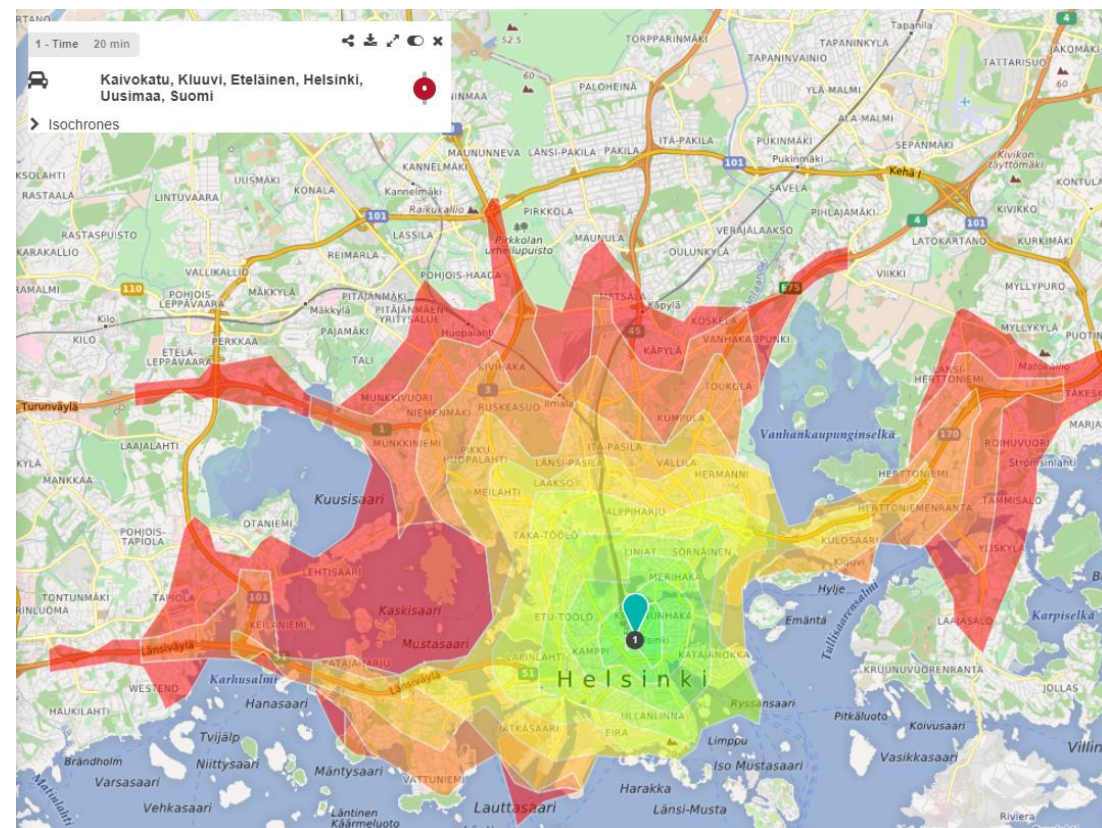
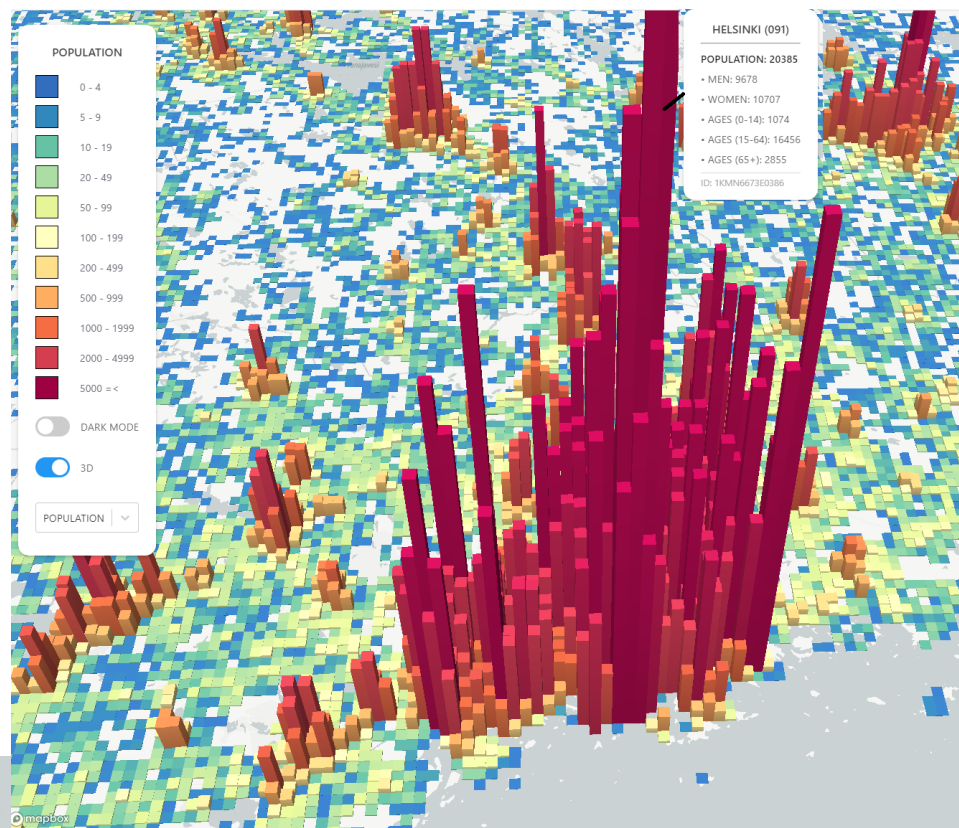
- Managing a cost efficient delivery is challenging
- Transportation infrastructure and technology knowledge are needed
- Points:
 - Existing physical stores
 - Online store, store pickup
 - Online store, local distribution center
 - Online store, home delivery
- Strategies:
 - Home or near home
 - Limited variety
 - Transportation rhythm
 - Proximity

Population density and last-mile cost



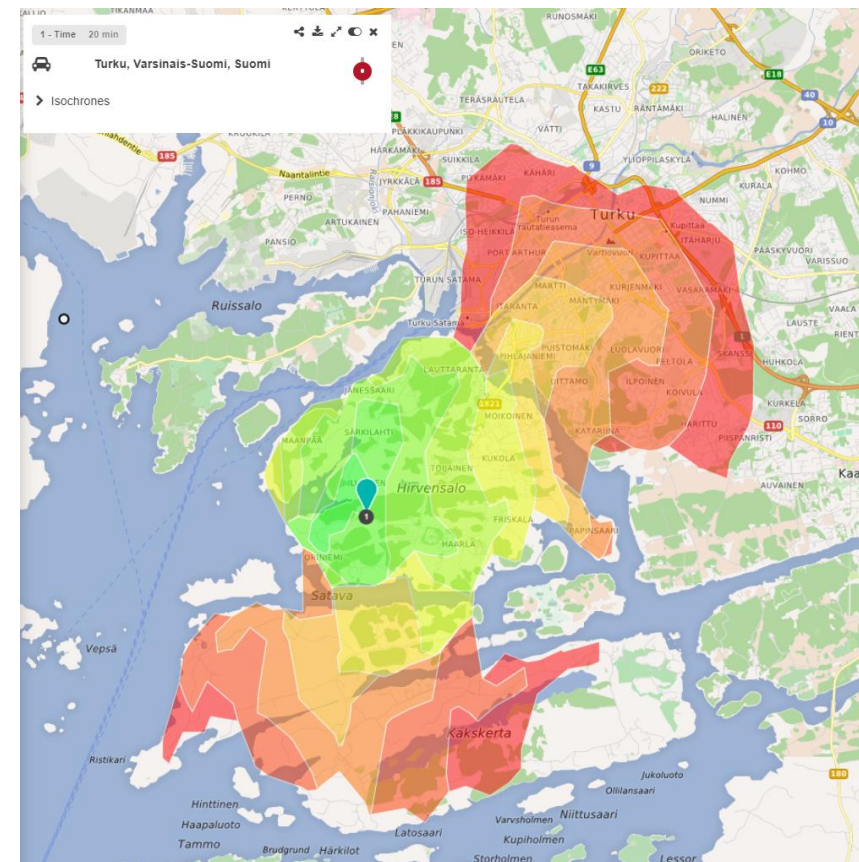
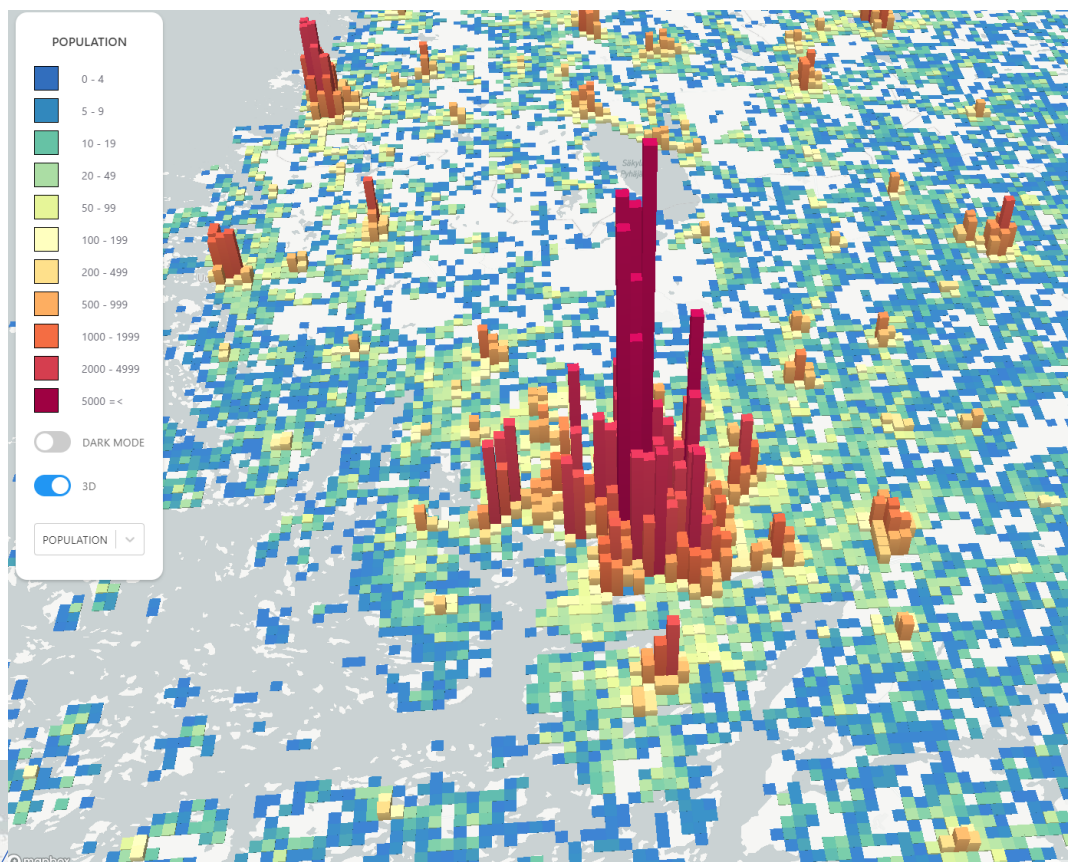
- Visualisation of each inhabited km2 of Finland
- 5.4 million people
- Last-mile solutions cannot be the same – capital area, larger cities vs. rural areas

City example: Helsinki



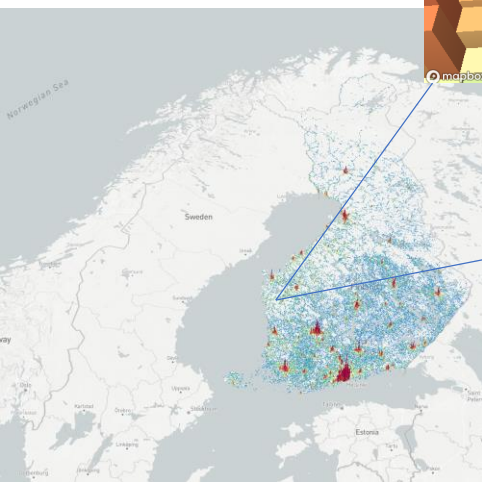
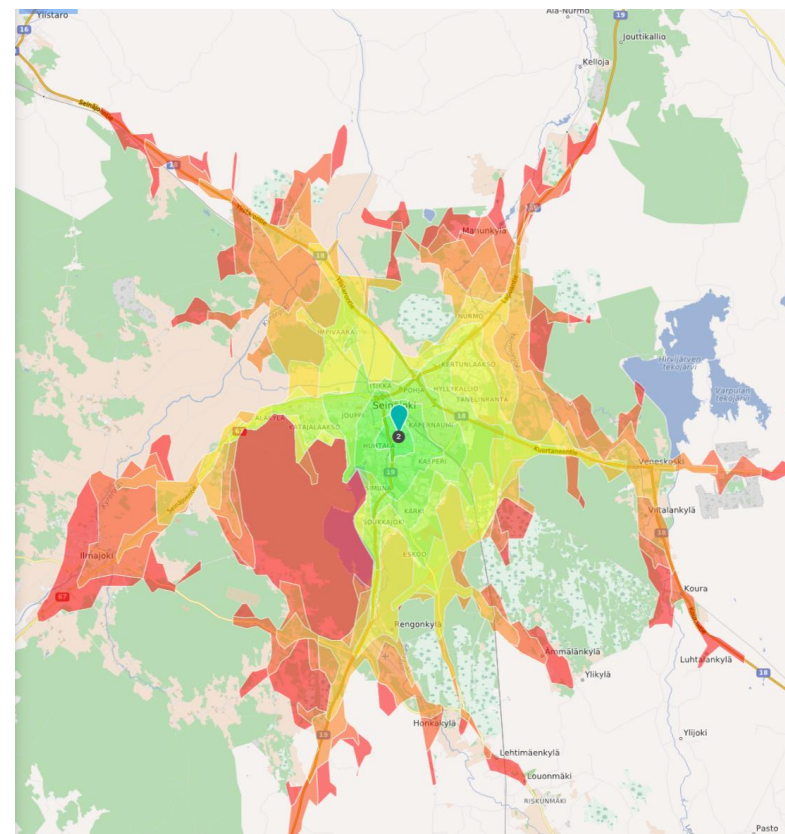
- Helsinki 650,000 inhabitants, capital, metropolitan area 1 million inhabitants total
- Visualisation: population density and time-distance 20 minutes by car
- Isochromes calculated with Openroute

City example: Turku



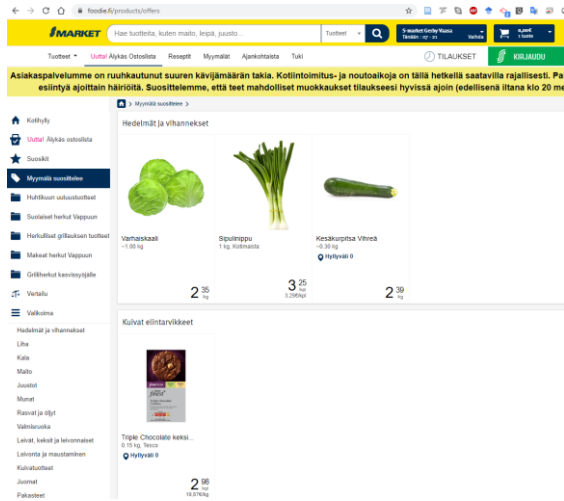
- Turku 186,000 inhabitants, capital
- Visualisation: population density and time-distance 20 minutes by car
- Isochromes calculated with Openroute

City example: Seinäjoki



- Seinäjoki 68,000 inhabitants, less density
- Visualisation: population density and time-distance 20 minutes by car
- Isochromes calculated with Openroute

Pick from store model

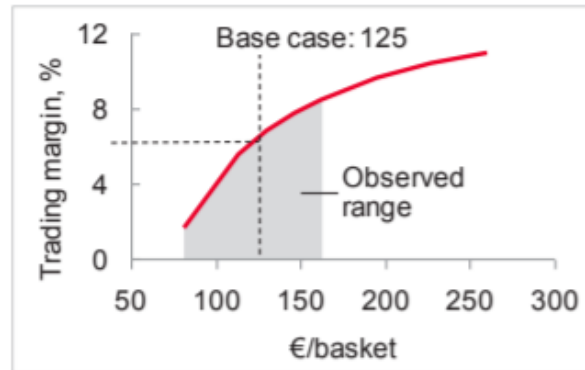


- A common strategy to start online business and skip delivery problems is pick from store
- Generally In-store picking is suboptimal from order-picking efficiency point of view
- Layouts - Retail locations are built for maximizing walk-through time, not for maximizing lines picked up per hour.
- Locations have not been design for delivery

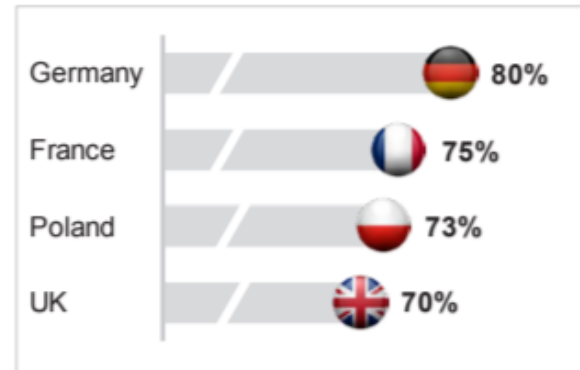


Lot sizing and efficiency

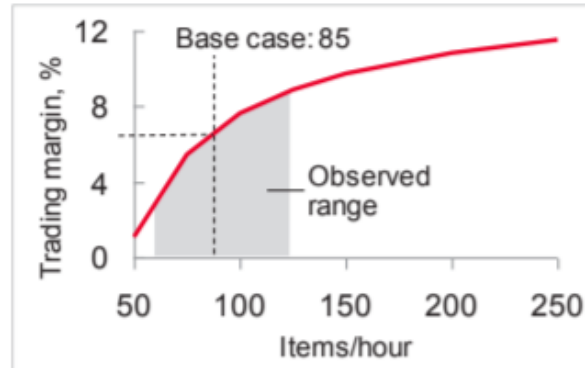
Basket size



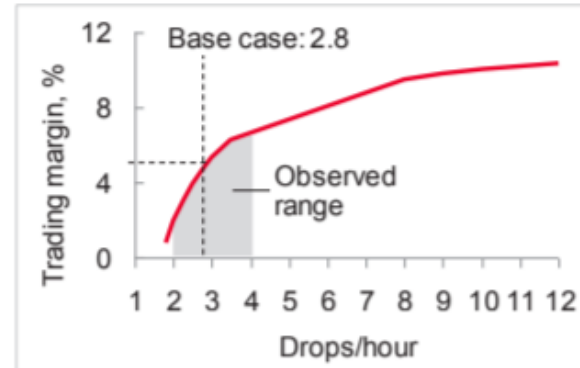
COGS² (estimate, dominant grocery format)



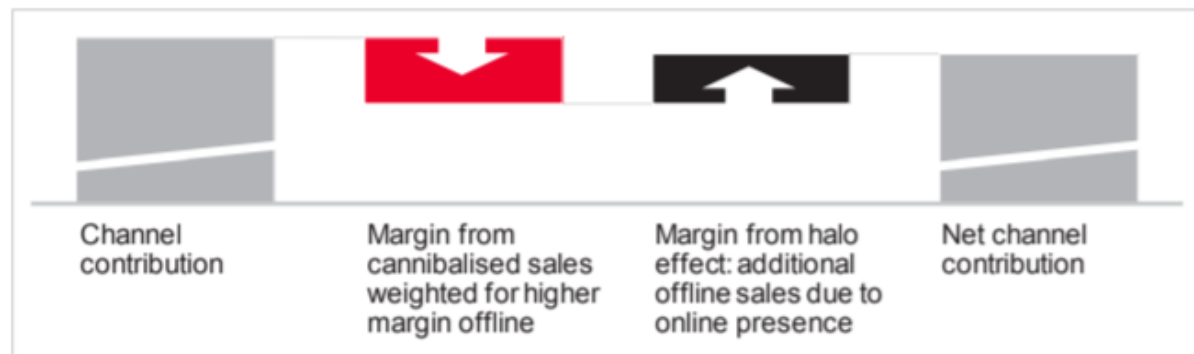
Picking*



Delivery costs



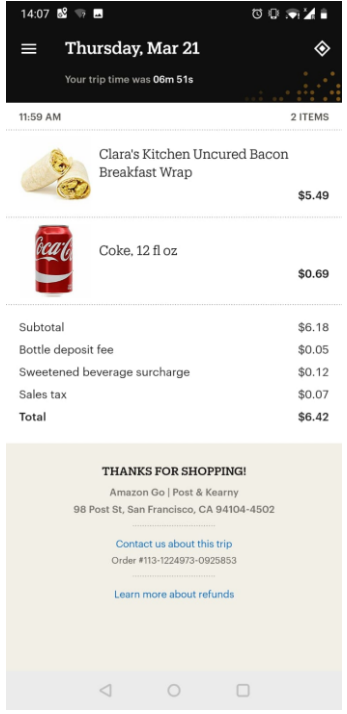
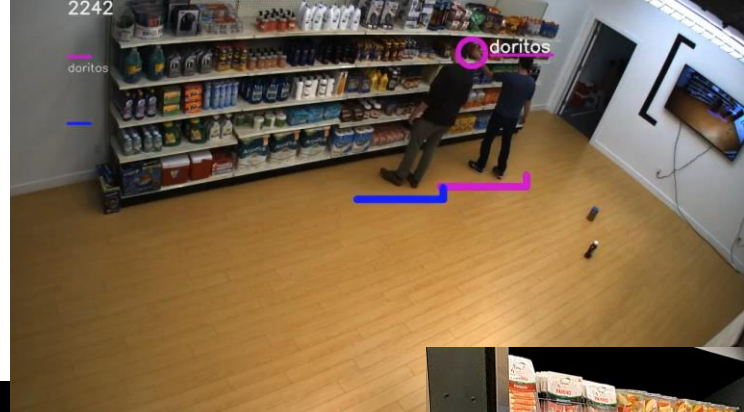
Net cannibalisation (illustrative)



- Setup costs are high - Larger grocery basket size is need for profitability, this would mean fewer visits and bigger lot sizes
- Picking speed items/hour is low compared to advanced logistics centers
- Efficient delivery needs combining deliveries – works best in high density population areas
- Still needs to be considered as part of omnichannel – cannibalization of traditional stores.

*This is the fully loaded picking rate (total number of items picked divided by total picking labour hours).


AmazonGo – fully automated retail

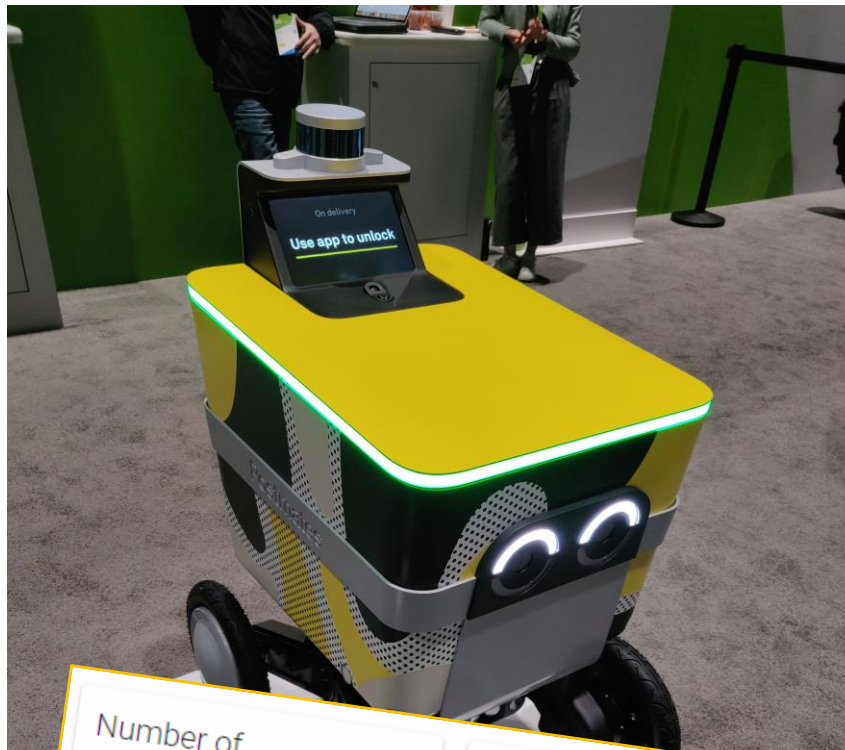



- Tech companies are piloting retailers with no tills
- Requires membership app
- No human contact needed, 24/7 operations

Autonomous home delivery tech



Number of Acquisitions	1	Total Funding Amount	\$2M
	Kiwi Campus Kiwi Campus offers food delivery with robots for campus colleges. Berkeley, California, United States		



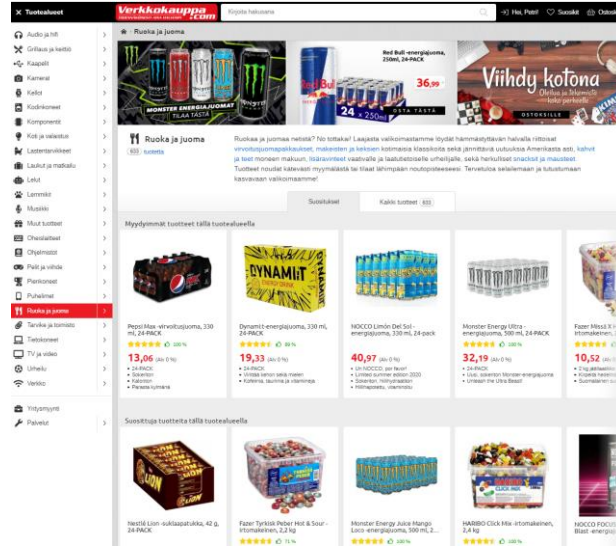
Number of Acquisitions	3	Total Funding Amount	\$678M
	Postmates Postmates powers local, on-demand logistics focused on fast deliveries from any type of merchant at scale. San Francisco, California, United States		

- Companies building delivery based on advanced autonomous delivery robots has attracted VC funding
- However, need for traditional delivery solutions is still there for a long time

Omnichannel strategies

Omnichannel logistics

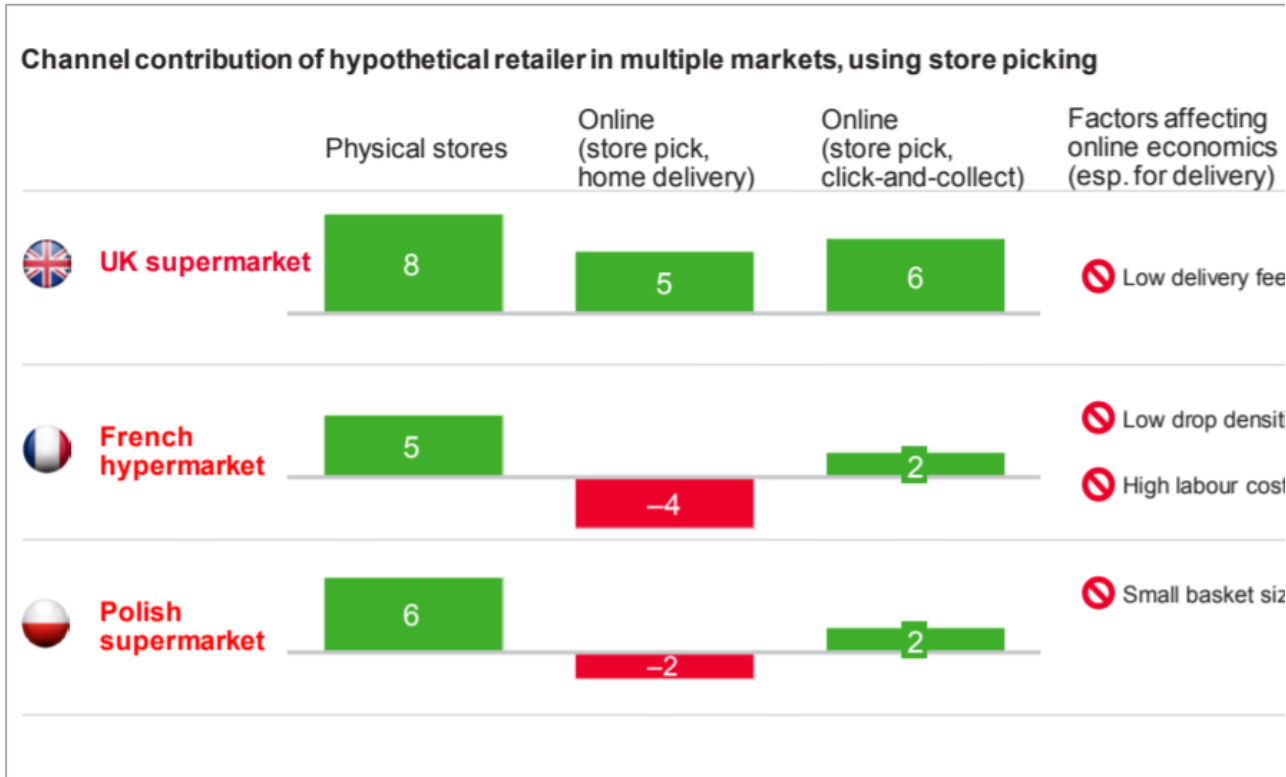
OMNICHANNEL SUPPLY CHAIN SUCCESS SYSTEM



- Companies are approaching omnichannel logistics to survive the competition:
- Web-based companies are building deliveries for perishable goods and getting closer to grocery
- Retail storage with customer pick for traditional players
- Distributor storage with package carrier delivery

<https://360.fmlogistic.com/supply-chain-4-0/supply-chain-success-4-ways-to-optimize-omnichannel-fulfillment-7/>

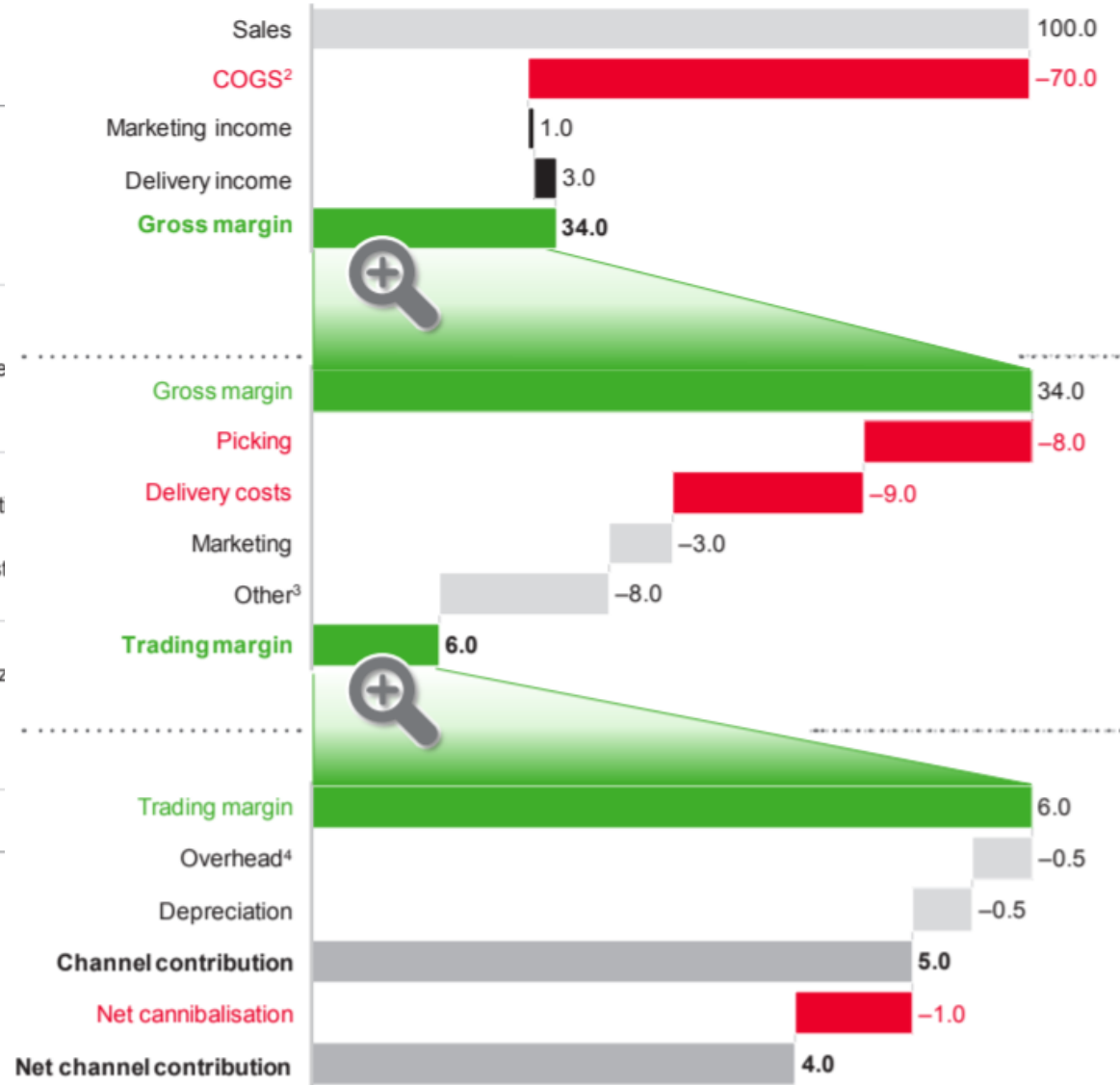
Store-pick economics



- Channel contribution metrics still needed to justify investments
- Good news is that customer using all methods, online, store pick and home delivery are the best customers

Shaping the future of on-line grocery (2015).

Revenue and cost breakdown calculated for UK supermarket, using in-store picking
Per basket, indexed¹



1 Assumptions: basket size = €125 with 77 items; 85 items picked per hour of picking labour; 2.8 van drops per hour of delivery-van driving time.
2 Cost of goods sold.
3 Includes distribution, replenishment, waste, credit-card charges, and consumables.
4 Incremental fixed costs attributable to the online operation (e.g., in purchasing and administrative functions). Excludes any sunk costs.

Example: Omnichannel developments in Finland



- Large retailers S and Kesko building omnichannel from hypermarket perspective
- Food delivery startups not financially sustainable but offer good service in larger cities
- Brand-labels and OEMs aiming to build connection directly to end-customers
- As volumes have been low in the past, profitability has been challenging

Kaupunki Yritys	Helsinki	Espoo	Tampere	Vantaa	Oulu	Turku	Jyväskylä	Lahti	Kuopio	Pori
S-ryhmä	X	X	X	X	X	X	X	X	X	X
K-ryhmä	X	X	X	X	X	X	X	X	X	X
Wolt	X	X	X	X	X	X	X	X	X	X
Foodora	X	X	X	X	X	X	X		X	
Pizza-Online	X	X	X	X	X	X	X	X	X	X
ResQ Club	X	X	X	X	X	X	X	X	X	X
Kauppahalli24	X	X		X						
Ruokanet	X	X		X						
Fiksuruoka	X	X	X	X	X	X	X	X	X	X
Anton&Anton	X	X		X						
Atria	X	X	X	X		X				
Verkkokauppa	X	X	X	X	X	X	X	X	X	X

What next?

Post-Covid19 - Expected changes

- Use of online retail has been boosted by increasing demand of home delivery, in-store delivery as customers need to minimize human contact
- Lockdown has made available labour capacity for picking and delivery work
- Consumers are gathering experience and it is expected that demand for online models will be permanently increased
- Retailers need to change layouts and start transforming from supermarket toward delivery centers
- New lighter versions of last mile delivery need to be developed. SMEs can probably contribute on this sector.

References and sources

- Even once Covid-19 is under control, stores may think twice about reopening right away. <https://qz.com/1835802/once-covid-19-is-tamed-stores-still-may-not-want-to-open-right-away/>
- Alibaba and Amazon borrow furloughed service workers. <https://asia.nikkei.com/Business/Business-trends/Alibaba-and-Amazon-borrow-furloughed-service-workers>
- Suokas, Mikko (2020). Elintarvikkeiden kotiinkuljetus Suomessa – Analyysi markkinoista ja toimintamalleista. Unpublished M.Sc. Thesis.
- Shaping the future of on-line grocery (2015). A study conducted for the Coca-Cola Retailing Research Council, Europe by McKinsey & Company https://prod-wp.pub.coke.com/wp-content/uploads/sites/24/2016/10/CCRRC_EU_Shaping-the-Future-of-Online-Grocery_032015.pdf
- Supply chain 4.0 - <https://360.fmlogistic.com/supply-chain-4-0/supply-chain-success-4-ways-to-optimize-omnichannel-fulfillment-7/>



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