



# FORESIGHT ON DEMAND: RETAIL ECOSYSTEM 2040

Future sheets: key factors of change in the  
European retail ecosystem

**Authors: Daniel Cassolà, Riccardo Enei, Mario Gualdi (ISINNOVA)**

This report is an intermediary result of the project "The EU retail ecosystem in the future – a vision for 2040"; it is meant to further stimulate reflection and discussion among stakeholders.

Date: 11.02.2022

Version No. 1

# CONTENT

Content .....	3
1 Introduction.....	5
2 Formulation of the 50 Future Sheets .....	5
2.1 The Dynamic Argumentative Delphi.....	6
2.2 50 Future Sheets .....	9
3 Description of the 50 Future sheets .....	10
3.1 RETAILERS.....	10
1. Future demand adapts to older population .....	10
2. COVID and urban transformations: the end of local shops?.....	12
3. Market consolidation and the end of independent local shops .....	13
4. The use of AI interfaces shapes retail shops functions and strategies.....	14
5. The fusion of physical and digital stores becomes usual.....	15
6. Big retailers “go green” in investment decisions and CO2 reduction.....	16
7. Recycling and resale/second-hand demand feed trends to waste reduction .....	17
8. Cryptocurrencies become mainstream payment methods.....	18
9. DNA profile and/or real-time biometric will become relevant for payment and customers’ profile ..	19
10. Challenges for retail rise from the advances of the Single European Market.....	20
11. Economic crisis and inequalities undermine consumers spending capacity .....	21
12. Demographic projections and COVID impacts determine a labour shortage .....	22
3.2 WHOLESALERS .....	23
13. Wholesalers will manage digital and traditional selling channels. ....	23
14. In the future, wholesalers must face orders straight from the supplier .....	24
15. The management of distribution channels will rely on advanced technological tools.....	25
3.3 WAREHOUSING & STORAGE.....	26
16. Electric shelf labels will be adopted to a greater extent .....	26
17. On-demand warehousing is going to increase.....	27
18. The future warehouse will be more automatized .....	28
19. Time do delivery becomes the key warehousing competitive advantage.....	29
20. E-commerce boom will increase the need of more warehouse space .....	30
3.4 LOGISTICS.....	31
21. Artificial Intelligence (AI) and Internet of Things (IoT) will be part of the logistics industry.....	31
22. The trend toward zero-emission vehicles in urban area delivery will grow.....	32
23. Circular economy models (reverse logistics) will be significant .....	33
24. Climate extremes and associated natural disasters will affect global supply chains.....	34
25. A systematic driver shortage is to be expected.....	35
26. EU regulation will address market fragmentation for parcel delivery (cross-border logistics) .....	36
27. Drones will play a key role in last-mile delivery.....	37
3.5 E-COMMERCE.....	38
28. “Click-and-collect” services become more relevant .....	38
29. Digital sales benefit of social channels .....	39

30.	Neighbourhood stores/small groceries shops will be using smart point-of-sale enabled by ecommerce platform/retail giants/tech companies .....	40
31.	Online channels sustain reselling markets .....	41
32.	Digital customers prefer subscription models .....	42
33.	Buy on-line will benefit of Artificial Intelligence (AI) and Virtual Reality (VR) tools .....	43
34.	E-commerce growth will continue in the future .....	44
35.	Smart appliances and smart objects will populate the homes of the future.....	45
36.	E-commerce growth is going to raise environmental concerns .....	46
37.	E-commerce growth raises data privacy and security issues .....	47
3.6	CONSUMERS .....	48
38.	The growth of elderly population with diminishing spending capability is likely to influence consumptions levels .....	48
39.	Is the “15 minutes city” a model for the future?.....	49
40.	The consumer of the future: more power of choice and required personalised products .....	50
41.	Consumers’ willingness to share data (smart objects and IoT) for discount .....	51
42.	Consumers will prefer cashier-less and cashless payments .....	52
43.	Influencer and friend’s posts on social media influence consumers’ choices.....	53
44.	Environmentally friendly consciousness will influence consumers’ choices .....	54
3.7	PRODUCERS.....	55
45.	The importance of local products (fresh food) will growth.....	55
46.	Eco-labels will inform consumers on environmental claim and quality assessment of the products.....	56
47.	Packaging will be more environmentally friendly .....	57
48.	3D printing technologies will growth further .....	58
49.	There will be a progressive application of the circular economy principles to the overall production processes .....	59
50.	Direct-to-consumer brands diversify their product lines .....	60
4	Prioritisation of Future Sheets .....	61
5	Conclusions .....	67

## List of Tables

Table 1	Statements from the argumentative Delphi .....	6
Table 2	List of 50 Future Sheets .....	9
Table 3	Future sheets backed by Delphi statements .....	62

# 1 INTRODUCTION

This Deliverable is the second and last deliverable of Task 2 “Horizon Scanning” on trends that are relevant for the retail ecosystem in 2040. As such, it summarises the work done in the initial steps of Task 2, i.e., classification of the factors of change in the European retail ecosystem, described in Deliverable 4 of the study<sup>1</sup>, and further development and refinement of the factors of change through the implementation of the Dynamic Argumentative Delphi survey (see the Annex for details).

More specifically, the background work underpinning this deliverable is based on three components:

1. List of 75 factors of changes, classified by category (weak signals, wild cards, megatrends, and emerging trends), distilled from extensive literature review and web-mining.
2. Experts’ opinion scanning through a stakeholders’ workshop (November 2021) involving retail associations representatives and researchers to refine the list of factors of change.
3. Online Dynamic Argumentative Delphi consultation, based on the refined list of factors of change, in which stakeholders were involved to assess relevant future statements that in turn enriched the final list of factors of change.

Chapter 1 synthesises the overall retail ecosystem knowledge base compiled and organised by Task 2 in view of identifying a list of 50 emerging trends or key factors of changes by 2040 (also qualified as Future Sheets). The list of 50 Future Sheets is classified according to an agreed nomenclature of actors of the retail ecosystem, which resulted from the work executed in Task 1 of the study.

Chapter 2 presents the 50 Future Sheets according to the following template: a) concise description of the topic under examination; b) narrative of the future developments, including their plausibility and key uncertainties; c) inputs from the Dynamic Argumentative Delphi consultation (when available) ; d) list of key sources, accessible and downloadable for consultation.

Chapter 3 presents the prioritisation of the 50 Future Sheets, filtered down through using the insights provided by the Dynamic Argumentative Delphi, based on the likelihood of trends. The identification of the 30 Future Sheets can be regarded as a prioritisation of the overall 50 Future Trends, thus supplying the study’s list of potentially most influencing trends for the retail ecosystem in 2040.

The conclusions of Chapter 4 pave the way for Task 3 Scenario Building. The Future Sheets are classified in accordance with the STEEP framework (Socio-cultural, Technological, Economic, Environmental and Political domains), supporting the identification of key domains that in turn can orient the work of policy makers engaged in the development of suitable retail strategies.

## 2 FORMULATION OF THE 50 FUTURE SHEETS

This chapter shows the list of the 50 Future sheets, resulting from the combination of three sources:

1. The 75 factors of change identified in the D4.
2. The outcome of the November 2021 Stakeholders Workshop.
3. The Dynamic Argumentative Delphi inputs.
- 4.

### **75 factors of change and the Stakeholders’ Workshop**

From the original 75 factors of change, the Stakeholders Workshop held on November 2021 contributed to refine the list, amending trends, and flagging new topics. During the discussion the stakeholders were able to argue about the actual relevance of certain specific factors of change as truly emerging trends (e.g., a massive advent of drones as delivery means) and add factors of change that escaped the initial analysis (e.g., sustainability and circular economy principles).

---

– <sup>1</sup> D4 “Factors of change in the European retail ecosystem”

## 2.1 The Dynamic Argumentative Delphi

Furthermore, the outcomes of the online Dynamic Argumentative Delphi contributed to the refinement of the list, stressing new potential trends (statements) not considered before (e.g., the role climate change induced extreme weather episodes). The summary results of the Delphi are provided in the next table. The average scoring higher than 3.5 on a scale between 1-minimum and 5-maximum likelihood, means that the trend is likely to happen. The standard deviation about 1 indicates a non-dispersed variability of opinions. Details on processes and methodologies of the Delphi are provided in a dedicated report<sup>2</sup>.

*Table 1 Statements from the argumentative Delphi*

Statements	Number of respondents	Average score	Standard deviation
<b>Domain: Interfaces</b>			
In 2040, in the EU, over 30% of physical customers will make biometric payments, e.g. by matching a fingerprint or retina scan against a credit card or bank account in a cloud-based system.	122	4.09	1.21
In 2040, in the EU, retailers will be marketing to the AI interfaces (e.g. virtual assistants such as Alexa, Siri etc., digital avatars with celebrity/influencer status on social media) that will act as gatekeepers between brands and consumers.	119	3.82	1.04
In 2040, in the EU, over 80% of communication related to online purchases will involve chatbots.	122	3.80	1.17
In 2040, in the EU, at least 20% of all consumer purchases will be made through voice commerce (a.i. enabled by voice-bots).	123	3.76	1.11
In 2040, in the EU, more than 50% of homes will have at least one smart appliance that does automated purchases for household staples (e.g. groceries, detergent, pet food).	121	3.69	1.26
In 2040, in the EU, numerous celebrities will lend their image for marketing campaigns to create, using deepfake technology, believable virtual replicas of them as brand ambassadors.	114	3.61	1.32
In 2040, in the EU, at least 10% of product reviews will include sharing of data generated by emotion recognition technology.	120	3.35	1.30
In 2040, in the EU, at least 10% of people will use brain controlled technologies for shopping in virtual/blended environments.	118	2.52	1.35
<b>Domain: Consumer attitudes, preferences, behaviors</b>			
In 2040, in the EU, at least 10% of consumers will share various forms of personal/behavioral data to creative AIs in order to generate highly personalized products designs.	196	4.27	0.8
In 2040, in the EU, most retailers of smart objects will provide discounts to people sharing data regarding their use, including their interaction with other smart objects.	195	3.91	0.98
In 2040, in the EU, over 30% of individual consumers will actively avoid (including by paying for this feature) all exposure to advertising from their daily lives.	198	3.47	1.17
In 2040, in the EU, over 50% of consumers will be strongly opposing the use of emotion recognition technology by retail services.	191	3.41	1.19
In 2040, in the EU, more than 50% of the consumers will prefer local products even when 20% higher in price when compared to products from other countries.	199	3.33	1.27

– 2 Retail Ecosystem 2040” Report of the Dynamic Argumentative Delphi survey”, Bianca Dragomir, Radu Gheorghiu, Roxana Dimitriu, Paul Pleşcan, Adrian Curaj

Statements	Number of respondents	Average score	Standard deviation
In 2040, in the EU, over 50% of consumers will use individual/bundled subscriptions instead of repurchasing certain products (pet food, groceries, clothing).	179	3.26	1.16
In 2040, in the EU, at least 20% of consumers with above average discretionary income will practice a form of frugality/anti-consumerism (e.g. reduced shopping budgets over longer periods of time, months with no fashion purchases etc.).	193	3.19	1.16
In 2040, in the EU, more than 10% of the population will follow dietary recommendations made by retailers that will use personalisation engines linked to DNA profile and/or real-time biometric data.	185	3.12	1.29
In 2040, in the EU, more than 20% of durable goods will be owned and shared by groups or communities of people, rather than individuals or families.	190	2.94	1.22
In 2040, in the EU, more than 10% of people will prefer purchasing low tech alternatives to high-tech products.	193	2.88	1.39
In 2040, in the EU, over 50% of private consumers will have a type of 3D printer at home.	192	2.79	1.37
<b>Domain: Retail: spaces, environments, services</b>			
In 2040, in the EU, over 50% of grocery stores will be cashierless.	111	4.09	0.98
In 2040, in the EU, small convenience shops and grocery stores will still be present in most rural centres, with online retail and delivery services complementing the offer.	111	3.98	1.07
In 2040, in the EU, more than 50% of supermarkets and hypermarkets will use shelf-scanning robots to capture granular data about the products on the shelves.	106	3.97	0.99
In 2040, in the EU, most large commercial centers/malls will become "retailtainment" centers where consumer brands will create experiences that will promote their brands (e.g. games with holographic players, live music, masterclasses, VR realms etc).	108	3.91	1.06
In 2040, in the EU, over 80% of fashion retailers will have virtual fitting rooms - apps that allow users to upload a full-body photo and get an idea of what a garment looks like on their body without physically trying it on.	108	3.88	1.15
In 2040, in the EU, 30% of digital sales take place via a social network.	106	3.86	1.11
In 2040, in the EU, over 50% of neighborhood stores/small groceries shops will be using smart point-of-sale systems (which provide data-backed real-time alerts and suggestions for action), enabled by ecommerce platform/retail giants/tech companies trying to extend their dominance to offline retail.	102	3.75	1
In 2040, in the EU, intelligent labels will ensure quality assessment of over 80% of perishable food products (by monitoring multiple parameters such as ripening processes, external humidity conditions etc.).	102	3.61	1.1
In 2040, 90% of purchases in the EU will be facilitated by eCommerce.	110	3.53	1.41
In 2040, in the EU, sales initiated through live-streaming will account for at least 20% of all e-commerce.	105	3.45	1.25
In 2040, in the EU, over 50% of small shops will no longer be independent but they will be part of larger retailer chains.	106	3.28	1.23
In 2040, in the EU, the dominant actors of the global retail sector will be the ones mastering quantum computing for simulation of demand.	86	3.24	1.16

Statements	Number of respondents	Average score	Standard deviation
In 2040, in the EU, senior-focused malls will be present in more than 50% of the large cities (i.e. 1 mil.+ inhabitants).	108	3.23	1.24
In 2040, in the EU, a significant share (>20%) of clothing and cosmetics brands will be selling both real and electronic versions of their products; the latter to be used by the digital twins of customers when they represent those persons in a virtual presence event.	102	3.05	1.33
In 2040, in most EU cities, high streets will primarily host restaurants, services and leisure spaces, and few, if any, retail stores.	106	2.85	1.26
In 2040, cryptocurrency payments (either public cryptocurrencies, store-specific cryptos, digital versions of most prominent regular currencies) will be the preferred mode of payment when shopping.	103	2.64	1.29
<b>Domain: Sustainable commerce</b>			
In 2040, in the EU, more than 50% of the non-durable goods on the market will have sustainable (i.e. recyclable, compostable or reusable) packaging.	78	4.40	0.76
In 2040, in the EU, more than 50% of supermarkets will have transitioned from hydrofluorocarbon (HFC) based refrigeration systems to refrigerants with zero or near-zero global warming potential.	64	3.80	1.06
In 2040, in the EU, more than 50% of heavy goods vehicles (above 3.5 tones) will be zero-emission.	72	3.75	0.98
In 2040, in the EU, reverse logistics (i.e. operations related to the reuse of products and materials) will represent over 30% of the logistics sector.	69	3.75	0.98
In 2040, in the EU, for over 50% of products in stores and webshops, emission values will be available and will be calculated dynamically (to include, beyond production emissions, transportation emissions, warehousing, cooling times etc).	73	3.64	1.06
In 2040, in the EU, buy-back programs will be available for more than 80% of the households appliances.	71	3.56	1
In 2040, in the EU, the resale/second hand sector of fashion will reach at least 30% of the fashion market share.	78	3.54	1.03
<b>Domain: Supply chain, warehousing, logistics and delivery</b>			
In 2040, more than 80% of the large-scale logistics warehouses managed by e-commerce platform operators (e.g. Amazon, Alibaba) will have reached full automation.	81	4.09	1.04
In 2040, climate extremes and associated natural disasters will disrupt global supply chains multiple times throughout the year.	82	3.96	1.01
In 2040, in the EU, most large retailers will rely on just-in-time logistics enabled by predictive analytics.	81	3.96	1
In 2040, in the EU, over 30% of small and medium-size retailers will use on-demand warehousing to store their inventory.	76	3.89	0.99
In 2040, in the EU, click-and-collect sales will account to at least 30% of retail ecommerce.	79	3.86	0.88
In 2040, for most legacy brands, direct-to-consumer sales will account for at least 30 of total sales, bypassing wholesalers and retail stores.	77	3.84	1.03
In 2040, in the EU, 30% of last-mile deliveries will be performed by ground delivery bots or drones.	81	3.44	1.14



Statements	Number of respondents	Average score	Standard deviation
In 2040, more than 50% of goods will be moved across borders by autonomous transportation (e.g. autonomous trucks, autonomous vessels, cargo drones).	80	3.40	1.14

## 2.2 50 Future Sheets

The statements from the Delphi survey have been associated to the refined 75 factors of change, resulting in 50 Future Sheets, shown in Table 2, with the indication of the actor of the ecosystem mostly addressed. The 50 Future Sheets are fully described in the subsequent chapter. In describing the Future Sheets, when the associated statement shows an average scoring higher than 3.5 the trend is considered **likely to happen**, when lower than 3.5, the associated trend is considered **not likely to happen**.

Table 2 List of 50 Future Sheets

Ecosystem actors	50 Future Sheets
Retailers	1. Future demand adapts to older population
	2. COVID and urban transformations: the end of local shops?
	3. Market consolidation and the end of independent local shops
	4. The use of AI interfaces shapes retail shops functions and strategies
	5. The fusion of physical and digital stores becomes usual
	6. Big retailers “go green” in investment decisions and CO <sub>2</sub> reduction
	7. Recycling and resale/second-hand demand feed trends to waste reduction
	8. Cryptocurrencies become mainstream payment methods
	9. DNA profile and/or real-time biometric will become relevant for payment and customers’ profile
	10. Challenges for retail rise from the advances of the Single European Market
	11. Economic crisis and inequalities undermine consumers spending capacity
	12. Demographic projections and COVID impacts determine a labour shortage
	13. Wholesalers will manage digital and traditional selling channels.
Wholesalers	14. In the future, wholesalers must face orders straight from the supplier
	15. The management of distribution channels will need advanced technological tools
Warehouse & storage	16. Electric shelf labels will be adopted to a greater extent
	17. On-demand warehousing is going to increase
	18. The future warehouse will be more automatized
	19. Time do delivery becomes the key warehousing competitive advantage
Logistics	20. E-commerce boom will increase the need of more warehouse space
	21. AI and Internet of Things will be part of the logistics industry
	22. The trend toward zero-emission vehicles in urban area delivery will grow
	23. Circular economy models (reverse logistics) will be significant
	24. Climate extremes and associated natural disasters will affect global supply chains
	25. A systematic driver shortage is to be expected
	26. EU regulation will address market fragmentation for parcel delivery (cross-border logistics)
	27. Drones will play a key role in last-mile delivery
E-commerce	28. “Click-and-collect” services become more relevant
	29. Digital sales benefit of social channels
	30. Smart “point-of-sales” shops and dark stores are going to growth
	31. Online channels sustain reselling markets
	32. Digital customers prefer subscription models
	33. Buy on-line will benefit of AI and Virtual Reality tools
	34. E-commerce growth will continue in the future
	35. Smart appliances and smart objects will populate the homes of the future
	36. E-commerce growth is going to raise environmental concerns
	37. E-commerce growth raises data privacy and security issues
Consumers	38. The growth of elderly population with diminishing spending capability is likely to influence consumptions levels
	39. Is the “15 minutes city” a model for the future?
	40. The consumer of the future: more power of choice and required personalised products
	41. Consumers’ willingness to share data (smart objects and IoT) for discount
	42. Consumers will prefer cashier-less cash-less payments
	43. Influencer and friend’s posts on social media influence consumers’ choices
	44. Environmentally friendly consciousness will influence consumers’ choices
Producers	45. The importance of local products will growth
	46. Eco-labels will inform consumers on environmental claim and quality assessment of the products

Ecosystem actors	50 Future Sheets
	47. Packaging will be more environmentally friendly
	48. 3-D printing technologies will growth further
	49. There will be a progressive application of the circular economy principles to the overall production processes
	50. Direct-to-consumer brands diversify their product lines

## 3 DESCRIPTION OF THE 50 FUTURE SHEETS

### 3.1 RETAILERS

#### 1. Future demand adapts to older population

##### Description

For older people, the weekly trip to the supermarket may be the only opportunity for social interaction within the local community. Many older people highlight the importance of the social and pleasurable aspects of shopping in supermarkets. However, some of them find the supermarket environment daunting mainly due to limited mobility and weakening eyesight. Many supermarkets have set up initiatives to offer shopping support to older people who need it and have adopted measures to create a more pleasurable, sociable and enabling shopping environment.

##### Developments

Some trends have been identified among retailers to meet the needs of older and more vulnerable customers. Several supermarkets (e.g. Kaiser's, Albert Heijn XL etc) have designed their spaces with 'relaxation zones' and more seating areas for older people that need to rest partway around the store. 'Slow' or 'relaxed' checkout lanes at set times have been introduced. There are other initiatives focussed on older people such as the encouragement shop during quieter periods to make the supermarket a less stressful and more sociable, enjoyable environment; providing a selection of popular products near the front of stores to keep shopping time more manageable, 'shopping buddy' schemes with volunteers to assist people who need support; accumulative discount schemes so lower-spend customers can access discounts once a certain spend is achieved over a number of weeks; and providing more foods in smaller pack sizes without financial penalty in order to minimising food waste.

##### Plausibility and Uncertainties

It is very plausible that in the longer-term retailers could consider innovative new store layouts that uphold the principles of universal design. Online shopping is a last resort for older people, but supermarkets could look at how best to support online shopping for those who struggle to leave the house.

Many older people choose supermarkets according to their perception of 'helpful' staff. If this is sustained in the future, it will require great efforts of staff training on meeting the needs this sector of customers, which will might be hampered by the trend of labour shortage. And although many of the aged feel and behave younger than ever, their buying behaviour changes and could make not feasible investments in dedicated retail environments.

##### Delphi outcomes

- In 2040, in the EU, senior-focused malls will be present in more than 50% of the large cities (i.e. 1 mil.+ inhabitants). This trend is **not likely to happen**, given that the buying behaviour does not allow for investment in dedicated retail environment of scale.

##### Supporting arguments:

- There will be more older shoppers as the ageing of the EU's population will quicken in the coming decades; this demographic will also have more available leisure time. Source: <https://bit.ly/3pOWSZB>
- Big retailers such as Sainsbury's, Marks & Spencer, Tesco and Morrisons are already introducing 'slow' or 'relaxed' checkout lanes at set times as an opportunity for community interaction for senior people. Source: <https://bit.ly/3IRdO0I>

##### Source

[https://www.herts.ac.uk/data/assets/pdf\\_file/0008/174194/improving-food-shopping-for-older-people-uh-research-briefing.pdf](https://www.herts.ac.uk/data/assets/pdf_file/0008/174194/improving-food-shopping-for-older-people-uh-research-briefing.pdf)



## 2. COVID and urban transformations: the end of local shops?

### Description

When the pandemic shuttered city centres, it showed how important social links are – but through a different prism. “Many people never visited shops close to their homes before because they were busy.” The consequences of the pandemic and the affirmation of new urban planning models favouring proximity of urban functions may radically change consumers’ behaviour.

### Developments

Over the past years, also under the COVID-19 pandemic breakout a special attention is regarded at the recent resurgence in a new model for urban planning that seems almost custom built for this localised future: the ‘15-minute city’. The concept is to improve quality of life by creating cities where everything residents need can be reached within a quarter of an hour by foot or bike. The 15-minute city requires minimal travel among housing, offices, restaurants, parks, hospitals and cultural venues. Each neighbourhood should fulfil six social functions: living, working, supplying, caring, learning and enjoying.

The implications for the retail sector are relevant; for example, the resurgence and the full implementation of the ‘15-minute city’ would have an impact on the e-commerce, in the direction of a diminishing demand, even if only partial, due to the return to the proximity shops.

### Plausibility and Uncertainties

There are doubts on the plausibility of an integral implementation of the ‘15-minute city’. The feedback from the Delphi clearly indicates that the traditional model of leisure and shopping in city centres will last for decades. Shopping can also be a leisure activity, and retail shows agglomeration effects. People will still keep shopping in the high street.

### Delphi outcomes

- In 2040, in most EU cities, high streets will primarily host restaurants, services and leisure spaces, and few, if any, retail stores. This trend is **not likely** to happen.  
**Supporting arguments:**
- High street retailers are able to offer in-store collection or 1-hour delivery a lot more easily than online retailers as they are already close to shoppers. Source: <https://bit.ly/3lQtM4R>
- According to a recent study, more than three-quarters (78%) of Europeans choose to shop for fashion in town centres, rising to approximately 90% among those living in Western Europe. Source: <https://bit.ly/3yslV7Q>
- Online giants such as Amazon have had a huge impact on the high street as more consumers see online shopping as cheaper and easier than going to the shops. Source: <https://bbc.in/3yuryDr>
  - In city centres with a relatively large high skilled business services sector such as London, only 18 per cent of space is dedicated to retail, while 63 per cent is offices. Source: <https://bit.ly/3yymEWi>

### Source

<https://www.bbc.com/worklife/article/20201214-how-15-minute-cities-will-change-the-way-we-socialise>

### 3. Market consolidation and the end of independent local shops

#### Description

A gradual decrease in terms of retail businesses was already happening before the COVID-19 pandemic: between 2014-2018, a net of 200,000 retail businesses ceased to exist (an average annual loss of -1.3%) with the highest loss in the group of owner-operated businesses (-2.0%). This consolidation has been a trend in all the economic sectors because of mergers and acquisitions and a need to increase efficiency.

#### Developments

The convenience store market has been facing renewed scrutiny after British Tesco announced in 2017 a £3.7bn takeover of cash-and-carry giant Booker. The move shook a market where most of the UK's convenience stores are still independents or belong to buying groups such as Costcutter or Nisa (known as the "symbol groups" in the industry). A decade of aggressive convenience-store opening programmes by the likes of Tesco and Sainsbury's, coupled with the rise of discounters Aldi and Lidl, means it has been getting harder for small shopkeepers to survive.

On the other hand, consolidation at the downstream retail end of the supply chain spells only one thing, and that is continued supply-chain consolidation upstream as well. The savings for larger retailer chains mean reduced profit margins for its suppliers.

#### Plausibility and Uncertainties

A considerable reduction of independent local shops is **likely** due to the irresistibility of the economies of scale and the ability of larger players to get small-scale neighbourhood offers that attract potential clients. Small store franchise systems will remain very popular, where there is a local owner and the chain only provides the name and the main cheap goods.

#### Delphi outcomes

- In 2040, in the EU, over 50% of small shops will no longer be independent but they will be part of larger retailer chains. This trend is **not likely likely** to happen. Small, independent stores will continue to survive, especially in smaller towns and cities and in tourist areas where they add to the visitor experience

#### Supporting arguments:

- According to Buy Local Rogue, consumers prefer to buy from local small businesses as they provide better customer service than their big retail counterparts. Source: <https://bit.ly/3s9hVJf>
- Small, independent stores will continue to survive, especially in smaller towns and cities and in tourist areas where they add to the visitor experience.

#### Source

[https://www.eurocommerce.eu/media/198758/2021\\_05\\_20%20VERF%20Full%20FINAL.pdf](https://www.eurocommerce.eu/media/198758/2021_05_20%20VERF%20Full%20FINAL.pdf)

#### 4. The use of AI interfaces shapes retail shops functions and strategies

##### Description

AI science-based analyses applied to retail pricing and promotions allow to develop optimized strategies for more targeted offerings, e.g., pricing options against both online and physical store competitors. AI enable promotions to maximize shopper engagement, trust, and excitement, factoring aspects such as seasonality and avoiding cannibalization of other profitable items, including private-label items.

##### Developments

AI start-ups are already in the game: Lily AI enables retailers to make emotionally tailored personal recommendations based on understand individual customer's emotional context. Emotion AI start-up Entropik Tech use 'consumer emotion metrics to help marketers create hyper targeted adverts and campaigns.

The global emotion detection and recognition (EDR) market was valued at EUR 15.30 million (USD 17.19 million) in 2019, and it is expected to reach a value of EUR 40.47 million (USD 45.48 million) by 2025<sup>3</sup>. Retailers are starting to incorporate Business To Robot To Consumer (B2R2C) models in order to create a strategy for marketing to robots as digital care bots are already purchasing various products and services on behalf of their owners.

Key influencers include a growing number of robots and virtual beings (e.g. Lil Miquela is a virtual influencer that has already more than 3 million followers on Instagram). According to a recent consumer research conducted by Mindshare UK's Futures division nearly 75% of younger consumers (aged 18 – 34 years old) find virtual entities appealing on some level, describing them as fun, innovative and interactive.

##### Plausibility and Uncertainties

The technology has high potential and will certainly develop **further**. However, there way issues around privacy, data access and ownership are handled will influence the use and potential in the EU.

##### Delphi outcomes

- In 2040, in the EU, retailers will be marketing to the AI interfaces (e.g. virtual assistants such as Alexa, Siri etc., digital avatars with celebrity/influencer status on social media) that will act as gatekeepers between brands and consumers. This trend is considered **likely to happen**.

##### Supporting arguments:

- Gartner predicts that by 2022, 10% of personal devices will have emotion AI capabilities, either on-device or via cloud services. Source: <https://gtnr.it/3DZVAAk>
- Competitiveness among brands will increase because the new 'robot' consumers will be able to evaluate more product offers and will do this quicker than human consumers are able to do this. Source: <https://bit.ly/3pJoOhz>

##### Source

<https://www.forbes.com/sites/forbestechcouncil/2019/08/05/how-ai-can-help-with-your-price-optimization/?sh=1303ceee27f0>

<sup>3</sup> <https://www.globenewswire.com/news-release/2020/04/09/2014591/0/en/Emotion-Detection-and-Recognition-EDR-Market-Growth-Trends-and-Forecast-2020-2025.html>

## 5. The fusion of physical and digital stores becomes usual

### Description

In the future, physical and digital will be complementary and not opposed. This trend may enhance customers' experience in current advanced stores and in the stores of the future. The phygital solutions include online first and then onsite store navigation, digital concierge for direction in multiple languages, personalised recommendations through chatbots.

### Developments

Mixed reality (MR) is the merging of real and virtual worlds to produce new environments and visualizations, where physical and digital objects co-exist and interact in real time. Streamlining online and offline touchpoints to create a phygital experience involves combining the three I's:

- 1) *Immersion* involves making the customer part of the experience.
- 2) *Immediacy* means shoppers get the right message at the right time and they can choose the way their order is fulfilled based on how quickly they want it.
- 3) *Interaction* allows consumers to touch, feel, and engage with products.

Brands such as Gucci, Coca-Cola, Vans are diving right into consumer-facing, interactive and immersive virtual platforms such as Roblox - where players can hang out with friends, compete in daily challenges and customize their own gear/appearance.

D2A or Direct-to-Avatar - a new digital channel and opportunity in the fashion economy is becoming more and more popular across the world. For instance, The Fabricant allows users to create, mint and trade digital garments as NFTs, which can then be worn across various digital environments. And Farfetch is already testing the practice of digital sampling by virtually dressing influencers to promote the launch of its new pre-order offering from brands including Balenciaga, Oscar de la Renta, Dolce & Gabbana etc.<sup>4</sup>.

### Plausibility and Uncertainties

Many consumers tend to research a product online before buying it, but many people still choose to shop in person. In fact, it is not implausible that consumers will continue preferring to shop in person rather than online, if given the choice.

On the other hand, virtual tools such as Metaverse might not take off and remain an issue of luxury.

### Delphi outcomes

- In 2040, in the EU, over 80% of fashion retailers will have virtual fitting rooms - apps that allow users to upload a full-body photo and get an idea of what a garment looks like on their body without physically trying it on. This trend is considered **likely to happen**.

### Source

<https://www.shopify.com/retail/phygital-retail>

<sup>4</sup> <https://www.voquebusiness.com/technology/influencers-are-wearing-digital-versions-of-physical-clothes-now>

## 6. Big retailers “go green” in investment decisions and CO2 reduction

### Description

Regulatory and growing environmental concerns among consumers push towards shifting consumption priorities of the consumers towards more sustainable products and retailers. These models have been increasingly adopted by large retailers. Supported by a rise in investors' appetite to support green businesses, and their recognition of the business potential of such companies: most asset owners across the world are integrating environmental, social and governance factors in their investment decisions.

### Developments

Sustainability has emerged from the shadows to be considered part and parcel of corporate success. Indeed, for many of the world's largest companies, sustainability is seen as key to minimizing risk, increasing resilience, enhancing competitiveness and unlocking new opportunities. At the present, there is an alignment and, increasingly, integration of social and environmental issues inside companies. While it has long been known that the poorest among us endure the brunt of air and water pollution, climate change and other problems, companies largely have focused on social and environmental issues separately and unequally. But the rise of social justice movements around the world is shining a harsh light on the linkages between environmental sustainability and social cohesion, not to mention economic vitality, and ESG-savvy investors are beginning to reward companies that better align corporate strategy with the interests of both people and the planet.

Even before the pandemic hit us, the EU had understood it was high time for a green wave. In December 2019, the EU Commission put forward its European Green Deal, a flagship strategy aiming to green pretty much every aspect of our daily lives: mobility, food, housing, money, etc. Against this backdrop, the EU is working to not only make products more sustainable, but to make green claims and labels more reliable. But it will take time before greenwashing is properly regulated.

For instance, products must generate less CO2 and waste when they are made and used; goods must last longer, be easier to repair or recycle; manufacturers have to substitute hazardous substances with safer alternatives, whenever technically possible.

### Plausibility and Uncertainties

The corporate sustainability efforts are continuing apace, even amid economic uncertainty and a global pandemic that, as of this writing, is far from contained. It is **plausible** that big companies commit to the elimination of greenhouse gas emissions, water extractions, fossil-fuel use or deforestation activities by a given date. And while those target dates are typically decades hence, they set the stage for activists, investors and other self-appointed watchdogs to monitor corporate progress toward their stated goals.

According to recent research of the European Commission, 42% of green claims are potentially false or deceptive in sectors such as cosmetics, textiles and household equipment. Moreover, more than half of the green trademarks analysed provide insufficient information or offer no actual evidence to support their green claim<sup>5</sup>. Technically, this is possible with the help of Big Data. But it can raise the prices of goods, which will create economic problems of implementing and maintaining these systems.

### Delphi outcomes

- In 2040, in the EU, for over 50% of products in stores and web-shops, emission values will be available and will be calculated dynamically (to include, beyond production emissions, transportation emissions, warehousing, cooling times etc). This trend is deemed **likely to happen**.

### Supporting arguments:

- According to an EU study, 57% of EU consumers are receptive to environmental claims when making their purchase decisions. Source: <https://bit.ly/3F0faOh>
- Among others, Unilever announced the introduction of Carbon Labels that will show the quantity of greenhouse gas emitted in the process of manufacturing and shipping products to consumers. Source: <https://bit.ly/31KxGvm>

### Source

<https://www.greenbiz.com/article/state-green-business-2021>

<sup>5</sup> <https://meta.eeb.org/2021/05/27/new-eu-ecolabel-to-tackle-cosmetics-greenwashing/>



## 7. Recycling and resale/second-hand demand feed trends to waste reduction

### Description

As consumers become increasingly concerned by the environmental impact of production, transportation and waste (greenhouse gas emissions, water consumption, landfills), many will continue to increase their demand for second-hand, recycled and greener items.

### Developments

Consumers are starting to prioritize sustainability and retailers are embracing waste reduction. Policy makers are getting on board with the circular economy. Pollutive industries have the power to transform when technological innovation collides with the motivations of consumers, businesses, and government. We have seen it with electric cars, solar energy and, next, circular fashion.

The second-hand market is booming, and brands are piling in. But selling pre-worn clothes online is challenging. Every item must be sorted, priced, photographed and described in a listing. Resellers have giant warehouses where that work is automated. With resale far outpacing the growth of the overall fashion sector, brands are considering their options.

In a different domain, supermarkets are taking action to reduce the amount of plastic packaging used. Many supermarkets have set targets to cut the amount of plastic in products. One method gaining traction is to sell loose items in dispensers. Customers can usually bring containers to fill up or use those provided, with costs typically determined after items are weighed. While supermarkets are making great efforts to be greener, dispenser schemes and plastic reduction measures alone may not be enough to increase sales.

### Plausibility and Uncertainties

Convincing customers to move away from lifelong buying habits is also going to take time. However, if second-hand items or in plastic-free dispensers remain cheaper than their traditional alternatives, then this will **likely** be a deciding factor of how widely they are embraced by consumers.

### Delphi outcomes

- In 2040, in the EU, the resale/second hand sector of fashion will reach at least 30% of the fashion market share. This trend is **likely to happen**

#### Supporting arguments:

- Second-hand fashion is estimated to grow more than any other fashion sector by 2030, to reach 18% market share. Source: <https://bit.ly/33kBGmV>
- European online fashion and lifestyle platform Zalando recently launched a preowned offer enabling customers to buy preowned fashion. The preowned service matches the new items service – with the same returns policy and shopping experience. Source: <https://accntu.re/3pKGxp0>
- In 2040, in the EU, more than 50% of the non-durable goods on the market will have sustainable (i.e. recyclable, compostable or reusable) packaging. This trend is **very likely** to occur.

### Source

<https://urwlab.com/trends-the-boom-of-the-second-hand-apparel-market/>

[https://inside-packaging.nridigital.com/packaging\\_jul21/supermarket\\_refills\\_unpackaged\\_goods](https://inside-packaging.nridigital.com/packaging_jul21/supermarket_refills_unpackaged_goods)

## 8. Cryptocurrencies become mainstream payment methods

### Description

If cryptocurrencies become the more popular and widely accepted means of payment, the retail sector could face several challenges: from price volatility to security risks.

### Developments

Cryptocurrency has recently captured international attention after experiencing significant, remarkable growth. In 2017, the total amount of cryptocurrencies and digital assets on exchanges more than doubled (from 617 to 1,335) sending prices through the roof and causing an international outcry.

So far, cryptocurrency is still only used by “early adopters”. Currently, only 2.9 to 5.8 million people globally actively use cryptocurrency, according to a report from the Cambridge Centre for Alternative Finance. Population-wise, millennials are far more likely to invest than previous generations, with 17.21% of millennials owning cryptocurrency compared to 2.24% of baby boomers. The same survey also revealed that men are twice more likely to invest in cryptocurrency than women.

The volatility of the cryptocurrency market also means companies that currently accept it as a valid form of payment can quickly change their minds. Many well-known large companies currently accept or have previously accepted Bitcoin, such as Subway, KFC, Virgin, Expedia, Whole Foods, T-Mobile Poland and Re/Max London. Other retailers such as Overstock.com, Expedia, eGifter and Microsoft also accept cryptocurrency payments. Most companies use a third-party firm, such as BitPay or Cryptopay, to directly access the cryptocurrency market and instantly convert payments into centralised money.

As cryptocurrency exists completely in the digital sphere, it is particularly vulnerable to cyber-attacks. Despite the high-security provided by blockchain technology, hackers could potentially access digital exchanges and steal millions of pounds. For example, Coincheck made BBC headlines in January 2018 when £380m in virtual assets were stolen by hackers. When a theft occurs, most digital currency exchanges are unable to reimburse the lost funds.

### Plausibility and Uncertainties

Whether cryptocurrency will become mainstream still up for debate. Critics point to issues with security and criminal activities, while supporters see its potential to become a global commodity. The challenges linked to an efficient development and widespread use of cryptocurrencies are still big (security issues, competition issues with traditional banks, monetary policies run by governments). At the moment, the obstacles preventing cryptocurrency from becoming a major payment method - price volatility, vulnerability to fake news, and investor appetite – indicate that means of payment issued by central banks under government control will remain.

### Delphi outcomes

- In 2040, cryptocurrency payments (either public cryptocurrency, store-specific cryptos, digital versions of most prominent regular currencies) will be the preferred mode of payment when shopping. This trend is **not likely to happen**.

#### Supporting arguments:

- This future development is strongly related to the introduction of the digital Euro. Source: <https://www.ecb.europa.eu/press/pr/date/2021/html/ecb.pr210714~d99198ea23.en.html>
- According to a survey, 27% of respondents consider cryptocurrencies the future of payments, while 26% refer to crypto as a good store of value, and 26% say they are the future of banking; only 17% say they used crypto for anything other than investment or speculation. Source: <https://bit.ly/3Dla2wz>

### Source

<https://www.sage.com/en-gb/blog/payment-method-cryptocurrency/>

## 9. DNA profile and/or real-time biometric will become relevant for payment and customers' profile

### Description

As the world went into pandemic lockdown in 2020, consumers shifted their spending habits to embrace contactless tap-and-go payments and online shopping. As stores closed and social distancing took hold, retailers worldwide moved their businesses online, embraced e-commerce and explored the potential of new ways to pay. More than a year later, research from Mastercard shows that the adoption of new payment technologies is rising, and consumer appetite for new, fast and flexible digital experiences continues to grow.

### Developments

Contactless technology was the digital catalyst to explore new payment options because of its fast, secure and touch-free experience. Between the first quarter of 2020 and the same period in 2021, more than 100 markets saw contactless as a share of total in-person transactions grow by at least 50 percent. 3 A year into the COVID-19 pandemic, contactless is showing its staying power and dynamism – in the first quarter of 2021 alone, Mastercard saw 1 billion more contactless transactions as compared to the same period of 2020, with particular momentum in emerging contactless markets like the U.S. and Brazil, where contactless penetration in the two markets combined grew by nearly 3x year-over-year. 3 All signs point to a continued growth path for contactless, with nearly 7 in 10 consumers anticipating using a contactless card this year.

### Plausibility and Uncertainties

It is **likely** that real-time biometric data can be combined with e.g. retailers' apps. Uncertainties may be found in people getting suspicious about DNA profiling, which it is seen as a very dangerous thing. Despite some interest or feasibility indeed may exist, no data can support the accuracy of forecast.

### Delphi outcomes

- In 2040, in the EU, over 30% of physical customers will make biometric payments, e.g. by matching a fingerprint or retina scan against a credit card or bank account in a cloud-based system. This trend is **likely to happen**.

#### Supporting arguments:

- According to the Mastercard New Payments Index, 93% of consumers are considering emerging payments such as biometrics, digital currencies, and QR code, in addition to contactless. Source: <https://mstr.cd/3dDHvxN>
- The global biometrics market is forecast to reach EUR 73.69 billion (USD 82.8 billion) by 2027, growing at a 19.3 percent CAGR from an estimated EUR 21.44 billion (USD 24.1 billion) in 2020, according to a report from Global Industry Analysts. Source: <https://bit.ly/3GwKyEf> .
- In 2020, Amazon unveiled Amazon One – a new technology through which scanners analyze the users' palm and the unique configuration of veins under the skin, letting them pay by waving their hand in mid-air. Source: <https://bit.ly/33k4Sui>

### Source

<https://www.mastercard.com/news/press/2021/april/mastercard-new-payments-index-consumer-appetite-for-digital-payments-takes-off/>

<https://www.capgemini.com/gb-en/2019/09/how-dna-based-personalisation-is-creating-value-in-consumer-products/>

## 10. Challenges for retail rise from the advances of the Single European Market

### Description

EU measures and policies may shape the sector in the future. By inciting Member States to remove regulatory barriers to the establishment and operation of retail shops as well as non-regulatory barriers, such as territorial supply constraints, the EU level actions would have a positive impact on the competitiveness of the ecosystem.

### Developments

The digital and circular transformation of the economy is changing and creating new markets all over the world. Retailers and wholesalers are innovating, adapting and experimenting to explore new products, services and business models to keep up with customer demand. Consumers expect sustainable and affordable products, at any time at the tip of a finger. At the same time, the global trends already point to slower consumer spending growth, higher consumer prices and disrupted global supply chains. The latter caused by a volatile political environment influenced by populist arguments including Brexit, unrest at the EU's borders and an America-first strategy on the other side of the Atlantic.

The Single Market is seen by many as Europe's most powerful instrument for ensuring economic and social prosperity on the European continent. A properly functioning Single Market will enable retail and wholesale to respond to consumer demand and compete in a globally competitive environment.

Over the past decade, retailers and wholesalers have seen certain Member States becoming less and less committed to the Single Market. In numerous Council Conclusions Member States commit to further strengthening and deepening the single market, but this does not always translate into similar national policies or public statements at home. This is leading to fragmentation by introducing new, and often protectionist national rules for products and services, and diverging implementation and interpretation of EU law.

In addition, enforcement of EU rules by Member States and the European Commission is inconsistent. Legitimate retailers and wholesalers who comply with EU rules protecting consumers and ensuring safe products are made available on the market, suffer from unfair competition when facing unscrupulous traders whether established in the EU or outside, who often do not adhere to the same rules. The Commission communication on retail of April 2018 showed that significant progress still needs to be made in harmonising or otherwise dealing with the wide variety of national retail-specific rules and regulations.

### Plausibility and Uncertainties

Currently Europe faces multiple challenges, not the least of which include the global Covid-19 pandemic, the exit of the United Kingdom from the EU and the societal, cultural and political changes wrought by a new digital era. There is **emphasis** by the EU on making sure the single market is fully functional with the development of mechanisms that make the single market more resilient in crises - for example, exploring possibilities to optimise public procurement, including its legal framework, to allow for fast reaction in future emergencies.

Uncertainties might come from external forces - for example, by taking care of EU companies that could become targets for takeovers thanks to the pandemic, and by opposing market distortions caused by state-controlled or state-subsidised companies from elsewhere.

### Delphi outcomes

Not provided.

### Source

[https://www.asktheeu.org/de/request/7685/response/26477/attach/5/EuroCommerce%20Making%20the%20Single%20Market.pdf?cookie\\_passthrough=1](https://www.asktheeu.org/de/request/7685/response/26477/attach/5/EuroCommerce%20Making%20the%20Single%20Market.pdf?cookie_passthrough=1)  
<https://www.eu2020.de/eu2020-en/news/article/-/2406352>

## 11. Economic crisis and inequalities undermine consumers spending capacity

### Description

Income inequality is rising. A quarter of a century ago, the average disposable income of the richest 10% in OECD countries was around seven times higher than that of the poorest 10%; today, it's around 9½ times higher<sup>6</sup>. Lower and middle classes struggle for maintaining their consumption levels. If massive disparities between consumers continue, the likelihood results may cause irrevocable changes to consumer habits.

### Developments

The European economy suffered a lot in 2020: two waves of COVID-19 infections, a high death toll and two lockdowns in most countries. The consequent economic recession was the deepest on record. Consumer expenditure – the largest component of gross domestic product and its main growth driver in recent years – will determine to a large degree how Europe emerges from the recession and what sort of recovery we get. Consumer-facing service industries were worst affected by the effort to combat the virus. The consequence for executives in the consumer goods and retail industries is that they should not expect the recovery to follow the 'normal' post-recession pattern. The range of possible developments is much wider than usual and hinges on completely different factors, such as the speed of vaccination campaigns and the potential unleashing of pent-up demand. During recessions consumers tend to keep their wallets tightly closed, which results in an increase in savings. However, the slowdown in spending does not affect all consumption categories equally. Durable items, such as cars, consumer electronics, jewellery, lawn and garden equipment, sporting goods and washing machines tended to be the most volatile in terms of demand in previous recessions. Spending on these items is likely to be postponed until after the economy recovers. During the global financial crisis, for example, the revenue generated in the automotive sector fell by more than 20 per cent. Demand for non-durable (short-lived) consumer goods and services, on the other hand, is usually more stable as these categories include spending on food and housing. Personal income and spending represent about 70% of GDP and, historically, GDP growth is tightly correlated with retail strength and a rise in retail sales. From the analysis of US expenditures during the period 2006-2017 (a period characterised by financial crisis and economic recession), it emerges the so-called "great bifurcation" in consumers spending: 80% of the consumers positioned in lower and middle classes struggled for maintaining their consumption levels, while the rest 20% saw income growth.

### Plausibility and Uncertainties

To understand how European consumers might emerge from the crisis, it is crucial to understand how the recession differs from previous ones, how policymakers' choices are affecting consumers and what scenarios are possible going forward. In the future, economic recession fuelled by new inflationary pressures and energy crisis might cause wide income distribution gaps, putting under strain the turnover of the retail ecosystem.

But the level of consumer expenditure is **not easy** to predict and does not follow simple patterns. Of course the financial position of households plays a critical role, but it is not the only factor. The future expectations of consumers are equally important, although much harder to measure. An actual severe loss of income or an anticipated one will certainly influence spending, but in economic terms, what matters most are the prospects of consumers once the economy turns up.

### Delphi outcomes

Not provided

### Source

<https://www.potloc.com/blog/en/press-review-the-great-retail-bifurcation>

[https://www2.deloitte.com/content/dam/insights/articles/emea-134280-european-consumers-after-the-pandemic/DI\\_European-consumers-after-the-pandemic.pdf](https://www2.deloitte.com/content/dam/insights/articles/emea-134280-european-consumers-after-the-pandemic/DI_European-consumers-after-the-pandemic.pdf)

<sup>6</sup> [https://www.oecd-ilibrary.org/social-issues-migration-health/income-inequality\\_9789264246010-en](https://www.oecd-ilibrary.org/social-issues-migration-health/income-inequality_9789264246010-en)

## 12. Demographic projections and COVID impacts determine a labour shortage

### Description

Demographic projections and post COVID-19 impacts on supply value chain may determine a general labour shortage. All profiles in the retail sector may be affected in the long run: rising wages may be expected.

### Developments

The COVID-19 pandemic has triggered one of the worst jobs crises since the Great Depression. There is a real danger that the crisis will increase poverty and widen inequalities, with the impact felt for years to come. Countries are doing everything they can to stop this jobs crisis from turning into a social crisis.

Citing data from a variety of sources from the World Bank, United Nations to the Organisation for Economic Co-operation and Development, investment bank Jefferies showed that fertility in 75 countries was already well below the 2.1 so-called "replacement rate" and would be less than 2 globally by the end of the century.

Historically high labour shortages in most central-eastern and north-western EU countries suggest that the immigration of central Europeans to north-west EU countries did not take away jobs from local workers on a significant scale. But as labour shortages now exceed their pre-crisis peak, several urgent measures are being considered to help to combat the problem.

The business and consumer survey, which is conducted by the European Commission in all EU countries, asks about the role of labour as a factor limiting economic activity. In all three major sectors – industry, building and services – the share of companies reporting lack of labour as a reason for limiting business increased among north-west EU countries between the 2004 EU enlargement and the 2007 crisis. It has also increased in the central and eastern European member states, but not in southern European countries. These findings have two implications: first, emigration from central and eastern European countries after EU enlargement had a negative impact on their home labour markets and created labour shortages. Second, the immigration of these central Europeans to north-west EU countries did not take jobs from local workers at any significant rate, because labour shortages in those countries were on the rise in parallel with the arrival of central and eastern European workers.

### Plausibility and Uncertainties

Labour shortages **could be overcome** by immigration (either from other EU countries or from non-EU countries), increased supply of domestic workers and by robotisation. The question is whether a growing worker shortage is inflationary or deflationary. Recently some economists argue that worker shortages in future will afford labour greater bargaining power and bid up wages and inflation over time - something we're getting a glimpse of amid all the pandemic distortions right now.

In most EU countries, there is scope for increasing progressivity of personal income tax and social security contributions (by cutting rates applied to low earners and increasing the rates applied to high earners) to facilitate a net income increase for low earners in a budget-neutral way. A lower total tax and social security burden on low-income earners would also facilitate a reduction in the black economy.

### Delphi outcomes

Not provided

### Source

<https://www.bruegel.org/2018/01/the-ever-rising-labour-shortages-in-europe/>

[https://www.oecd-ilibrary.org/social-issues-migration-health/income-inequality\\_9789264246010-en](https://www.oecd-ilibrary.org/social-issues-migration-health/income-inequality_9789264246010-en)

<https://www.reuters.com/markets/europe/global-worker-shortages-may-only-worsen-post-covid-mike-dolan-2022-01-19/>

## 3.2 WHOLESALERS

### 13. Wholesalers will manage digital and traditional selling channels.

#### Description

In 2020, many B2B businesses started shifting their focus from the traditional approach to omnichannel selling. In the past, brands in fashion and luxury historically had two main different distribution channels to follow:

- *Wholesale channel* – distribution channel, where fashion or luxury brands give to a distributor or retailer rights and tools to distribute their products. So far, it has been Business-to-Business (B2B) logic, with a Sell-In perspective, with the customer being the trade. The brand, usually an industrial company, works with intermediates. It doesn't control retail activity but it interacts with distributors and retailers.
- *Retail channel* – distribution channel where the brand directly manages his distribution channel with a Business-to-Consumer (BTC) logic and a Sell-Out perspective. The final customer is an exact person, a client and companies act as a retailer.

Wholesalers are now starting to manage several sales channels all at once. With the digital age, everything is consumer-centric, businesses will have to be more flexible to stay at the forefront of a competitive market. However, and wherever consumers want to engage with brands, they will also be met at every touchpoint. This includes offline channels, website, telecommunications, and social media channels – all of these can lead to building brand awareness, improved customer satisfaction, and higher sales.

#### Developments

An actual trend is called Omnichannel where offline, wholesale, retail and online channels are converging to deliver a seamless customer experience. It is a strong link between Wholesale and Retail activities that includes important principles in:

- editing
- pricing
- concept
- must-buy definition
- distribution and retail criteria

#### Plausibility and Uncertainties

The trend toward multichannel/omnichannel models is considered plausible. However, some comments pointed out that the evolution of omnichannel sales models implies some threats present in creating and managing such more complex models.

#### Delphi outcomes

In 2040, in the EU, most large commercial centres/malls will become "retailtainment" centres where consumer brands will create experiences that will promote their brands (e.g. games with holographic players, live music, masterclasses, VR realms etc). This trend is considered **likely to happen**.

#### Source

<https://fashionthoughtsweb.wordpress.com/2017/01/11/wholesale-vs-retail-omnichannel/>

<https://www.alexandergroup.com/insights/wholesale-distribution-key-threat-2-mismanaged-omni-channel-models/>

## 14. In the future, wholesalers must face orders straight from the supplier

### Description

Unlike the past when disintermediation was a gradually evolving and less important threat, its manifestations today are rapidly evolving and exerting significant pressure on many distributors, forcing them to higher levels of due diligence and introspection about their value proposition and go-to-market channels. There are several bonuses of ordering wholesale straight from the supplier, namely removing the middleman, which saves 'middleman fees', and sourcing products directly from the country of manufacture, which promotes authenticity.

### Developments

The trend towards disintermediation is fuelled by four drivers:

1. *Cost Savings*: The primary motive to diminish traditional buyers is to save money. Manufacturers today sell directly to consumers thanks to Internet expansion. Rather than paying sales representatives to promote products to resellers, companies can promote products on their own websites, take orders and send goods directly to the final customer.
2. *Better Value*: Eliminating the middleman usually creates a win-win for the seller and buyer from a money perspective. Each step in a traditional distribution process involves a trade buyer adding a markup to his costs. This ultimately makes the final customer's price higher because he is paying for the original product costs, the costs of each buyer's acquisition as well as the profit expected by the retailer.
3. *Efficiency*: Skipping steps in the distribution channel reduces the amount of logistics and transportation required in the movement of goods from manufacturer to consumer. This increases efficiency significantly.
4. *Environmental Impact*: An indirect benefit of eliminating the middleman, which some companies promote actively, is better environmental preservation. By minimizing the number of trucks and travel time moving products from one step to the next, pollutants and external costs in transportation may be reduced. Additionally, local farmers have taken opportunities to market fresh produce to local buyers to improve freshness and minimize waste from delays in moving perishable foods.

### Plausibility and Uncertainties

The trend toward direct-to-consumers sales, removing the middleman, is considered plausible: However, some comments pointed out that shifting to direct-to-consumers sales may increase complexity in warehousing operations: namely picking, packaging and quality assurance.

### Delphi outcomes

- In 2040, for most legacy brands, direct-to-consumer sales will account for at least 30% of total sales, bypassing wholesalers and retail stores. This trend is considered **likely to happen**.

#### Supporting arguments:

- 87% of retail brands in the U.K. and the U.S. have said they plan to launch a D2C channel at some point in the future, while 23% said they will do so within the next 12 months. Source: <https://bit.ly/3EUwxQI>
- In Spain, a little more than two-thirds (67%) of marketing and communications professionals said that direct selling gave them more control and knowledge of user data, and 57% said it provided more opportunities to personalize customer experience. Source: <https://bit.ly/3Ff04od>

### Source

<https://yourbusiness.azcentral.com/advantages-eliminating-middleman-13463.html>

<https://voodoorobotics.com/challenges-risks-adopting-direct-to-consumer-business-model/>



## 15. The management of distribution channels will rely on advanced technological tools

### Description

To keep up with their customers' ever-changing wants and needs, wholesale distributors have to manage diverse and complex product inventories – as well as fluctuating supply chains. As a result, savvy wholesale distributors are embracing digital transformation to empower their operations with end-to-end visibility, data intelligence, agility, and speed.

Furthermore, distribution is among the last industries to make the transition to packaged Enterprise Resource Planning (ERP) solutions and the expanding universe of edge applications. While the risks associated with an Enterprise Resource Planning (ERP) implementation are real and should not be minimized, they can be mitigated, and advances in technology and implementation approaches can further reduce their potential risk. Effectively managing the growing complexity of the distribution business is one of the factors driving the imperative for modern ERP.

### Developments

The prioritisation of new intelligent supply chain technologies, for example embracing the digital transformation, can change the wholesalers' management, becoming more efficient and, as a result, generate increased revenue. In fact, IDC research shows that 32% of distributors see new tech as one of the most important change drivers in their industry.

The wholesale distribution industry is responding to market demands for greater efficiency. More and more businesses are making selective investments in their supply chains over the next 12 months to significantly and steadily improve overall performance over the next two to three years.

### Plausibility and Uncertainties

Given the importance of data, analytics, and technology to both engaging customers and executing the value chain, distributors will also need to leverage IT to truly energize— not just enable—the business. On the other hand, the pervasive coverage of technology innovations such as big data, cloud computing, and digital has contributed to a sense of fatigue and scepticism among many business executives. The transition to the adoption of advanced technological tools may entail in itself challenges and uncertainties.

#### Supporting arguments:

- Automated picking technology is improving, and supply chains see picking, packing and sorting as top use cases for robotics. Source: <https://bit.ly/3DIA1UM>.

#### Source

<https://www2.deloitte.com/content/dam/Deloitte/us/Documents/consumer-business/us-cb-wholesale-distribution-disrupted.pdf>

<https://www.sage.com/en-za/blog/how-digital-supply-chains-can-solve-wholesale-distribution-inefficiencies/>

### 3.3 WAREHOUSING & STORAGE

#### 16. Electric shelf labels will be adopted to a greater extent

##### Description

Instant pricing made possible by electronic shelf labels systems (ESLs) allow for less contact with inventory, preventing the spread of bacteria. It also speeds up the update of pricing, displaying in real time price and information on products and groceries. There are several benefits related to this technology:

- Product and Price Accuracy
- With the help of wireless data transfer, it is possible to bring product data and prices up to date in no time at all. The creation and exchange of paper price labels is no longer necessary.
- Secure Data Transmission
- The encrypted 2.4 GHz wireless connection ensures secure data transmission between gateway and label. This protects wireless network from access by third parties.
- Price changes transferable at the touch of a button
- Price changes, discount promotions and special prices can be displayed on the labels within a very short time. In addition, time-controlled price changes are possible, for instance during the weekend or at special times.
- Immediate and Scheduled Updates
- Centrally control prices and info
- Central Price Control and Monitoring
- Prices and additional information are centrally monitored and controlled with the help of ESL technology.

##### Developments

An interesting development of ELS is the association to scan-robot. Though new to market and not yet widely distributed, shelf scanning robots could become a common sight in physical retail locations within the next couple years. At a basic level, the robots, which roam stores and quickly scan merchandise on shelves using machine vision or RFID readers, help retailers keep track of inventory more efficiently than employees with scanning guns. But the real advantage of these robots is in the data they collect. By analysing massive amounts of data, such as item popularity at a given time of day or in a given shelf location, retailers can gain e-commerce level insights into customer behaviour and product trends. Analytics like that helped e-commerce start-ups topple many brick & mortar giants. Shelf-scanning robots are one-way physical retailers are hoping to level the playing field.

##### Plausibility and Uncertainties

The association between ELS technologies and robot is considered plausible. Uncertainties related basically to the costs and maintenance of the robots.

##### Delphi outcomes

- In 2040, in the EU, more than 50% of supermarkets and hypermarkets will use shelf-scanning robots to capture granular data about the products on the shelves. This trend is considered **likely** to happen.

##### Supporting arguments:

- Shelf scanning robots are collecting and analysing massive amounts of data, such as item popularity at a given time of day or in a given shelf location that will help retailers gain e-commerce level insights into customer behaviour and product trends. Source: <https://zd.net/3IHbOSs>.
- According to a new RetailWire Research study, 59 percent of retailers said shelf scanning is the function or application that can be most effectively filled by robots. Source: <https://bit.ly/31RixYO>

##### Source

<https://www.retailwire.com/discussion/esl-the-seemingly-endless-search-for-retail-adoption/>  
<https://retailwire.com/discussion/will-shelf-scanning-robots-put-an-end-to-out-of-stocks/>

## 17. On-demand warehousing is going to increase

### Description

With companies facing new and unexpected obstacles, the B2B service market is booming. Distribution and Warehousing as a Service (DaaS and WaaS) enable businesses to outsource these essential departments, radically shifting the strain of dealing with challenges like supply chain disruptions and labour shortages onto external partners who are better equipped to overcome such hurdles. Using WaaS and DaaS is a game changer for small and big businesses, assisting SMEs to manage quick growth without risking capital and helping large enterprises focus on other business activities without the distractions of logistical nightmares.

### Developments

Potentially, the on-demand concept might be extended to other essential components of the supply chain, with innovative solutions such as truck booking offering a solution for those in a rush. For example, Germany's TimoCom offers both warehousing and freight sharing. In Australia, the CLIK Collective is a new co-warehousing concept with a co-working space attached, designed specifically for local e-commerce businesses in Melbourne<sup>7</sup>.

### Plausibility and Uncertainties

The trend is considered plausible, but it also creates special challenges:

- 1) *Unique security considerations*: Because DaaS requires organizations to move data into cloud infrastructure and transfer data over the network, it can create security risks that would not exist if data remained on local, behind-the-firewall infrastructure. These challenges can be mitigated using encryption for data in transit.
- 2) *Additional compliance steps*: For some organizations, compliance challenges may also arise when sensitive data is moved into a cloud environment. This does not mean that data can't be integrated or managed in the cloud, but simply that companies subject to special data compliance requirements must ensure that they meet those requirements with their data repository.
- 3) *Potentially limited capabilities*: In some cases, DaaS platforms may limit the number of tools available for working with data. Users are able to work only with the tools that are hosted on or compatible with their DaaS platform, rather than being able to use any tools of their choice to set up their own data-processing solutions.

### Delphi outcomes

- In 2040, in the EU, over 30% of small and medium-size retailers will use on-demand warehousing to store their inventory. This trend is considered **likely** to happen.

#### Supporting arguments:

- The idea of on-demand space within warehouses is becoming more and more popular across Europe: e.g. In UK Stowga offers warehouse space under categories such as 'overspill', 'temperature-controlled', 'grey space' and 'contingency planning'; Swiss firm Log-hub's marketplace covers some 38 countries globally; Waredock offers access to "hyperlocal" on-demand fulfilment centres etc. Sources: <https://bit.ly/30q8Bb7>; <https://bit.ly/3EFK8ed>
- Shared warehousing will monetize unused space with the help of app tools (e.g. UPS launched the platform Ware2Go that uses innovative online technology to match excess warehouse and fulfilment capacity with merchant demand to provide transparent inventory, order fulfilment and final delivery). Source: <https://cnb.cx/3GtyFic>

### Source

<https://www.talend.com/resources/what-is-data-as-a-service/>

<sup>7</sup> <https://www.us.jll.com/en/trends-and-insights/cities/how-faster-deliveries-could-open-the-door-to-on-demand-warehousing>

## 18. The future warehouse will be more automatized

### Description

Supporting human staff, in-store robots take care of crucial chores like running price checks, monitor stocks availability, report hazards and issues to human employees, and even perform grocery-picking and packaging for customers. Employees now have more time to offer specialized expertise to customers. Warehouse robots move 4 times faster and 5 times higher than the industry standard, they can move in 3 dimensions at 10 mph and can pack and prepare orders. The robotic system allows to achieve a 4-fold improvement in product picks per hour compared to those carried out manually by humans and a 2-fold improvement compared to those performed with “classical automation.”

### Developments

The newest models of robots are already getting upgrades, and are coming equipped with machine vision algorithms able to capture and analyse images and video and respond accordingly. New technology is enabling them to analyse and interpret unclear areas and clean by themselves, understand when customers enter the store and greet them, and take photos of new cartons, analysing items in the box and moving them to the right shelves.

### Plausibility and Uncertainties

The plausibility of the trend is in principle high, but there are at least four barriers.

- 1) *Fear of change*. Organisations have spent years refining their manufacturing processes, picking lines and production processes to be as efficient as possible.
- 2) *High upfront costs*. There is a preconceived notion that complex, sophisticated technology has to come with high initial capital costs in terms of the technology itself and the costs involved with training employees to use the equipment.
- 3) *Lack of flexibility within the solution*. Somewhat related to the initial high capital costs fear is the fear that once you've committed to a solution, there is little scope to deviate from what was decided at the start.
- 4) *Machines replacing staff* (social and organisational problems). Lastly, organisations tend to be fearful that automation systems and robotics are there to take over people's jobs and lay off staff.

### Delphi outcomes

- In 2040, more than 80% of the large-scale logistics warehouses managed by e-commerce platform operators (e.g. Amazon, Alibaba) will have reached full automation. This trend is considered **likely to happen**.

#### Supporting arguments:

- Automation in warehousing offers extreme convenience when it comes to cutting down overall business costs and reducing errors in product deliveries. Source: <https://bit.ly/3EJPBkk>
- More and more warehouses across Europe are adopting robotics technology: e.g.: French start up Exotec Solutions built an automated robot called Skypods to optimize e-commerce warehouses, Dublin-based Eiratech Robotics offers a complete goods-to-person robotics automation platform for multiple applications, including e-fulfilment, materials handling, kitting, and retail etc. Source: <https://bit.ly/3IALERn>

### Source

<https://www.forbes.com/sites/gregpetro/2020/01/10/robots-take-retail/?sh=3d988e01720d>

<https://www.shdlogistics.com/robotics-automation/four-barriers-automation-and-robotics>

## 19. Time do delivery becomes the key warehousing competitive advantage

### Description

Price is no longer the main competitive differentiator. How long it takes to receive an item is becoming just as important, as Amazon has shown the industry. Fulfilment responsiveness (the time it takes from order receipt to final delivery) will increase over the next years. In a recent study, 77% of respondents reported they expected it to increase in importance, significantly higher than the results for the same question just a year before<sup>8</sup>.

### Developments

A “new normal” has emerged when it comes to the delivery speed that customers expect in ordering online. The standards have been re-set by the likes of Amazon and several other market leaders, placing increasingly more pressure on incumbent players to respond accordingly.

### Plausibility and Uncertainties

The trend towards rising pressures towards reducing time-to-deliver is less likely to reverse in the next future. In principle, it is possible for the retail sector as a whole to address successfully this challenge; for example, using the retail dense network of warehouses. Indeed, one central requirement for same-day delivery is simple, yet challenging: a dense network of warehouses. In Germany, for example, it would take 11 well-placed warehouses that stock the same assortment and are able to move it from click-to-ship in two hours or less to cover all tier-1 and tier-2 cities. However, to fully benefit from their network, omnichannel retailers will need to consider changing gears in four areas: the local fulfilment network, quick and integrated IT systems, new store layouts and processes, and a rethink of business economics.

### Delphi outcomes

Not provided

### Source

[https://www.mckinsey.com/~media/mckinsey/industries/retail/our%20insights/future%20of%20retail%20operations%20winning%20in%20a%20digital%20era/mck\\_retail-ops-2020\\_fullissue-rgb-hyperlinks-011620.pdf](https://www.mckinsey.com/~media/mckinsey/industries/retail/our%20insights/future%20of%20retail%20operations%20winning%20in%20a%20digital%20era/mck_retail-ops-2020_fullissue-rgb-hyperlinks-011620.pdf)

---

8

[https://www.mckinsey.com/~media/mckinsey/industries/retail/our%20insights/future%20of%20retail%20operations%20winning%20in%20a%20digital%20era/mck\\_retail-ops-2020\\_fullissue-rgb-hyperlinks-011620.pdf](https://www.mckinsey.com/~media/mckinsey/industries/retail/our%20insights/future%20of%20retail%20operations%20winning%20in%20a%20digital%20era/mck_retail-ops-2020_fullissue-rgb-hyperlinks-011620.pdf)

## 20. E-commerce boom will increase the need of more warehouse space

### Description

E-commerce sales across Europe are expected to increase by \$298bn from 2020 to 2025, requiring thousands more industrial warehouses and distribution spaces to meet the growing demand<sup>9</sup>.

### Developments

The CBRE, a real-estate consultancy agency, estimates that every additional \$1bn (£700,000m) of e-commerce sales globally requires 1 million square feet of new distribution space. The UK is predicted to need an extra 60 million square feet of warehousing space by 2025.

Total e-commerce sales across Europe increased by 150% over the last five years, with online sales rising from 7% of the total sales market in 2015 to 13% of the market in 2020, the property company found.

In UK, currently the third highest e-commerce penetration ratio globally at 24%, after South Korea (36%) and Mainland China (27%), and is expected to remain one of the largest e-commerce markets. By 2025, e-commerce penetration in the UK is forecast to be 32%. To forecast growth, CBRE looked at drivers including the percentage of the population living in urban areas, debit and credit card use, digital skills, and infrastructure. The impacts on soil consumption will be significant.

The expanding global warehouse footprint, along with the rise of fulfilment centres, will also require a 50% increase in staffing by 2025. Piece-picking orders are far more labour-intensive as compared with palletized distribution centres. Together with the challenges presented by COVID-19, competition for labour has been tight in some markets. This is where automation projects to facilitate the increased volumes and decreased delivery times have surged. Still, with an estimated 60% all warehouses being operated in regions where the cost of labour cost is under \$10 per hour, this very much remains a manual enterprise

### Plausibility and Uncertainties

The trend is considered plausible, but technological developments and organisational changes, as the rise of point-of-sales network, dark stores, proximity storage centres, could reduce the pressure toward soil and warehouse demand.

#### Supporting arguments:

- E-commerce sales across Europe are expected to increase by EUR 265.22bn (USD 298bn) from 2020 to 2025, requiring thousands more industrial warehouses and distribution spaces to meet the growing demand. Source: <https://bit.ly/3oJsKzN>

### Source

<https://www.cityam.com/some-300-million-extra-square-feet-of-warehouse-space-needed-in-europe-to-support-e-commerce-boom/>

<https://www.interactanalysis.com/28500-warehouses-to-be-added-globally-to-meet-e-commerce-boom/>

## 3.4 LOGISTICS

### 21. Artificial Intelligence (AI) and Internet of Things (IoT) will be part of the logistics industry

#### Description

As stressed by logistics operators' reports, looking ahead, Artificial Intelligence (AI) has the potential to significantly augment current logistics activities from end to end. As in other industries, AI will fundamentally extend human efficiency in terms of reach, quality, and speed by eliminating mundane and routine work. This will allow logistics workforces to focus on more meaningful and impactful work. The evolution of modern technology has been pushing the boundaries in logistics and supply chain and has made a significant impact in recent decades. In the next future, technological advances such as AI, Internet of Things (IoT), advanced data analytics, etc have taken the industry to levels never imagined, exerting a strong trend towards costs reduction. .

#### Developments

AI is once again set to thrive; unlike past waves of hype and disillusionment, today's current technology, business, and societal conditions have never been more favourable to the widespread use and adoption of AI.

#### Plausibility and Uncertainties

But AI is still in its infancy, even if its marketing has reached maturity. A key challenge facing the progress of AI is that individuals do not trust it, largely thanks to the hype generated by the media and marketing messages from vendors of AI solutions. Much of the coverage and portrayal of AI in the popular press has focused on the concept of super-human machine intelligence also termed as "super intelligence".

#### Delphi outcomes

- In 2040, in the EU, most large retailers will rely on just-in-time logistics enabled by predictive analytics. This trend is considered **likely to happen**.

#### Supporting arguments:

- 93% of shippers and 98% of third-party logistics firms feel like data-driven decision-making is crucial to supply chain activities, and 71% of them believe that big data improves quality and performance. Source: <https://bit.ly/31QnxNL>
- Just-In-Time logistics allows supply chain management companies to save on inventory costs and allow more usable space in their warehouses for components that are ordered more variably. Source: <https://bit.ly/3IFj1SY>
- Amazon's anticipatory shipping predicts when, where and which items will be purchased by customers based on the history of buying habits in a particular area. Source: <https://bit.ly/31QnxNL>

#### Source

<https://www.dhl.com/content/dam/dhl/global/core/documents/pdf/glo-core-artificial-intelligence-trend-report.pdf>

<https://blog.orkestrascscs.com/how-to-achieve-sustainable-cost-savings-in-logistics-through-technology>

## 22. The trend toward zero-emission vehicles in urban area delivery will grow

### Description

By 2040 all last mile delivery vehicles in European urban areas, not only in historical centres, could be at zero emissions. Due to the growing pressures to reduce supply chains' impacts on the environment, policy makers and local authorities decide to ban the use of combustion-engine vehicles in last-mile delivery in EU urban areas. The adoption of restrictive regulative measures (access restriction measures), incurs in significant cost pressures on the overall logistic sector.

### Developments

Good first and last mile options can make it easier to cover the distance before and after the main part of the trip and increase the flexibility of the supply of sustainable modes, thereby improving their attractiveness and increasing their service area. They allow more destinations to be reached within the same time budget. As urban areas are focal points in the transport network, F/L/O mile options — even if they are used in an urban context — are also relevant for longer distance transport, as they may influence the choice made for longer distance trips both for passenger and freight transport.

There is indeed a growing interest of measures and initiatives in EU urban areas leading to make the first and last mile green and sustainable. Among the most significant measures, vehicle access restriction measures<sup>10</sup> could provide a wide range of options (Low Emission Zones, Congestion charges, Zone 30, etc), whose final result is reducing or banning at all polluting vehicles from last mile consignments and delivery.

Furthermore, technological developments, as the advent of clean and electric autonomous vehicles, could contribute to the achievement of zero-emission logistics in urban areas.

### Plausibility and Uncertainties

The trend towards zero-emissions vehicles in logistics may be in part achieved, having 2040 as a time horizon. Though, it is necessary to take into account the increase in emissions from the production of hydrogen engines, electric vehicles, hybrids and their components (batteries, etc.) which could hamper the overall objective of zero-emission (if considered under a life-cycle approach).

### Delphi outcomes

- In 2040, in the EU, more than 50% of heavy goods vehicles (above 3.5 tones) will be zero-emission. This trend is considered **likely to happen**.

#### Supporting arguments:

- EU's commitment to net zero greenhouse gas emissions by 2050 must bring emissions from inland freight transport down close to zero. Source: <https://bit.ly/3lCDuYt>
- The UK government has announced that all new heavy goods vehicles (HGVs) in the UK will be zero-emission by 2040. Source: <https://bit.ly/3lWIKh3>
- In 2040, more than 50% of goods will be moved across borders by autonomous transportation (e.g. autonomous trucks, autonomous vessels, cargo drones). This trend **might happen**, if technical development and social awareness arise.

### Source

<https://www.eea.europa.eu/publications/the-first-and-last-mile>

<sup>10</sup> <https://urbanaccessregulations.eu/stakeholders/uvar-data-available>



### 23. Circular economy models (reverse logistics) will be significant

#### Description

The trend towards circular economy is linked to reverse logistics, which focuses on the process of returning goods from the consumer to the point of origin for replacement, refurbishment, recycling, redistribution or clean disposal. In some cases, extraction and re-use of their useful organic materials are possible.

With today's focus on efficiency, productivity and saving the planet, global businesses are seeking new ways to operate. Looking for an alternative to the traditional make-use-dispose business model, modern organizations are embracing approaches that reduce the consumption of raw materials and energy.

The circular economy concept, in which resources are used and re-used for as long as possible to design waste out of the cycle and preserve the natural environment, is being touted as a game-changing, sustainable tool for economic growth.

It is estimated that a circular economy could reap more than €4 trillion in economic benefits for China that lead to reduced emissions and cleaner air. In Europe, the savings are estimated at €600 billion with a further €1.8 trillion in economic benefits.

#### Developments

The circular economy is directly linked to reverse logistics, which focuses on the process of returning goods from the consumer to the point of origin for replacement, refurbishment, recycling, redistribution or clean disposal. In some cases, extraction and re-use of their useful organic materials are possible.

#### Plausibility and Uncertainties

The trend towards the application of circular economy principles in logistics is well established. Pre-conditions to its further implementation are collaboration and integration of innovations. Return of products and recovery will indeed depend on joint solutions. Thus, trends such as the Internet of Things (IoT) can accelerate a transition to a circular economy. Combining intelligent assets with logistics infrastructure will enable asset tracking during the use phase and facilitate product return as well as recovery planning.

#### Delphi outcomes

- In 2040, in the EU, reverse logistics (i.e. operations related to the reuse of products and materials) will represent over 30% of the logistics sector. This trend is considered **likely to happen**.

#### Supporting arguments:

- A solid reverse logistics plan can help meet sustainability goals, improving a company's social profile. Source: <https://bit.ly/30gFncb>
- By collecting old distributed products, clothing companies like H&M, G-Star Raw, and other retail companies reuse the products and transform the old components into new material, reducing both waste and costs of production. Source: <https://bit.ly/3GBYUn>
- Automated packaging and labelling facilities will be used to prepare returned products for resell, reuse, or recycling. Source: <https://bit.ly/3dHCBQ8>
- The global reverse logistics market valued EUR 565.68 billion (USD 635.6 billion) in 2020 and is projected to reach EUR 852.88 billion (USD 958.3 billion) in 2028, registering a CAGR of 5.6%. Source: <https://bit.ly/3rVR82U>

#### Source

<https://lot.dhl.com/glossary/circular-economy/>

## 24. Climate extremes and associated natural disasters will affect global supply chains

### Description

Extreme weather events also hit supply chains when workers are unable to physically get to their jobs. Workplace disruptions caused by climate change could lead to more than \$2 trillion in productivity losses by 2030, according to a recent report from the United Nations Development Program<sup>11</sup>. According to such scenario, productivity losses related to climate-change-related workplace disruption in the United States could rise to above \$2 trillion by 2030.

In Europe, impacts and vulnerability caused by climate change impacts occurring outside Europe have indirect cascading effects on European territory. The EEA report<sup>12</sup>, identifies six major pathways based on the available literature:

- (i) the trade of agricultural commodities
- (ii) the trade of non-agricultural commodities
- (iii) infrastructure and transport
- (iv) geopolitics and security risks
- (v) human migration
- (vi) finance

### Developments

Climate change will continue for many decades to come. The scale of future climate change and its impacts will depend on the effectiveness of implementing our global agreements to cut greenhouse gas emissions, but also ensuring that we have the right adaptation strategies and policies in place to reduce the risks from current and projected climate extremes.

### Plausibility and Uncertainties

Experts agreed that the occurrence of climate change extremes weather events is likely to come. Uncertainties lies rather on the mitigation side. Mainstreaming of climate change adaptation into other policies is progressing but can be further enhanced. Possible further actions include improving policy coherence across different policy areas and governance levels (EU, transnational, national and subnational), more flexible adaptive management approaches, and the combination of technological solutions, ecosystem-based approaches and 'soft' measures.

### Delphi outcomes

- In 2040, climate extremes and associated natural disasters will disrupt global supply chains multiple times throughout the year. This trend is considered **likely to happen**.

#### Supporting arguments:

- According to the World Meteorological Organization (WMO), the number of disasters has increased by a factor of five over the 50-year period, driven by climate change, more extreme weather etc. Source: <https://bit.ly/3lChHQJ>
- Extreme weather events are also affecting supply chains when workers are unable to physically get to their jobs. According to UNDP, workplace disruptions caused by climate change could lead to more than EUR 1.78 trillion (USD 2 trillion) in productivity losses by 2030. Source: <https://cnb.cx/3GC27Tc>
- Wildfires in the American West, flooding in China and Europe and drought in South America are already disrupting supplies of everything from lumber to chocolate to sushi rice. Source: <https://cnb.cx/3GC27Tc>

### Source

<https://www.cnn.com/2021/08/19/climate-change-supply-chain-disruptions-how-to-prepare.html>

<sup>11</sup> <https://www.un.org/sustainabledevelopment/climate-change/>

<sup>12</sup> <https://climate-adapt.eea.europa.eu/knowledge/eu-vulnerability>

## 25. A systematic driver shortage is to be expected

### Description

In Europe and the US, a tight labour market remains one of the overriding challenges for warehouse and logistics operations managers. The inability to attract and retain a qualified hourly workforce is a critical issue, and in the future multiple methods of strengthening logistics workforces will be necessary, ranging from increasing pay, to offering enhanced training and benefits. Investing in operatives, for instance, by offering personal development and soft skills training opportunities, will be essential for companies to attract and retain the people they need to achieve their e-commerce and omnichannel expansion goals.

### Developments

Looking forwards, driver shortage, currently 63,000 in the US market, could increase to 174,000 by 2026. Demography is a prime factor in the shortage. Truck drivers are, on average, about seven years older than the typical American worker. As they retire, they are not being replaced. Europe as well faces a systematic shortage of HGV drivers – thanks to a sector defined by low pay and poor conditions, according to the European Transport Federation.

### Plausibility and Uncertainties

Drivers' shortage in logistics is highly plausible. The driver shortages have been affecting the global road freight market for around 15 years<sup>13</sup>. The issue comes as the pool of truck drivers is contracting but demand for transport is rising. The COVID-19 pandemic has further exacerbated the already alarming issue of driver shortages as new drivers have been unable to train and take their tests and Covid restrictions make the job even less attractive.

Even before the pandemic a serious cause for concern in the industry, the lack of drivers in the road transport industry was at an all-time high with many of its underlying issues being long-term challenges. Factors such as an aging workforce and insufficient numbers of new recruits, due to working conditions and image issues of the profession, have been plaguing the industry for many years. Policies to address drivers' shortage range from better working conditions to EU financial mechanisms and incentives to ensure the necessary policies and funding.

### Delphi outcomes

Not provided

### Source

<https://www.mckinsey.com/industries/travel-logistics-and-infrastructure/our-insights/distraction-or-disruption-autonomous-trucks-gain-ground-in-us-logistics#>

<https://etf-europe.org/european-truck-driver-shortage-only-way-forward-is-good-pay-and-conditions/>

<https://supplychaindigital.com/supply-chain-2/six-trends-shaping-warehouses-future>

<sup>13</sup> <https://www.ti-insight.com/briefs/europes-road-freight-market-short-of-more-400000-drivers/>

## 26. EU regulation will address market fragmentation for parcel delivery (cross-border logistics)

### Description

The EU regulation on cross-border parcel delivery services entered into force on 22 May 2018. However, still existing issues of fragmentation for cross-border logistics and lack in the attainment of single market for parcel delivery may determine a growing trend towards more EU regulation.

### Developments

Certain high prices and inconveniences of cross-border parcel delivery have been identified as being among the main obstacles to greater uptake of e-commerce among European consumers and retailers. Research shows that cross-border parcel delivery prices charged by universal service providers can be almost 5 times higher than domestic parcel delivery prices<sup>14</sup>.

As complementary measures were needed, particularly in the areas of price transparency and enhanced regulatory oversight, the Commission presented a legislative proposal on a regulation on cross-border parcel delivery services as part of the e-commerce package in May 2016.

### Plausibility and Uncertainties

EU regulation could ensure a level playing field for the EU postal and e-commerce sector. The road to the completion of the Single Market for parcel operators faces several uncertainties. Beside EU and national postal regulations, the EU postal sector has to comply with global postal regulations and policies external to the postal sector. Policies at EU level should provide flexibility for Member States to design postal policies at national level. These may include reviewing and reducing the scope of the Universal Service Obligations where needed.

Moreover, policies at EU and national level should provide more flexibility to Universal Service Providers on how to provide and price the Universal Service Obligation.

These policies might constrain the EU postal sector's profitability and impact social welfare:

- (i) Assessing the EU-wide impact of the significant reforms introduced to the Universal Postal Union terminal dues system, as well as a future united position of EU Member States in the Universal Postal Union is likely to bring a better understanding on how to protect EU consumers' needs and provide a stronger negotiating position.
- (ii) Regulators should be ensured that any exemptions granted to Universal Service Providers in transportation regulations, VAT, and customs procedures are economically justified and do not harm other postal operators. Also, it is important to ensure that differences in national policies do not create unfair competition and degradation of social conditions within the EU.
- (iii) Regulators should ensure that any regulations in related areas do not create barriers for innovation and development of new technologies and services.

### Delphi outcomes

Not provided

### Source

[https://ec.europa.eu/growth/sectors/postal-services/parcel-delivery-eu\\_it](https://ec.europa.eu/growth/sectors/postal-services/parcel-delivery-eu_it)

[https://www.europarl.europa.eu/RegData/etudes/STUD/2019/629201/IPOL\\_STU\(2019\)629201\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2019/629201/IPOL_STU(2019)629201_EN.pdf)

<sup>14</sup> [https://ec.europa.eu/growth/sectors/postal-services/parcel-delivery-eu/assessment-cross-border-single-piece-parcel-tariffs\\_en](https://ec.europa.eu/growth/sectors/postal-services/parcel-delivery-eu/assessment-cross-border-single-piece-parcel-tariffs_en)

## 27. Drones will play a key role in last-mile delivery

### Description

Drones, originally developed and used for military purposes, have found applications in many civil sector areas during the last decade. Although often referred to as 'remotely piloted aircraft systems' or 'unmanned aircraft/vehicles/systems', drones are commonly defined simply as flying objects or 'robots' with no pilot on board (Santamarina Campos, 2018). The European Aviation Safety Agency (EASA) defines a drone as: "An aircraft without a human pilot on board, whose flight is controlled either autonomously or under the remote control of a pilot on the ground or in another vehicle".<sup>15</sup>

### Developments

Drone technology is evolving at a very fast pace and has increasing potential to compete successfully with more traditional alternatives in a number of sectors beyond retail and delivery. Such sectors include research, observation and monitoring, nature conservation, agriculture, emergency response for humanitarian action and civil protection, leisure, competitive sports, tourism and cultural heritage, cinema and photography. This potential is reflected in the exponential growth of drone-related markets recently, benefiting both manufacturers and service providers. In 2016, approximately 2.2 million drones were sold for personal and commercial use worldwide (Gartner, 2017). Some specialised analysts consider that the global drone market could grow from USD 14 billion in 2018 to USD 43 billion in 2024 (Drone Industry Insights, 2019)<sup>16</sup>. However, at present, the sale of customer drones (for personal use) is much higher than that of commercial drones, which include delivery drones. In Europe, the estimated number of commercial drones operating in 2016 was 10 000 units, compared with 1-1.5 million consumer drone units<sup>17</sup>.

### Plausibility and Uncertainties

The plausibility of a significant penetration of drones in last mile deliveries in urban areas is questionable. We are indeed dealing with a technology with uncertain potential for reducing greenhouse gas emissions from e-commerce and the logistics industry and concerns over increased noise pollution and threats to wildlife.

### Delphi outcomes

- In 2040, in the EU, 30% of last-mile deliveries will be performed by ground delivery bots or drones. This trend is **not likely to happen**, unless technological and regulative constraints are addressed.

#### Supporting arguments:

- More and more retailers are beginning to use autonomous drone technology for last-mile deliveries - e.g. Tesco (UK), AHA (Iceland), Siroop (Switzerland) etc. Sources: <https://bit.ly/3ITiltU>; <https://bbc.in/3pLNfel>
- Drone deliveries are faster and 90% less expensive than car-based services. Sources: <https://bit.ly/3GyuSQL>; <https://bit.ly/3dEckIV>
- Countries like the United States, Japan, China, and several other European countries have a considerable number of services that are already using autonomous delivery robots for last mile deliveries. Source: <https://bit.ly/3IHvy8z>

### Source

<https://www.irishpost.com/news/ireland-become-first-country-europe-deliver-fast-food-drone-180308>

<sup>15</sup> <https://www.eea.europa.eu/publications/delivery-drones-and-the-environment>

<sup>16</sup> <https://droneii.com/>

<sup>17</sup> [https://www.sesarju.eu/sites/default/files/documents/reports/European\\_Drones\\_Outlook\\_Study\\_2016.pdf](https://www.sesarju.eu/sites/default/files/documents/reports/European_Drones_Outlook_Study_2016.pdf)

## 3.5 E-COMMERCE

### 28. “Click-and-collect” services become more relevant

#### Description

Click and collect is when a customer orders a product online and then picks it up in the store. The COVID-19 pandemic acted as a forcing function for consumers—especially among the older cohorts—to try out new shopping formats and obtain essential goods during lockdown periods. Click and collect is not a new service, and is in fact well established in the United Kingdom and continental Europe—but it became an essential channel offering for retailers during the pandemic. Initially, its adoption was accelerated due to safety concerns, but it has evolved into a convenience factor for many shoppers. With the advantages of being faster and cheaper than delivery service, click and collect is overtaking in-store shopping as well as online delivery shopping. This favours retailers with a local physical presence.

In the United Kingdom, improved online capability and click and collect purchases helped to lessen the impact of declining non-essential retail sales during the second lockdown when compared to the first one, and food retailers suggested that click and collect orders had boosted their online sales.<sup>18</sup>

#### Developments

Is the trend likely to continue? It is unlikely that traditional retail channels will return to ‘normal’ after the pandemic is over. It is likely that they will need to continue to keep up with evolving consumer preferences and invest in areas such as:

- Physical presence: Store layout and parking space configuration
- Human capital: Hours and staffing changes
- Operational strategies: Fulfilment and digital capabilities

#### Plausibility and Uncertainties

The plausibility of the trend appears to be influenced by the retail sector structure and product category: groceries, fashion, retailers with accessibility or proximity to consumers

#### Delphi outcomes

- In 2040, in the EU, click-and-collect sales will account to at least 30% of retail ecommerce. This trend is considered **likely to happen**

#### Supporting arguments:

- Many retailers (including Lidl, Aldi, Auchan, Carrefour, Sainsbury’s etc.) already have different click-and-collect services to tap into growing customer demand for super-fast delivery. Sources: <https://bit.ly/3lBpl8y>; <https://bit.ly/3EKfZdG>; <https://bit.ly/3pPgjBw>; <https://bit.ly/3lBpl8y>
- According to an Adobe research, currently 23% of online shoppers prefer some form of click-and-collect over having orders delivered to their homes. Source: <https://bbc.in/3EMiTic>

#### Source

<https://www.retail-week.com/grocery/lidl-launches-online-collection-lockers-at-uk-stores/7034864.article>  
<https://www.retail-week.com/grocery/aldi-to-roll-out-click-and-collect-to-200-stores-before-christmas/7036182.article>  
<https://dataimpact.io/2021/04/06/france-cpg-grocery-curbside-pickup-model/>

<sup>18</sup> <https://www2.deloitte.com/global/en/pages/consumer-business/articles/global-retail-digitized-route-likely-to-continue.html>

## 29. Digital sales benefit of social channels

### Description

According to GlobalWebIndex, 54% of social media users use social media to research products and 71% are more likely to purchase products and services based on social media referrals. The Social Media Advertising market is the second biggest market within Digital Advertising. The worldwide revenue of US\$153.7 billion in 2021 is expected to grow to US\$252.6 billion in 2026<sup>19</sup>.

### Developments

World's largest start-up moving aggressively into e-commerce. ByteDance is moving aggressively into a \$1.7 trillion Chinese e-commerce arena in hopes of adding another mega-growth story to its stable ahead of a much-anticipated initial public offering. It aims to handle more than \$185 billion of e-commerce annually by 2022, building on the reach of social media wunderkinds TikTok and Douyin. Unlike Chinese rivals Alibaba Group Holding Ltd. or Tencent Holdings Ltd., ByteDance's apps also enjoy a broad global fan base and co-founder Zhang Yiming wants to use that as a springboard into the game of online commerce. TikTok partners with brands to test in-app shopping in Europe, Reddit is developing an in-house agency to help with brand strategy, Pinterest will host a three-day livestream event with creators via its app, Twitter is reportedly working on new paid tweet options, Facebook Workplace shares a guide for hosting effective livestream company events and more.

### Plausibility and Uncertainties

The trend is likely to continue. Possible uncertainties rely on the persistent willingness of the user's engagement in digital commerce, given the prevailing social nature of the media. Possible conflicts may arise between the social and marketing dimensions. For example, about half of US adult social media users have made a purchase via social media in the past year. But few users agree that they feel confident with the idea<sup>20</sup>.

### Delphi outcomes

- In 2040, in the EU, 30% of digital sales take place via a social network. This trend is considered **likely to happen**, even if the order of magnitude may be overstated.

#### Supporting arguments:

- Many social media platforms including Tik Tok, Instagram, Reddit or Pinterest have partnered with different brands to test in-app shopping in Europe. Source: <https://bit.ly/3oIQN1F>
- According to GlobalWebIndex, 54% of social media users use social media to research products and 71% are more likely to purchase products and services based on social media referrals. Source: <https://bit.ly/3EMSNeQ>

### Source

<https://www.alistdaily.com/social/social-media-news-051721/>

<https://www.bloomberg.com/news/articles/2021-05-11/tiktok-begins-testing-in-app-shopping-to-challenge-facebook>

<sup>19</sup> <https://www.statista.com/study/36294/digital-advertising-report-social-media-advertising/>

<sup>20</sup> <https://www.emarketer.com/content/digital-trust-social-commerce-2021>

### 30. Neighbourhood stores/small groceries shops will be using smart point-of-sale enabled by ecommerce platform/retail giants/tech companies

#### Description

The idea is to put fulfilment centres in densely populated areas to shorten delivery times and provide a faster and more convenient shopping experience. A dark store is a retail space that is not open for in-store shopping. Like ghost kitchens, dark stores have been developing to exclusively fulfil online orders, also from big vendors like Amazon. Dark stores may also be known as dark supermarkets. In the U.K., where they first appeared, some dark stores are known as dotcom centres—particularly when they offer click-and-collect services.

#### Developments

Recently, Amazon announced a new Small Business Awards program aimed at celebrating small businesses with Amazon seller or vendor accounts. According to the press release, Amazon intends to invest more than \$15 billion this year to help third-party sellers grow through the Amazon platform. “We want to see small businesses across the country thriving like never before. We are committed to helping them harness the power of online sales, reach new customers, and provide fantastic selection, value and convenience,” says Nicholas Denissen, Amazon Vice President of Small Business<sup>21</sup>. The advantage of small retailers has always been the ability to provide a customer experience that’s unmatched at a large scale. Amazon says it is working to help small companies “operate at Amazon speed and scale” by taking a large portion of the logistics off their plate, according to Joel Sider, Amazon’s Sr. Manager, Communications. The company’s global fulfilment network stores, picks, packs, and ships orders, freeing up small retailers to focus on customers and business strategy.

One such example is the brand Hope & Henry, which sells organic cotton clothing. Harnessing Amazon’s services, the brand is able to keep prices low while sharing profit with clothing makers overseas. The business got its start on Amazon, using the platform to tell its brand story and build a customer base. The brand is now expanding into “brick and mortar” stores.

#### Plausibility and Uncertainties

Partnerships between small stores and big on-line vendors is likely to continue in the future, even if the order of magnitude is difficult to estimate.

#### Delphi outcomes

- In 2040, in the EU, over 50% of neighbourhood stores/small groceries shops will be using smart point-of-sale systems (which provide data-backed real-time alerts and suggestions for action), enabled by ecommerce platform/retail giants/tech companies trying to extend their dominance to offline retail. This trend is considered **likely to happen**, even if the order of magnitude may be overstated.

#### Supporting arguments:

- Amazon is ramping up efforts to encourage small and medium-sized businesses to partner with the brand. For instance, the Amazon Small Business Academy programs are helping small businesses harness the power of the internet to reach more customers, build their brand, and grow sales. Source: <https://bit.ly/3ysFFJq>
- In 2020, Alibaba Group announced it would extend its digital operating system to 1.5 million small neighbourhood stores in China. Source: <https://bit.ly/3s9GBRZ>

#### Source

<https://reeftechnology.com/retail/what-is-a-dark-store>

<sup>21</sup> <https://www.forbes.com/sites/brockblake/2019/09/23/amazon-friend-or-foe/?sh=16c0b1df7367>



### 31. Online channels sustain reselling markets

#### Description

When recycling becomes a transaction, reselling becomes a moral decision that fits with shopper values. This creates an opportunity for retail organizations to enable shoppers to make the conscious purchasing decisions they want to make. The European online fashion and lifestyle platform Zalando recently launched a preowned offer enabling customers to buy preowned fashion. The preowned service matches the added items service – with the same returns policy and shopping experience.

#### Developments

Collectively, the resell market – online resale and traditional thrift stores combined – is now predicted to reach \$80 billion by 2029. This expansion is being accelerated by the impact of COVID-19 and younger shoppers, with 80% of Gen Z consumers seeing no stigma attached to second-hand shopping – more than any other age group<sup>22</sup>.

In China, Alibaba Group's used-goods marketplace Idle Fish, for example, has more than 200 million registered users – over half of them born after 1990. The platform, part of the country's e-commerce ecosystem, offers both a C2C and a B2B channel, as well as allowing brands to set up certified stores to sell used goods, sample items, second or surplus stock directly to consumers. China's second-hand sales now exceed US\$154 billion annually and are going upmarket<sup>23</sup>.

Elsewhere, Poshmark – an online marketplace for second-hand goods – raised \$277 million from its IPO at the start of 2021 on its public debut.

#### Plausibility and Uncertainties

Online vendors can facilitate the development of second-hand markets, in particular in the fashion market segment. Positive environmental implications can be considered, even of the extent to which the second-hand market is going to increase is difficult to evaluate. Factors as the possible reduction in the consumers' purchasing power should be also considered.

#### Delphi outcomes

- In 2040, in the EU, the resale/second-hand sector of fashion will reach at least 30% of the fashion market share. This trend **is not likely** to happen, even if the order of magnitude may be overstated.

#### Supporting arguments:

- European online fashion and lifestyle platform Zalando recently launched a preowned offer enabling customers to buy preowned fashion. The preowned service matches the new items service – with the same returns policy and shopping experience. Source: <https://accentu.re/3pKGxp0>
- Second-hand fashion is estimated to grow more than any other fashion sector by 2030, to reach 18% market share. Source: <https://bit.ly/33kBGmV>

#### Source

[https://www.accenture.com/\\_acnmedia/PDF-152/Accenture-POV-06-Full-Report-Retail-Experience-Reimagined.pdf](https://www.accenture.com/_acnmedia/PDF-152/Accenture-POV-06-Full-Report-Retail-Experience-Reimagined.pdf)

<sup>22</sup> [https://www.accenture.com/\\_acnmedia/PDF-152/Accenture-POV-06-Full-Report-Retail-Experience-Reimagined.pdf](https://www.accenture.com/_acnmedia/PDF-152/Accenture-POV-06-Full-Report-Retail-Experience-Reimagined.pdf)

<sup>23</sup> Hobose: New China AR App Gives Personalized Food & Dietary Advice While You Grocery Shop (Green Queen, November 30)

## 32. Digital customers prefer subscription models

### Description

Digital customers prefer a subscription-based business model to a one-time payment. It makes them confident about their spending. Also, e-commerce owners find it an easier way to onboard new users and make them come to the shop repeatedly. This e-commerce model has been getting popular over the past years.

### Developments

Subscription businesses—in which consumers periodically pay a predetermined amount for a service or set of goods—have emerged as one way to use data to reimagine retail businesses. Collectively, they grew more than 300 percent from 2012 to 2018, about five times faster than revenues of S&P 500 companies. According to data gathered by subscriptions-logistics provider CaaSle, one apparel player reported that their rental subscribers spent on average 2.5 times more than their traditional brand (non-subscription) consumers.<sup>24</sup>

### Plausibility and Uncertainties

This is a new trend, and like most new trends long-term development is hard to fathom. Also, now it applies to a few classes of products, so it's hard to extrapolate to all.

### Delphi outcomes

- In 2040, in the EU, over 50% of consumers will use individual/bundled subscriptions instead of repurchasing certain products (pet food, groceries, clothing). This trend is **not likely to happen**, even if the likelihood of future development is difficult to guess.

#### Supporting arguments:

- According to a study, 78% of international adults currently have subscription services (significantly higher than 71% in 2018), and 75% believe that in the future, people will subscribe to more services and own less physical 'stuff'. Source: <https://bwnews.pr/3lCzMOx>
- Bundles that complement each subscription and bridge the gaps in those services will present a more enticing option to customers (e.g. Front Point and SimpliSafe's home security subscription, both combine physical home security products with a monitoring subscription). Source: <https://bit.ly/3lU8Wrx>
- Consumer subscriptions for physical goods will grow from an expected EUR 57 billion (USD 64 billion) in 2020 to more than EUR 234 billion (USD 263 billion) in 2025. Source: <https://bit.ly/3EGxtaS>
- Whistl has found that 38% of the UK population has used a subscription box service of which 45% of females use them compared to 30% of men. There is a higher penetration of use in the 18–31-year-old group with 58% using them compared to the over 65-year-olds where only 17% use them. Source: <https://bit.ly/3oGWYgq>

### Source

<https://www.mckinsey.com/business-functions/marketing-and-sales/our-insights/sign-up-now-creating-consumer-and-business-value-with-subscriptions>

<https://vindicia.com/company/in-the-news/study-69-percent-of-consumers-say-they-want-subscription-bundles/>

<sup>24</sup> <https://www.mckinsey.com/business-functions/marketing-and-sales/our-insights/sign-up-now-creating-consumer-and-business-value-with-subscriptions>

### 33. Buy on-line will benefit of Artificial Intelligence (AI) and Virtual Reality (VR) tools

#### Description

From large object visualization at home or in-store to try-as-you-buy online, from virtual fitting-rooms to in-store magic mirrors enticing customers, Artificial Intelligence (AI) and Virtual Reality (VR) solutions increasingly become part of a dynamic, immersive, and interactive on-line customers' journey.

Increasingly popular voice assistants like Amazon's Alexa and Google Assistant are integrated with customers' online accounts to allow for personalized voice shopping, with customers easily and quickly voice-browsing catalogues, pre-ordering goods, and purchasing goods based on current questions, desires, and previous orders.

#### Developments

Voice-controlled shopping is set to explode in popularity over the next four years, according to a new report<sup>25</sup>. While the nascent technology currently has relatively low market penetration and sales, voice shopping is expected to be the "next big thing", like mobile and apps before it.

Bizarre commands such as "Alexa, please buy me some underwear," are likely to become common place in consumers' homes, over the next four years, as voice shopping technology is set to take off. In a recent study, consulting firm OC&C believes that voice shopping sales will surge from a forecasted \$2 billion this year to an estimated \$40 billion in 2022<sup>26</sup>.

#### Plausibility and Uncertainties

The plausibility of the trend is robust, but the order of magnitude of the penetration is difficult to guess.

Uncertainties from the technological point of view are minimal: the growth of voice assistant will be driven by increased use of smart speakers at home, like Amazon's Echo and Google Home.

#### Delphi outcomes

- In 2040, in the EU, sales initiated through live-streaming will account for at least 20% of all e-commerce. This trend is **not likely to happen** in the longer term, even if the order of magnitude may be overstated

#### Supporting arguments:

- According to Social Media Examiner, more than 35% of marketers use live video as part of their social media strategy. Source: <https://bit.ly/3IUptvM>
- It's estimated that by 2021, the live streaming market will reach EUR 62.34 billion (USD 70.05 billion) and will grow to EUR 199.34 billion (USD 223.98 billion) by 2028. Source: <https://bit.ly/31WNXqM>
- 70% of Europeans are open to live shopping. Live shopping customers interested in Europe are mostly between the ages of 32 to 43. Source: <https://ecommercenews.eu/70-of-europeans-are-open-to-live-shopping/>
- Livestreaming is only ecommerce if paid. Ecommerce of Goods was EUR 284.5 billion (2020); would have been EUR 717 billion if total ecommerce. Stats proposed are mixing worldwide & EU data Source: <http://www.portal.euromonitor.com/portal>; <https://ecommercenews.eu/ecommerce-in-europe-e717-billion-in-2020/>

#### Source

<https://www.ill.com.co/es/trends-and-insights/espacios-de-trabajo/augmented-reality-helps-consumers-see-shopping-in-a-whole-new-way>  
<https://www.consultancy.uk/news/16650/voice-shopping-in-retail-expected-to-grow-to-40-billion-by-2022>

<sup>25</sup> <https://www.consultancy.uk/news/16650/voice-shopping-in-retail-expected-to-grow-to-40-billion-by-2022>

<sup>26</sup> <https://findstack.com/live-streaming-statistics/>

### 34. E-commerce growth will continue in the future

#### Description

E-commerce retail sales are expected to increase by almost 17 percent (in CAGR terms) between 2010 and 2024. At world level, as lockdowns became the new normal, businesses and consumers increasingly “went digital,” providing and purchasing more goods and services online, raising e-commerce’s share of global retail trade.

#### Developments

There are at least five components leading to further e-commerce development<sup>27</sup>:

- 1) The higher percentage of the world’s digital population has been accessing the Internet using mobile phones than desktops since last year. Shopping on the go is now a critical aspect of e-commerce, and mobile apps are as much a priority to online merchants as websites.
- 2) Social Media. The promise of free traffic has been very enticing to online merchants. Facebook boasts two billion active users worldwide, and a good percentage of online shoppers are among those users.
- 3) Search Engine Optimization. SEO started with online media, but now e-tailers have recognized the immense value in driving free users to their sites. Unlike search engine marketing where each new customer comes at a marginal cost to the retailer, SEO promotes site traffic through natural search. Today, virtually all online merchants consider search engine optimization a website design priority.
- 4) The Shopping Experience. One of the reasons why customers prefer to shop online than in brick-and-mortar stores is that the internet gives them the chance to weigh their options and get the best deals.
- 5) Faster Payments. Modern payment processing technologies have made completing purchases in online stores as smooth as ever. Thanks to high-risk merchant account providers, customers can conveniently buy products safely and instantaneously using their credit cards.

#### Plausibility and Uncertainties

The plausibility of the trend is robust, even if some factors may hamper the unlimited growth; in particular the threats to on line security of market transaction, cybercrime and privacy issues.

#### Delphi outcomes

- In 2040, 90% of purchases in the EU will be facilitated by e-commerce. This trend is considered **likely to happen**, even if not with such a huge increment.

#### Supporting arguments:

- The penetration rate of e-commerce users in Europe is expected to reach 59.7 percent. This rate breached the 50 percent mark three years ago and is now expected to reach 67.1 percent by 2025. Source: <https://bit.ly/33dQV0J>
- Europe e-commerce market reached EUR 845.41 billion (USD 949.9 billion) in 2019 and will grow by 10.1% annually over 2020-2030 owing to the rising online shopping and digital transactions amid the COVID-19 pandemic. Source: <https://bit.ly/33lnYjG>

#### Source

<https://assets.kpmg/content/dam/kpmg/xx/pdf/2021/01/future-of-retail.pdf>

<sup>27</sup> <https://emerchantbroker.com/blog/five-key-factors-promoting-the-growth-of-e-commerce/>

### 35. Smart appliances and smart objects will populate the homes of the future

#### Description

Homes of the future may be equipped with smart objectives allowing automatic purchase. The washing machine realises that you need to change the filter, orders it and buys it online. The meter buys the energy it needs in real time, to manage a peak in consumption and prevent a loss of power. The connected car which, if parked on a geo-located parking area, "understands" that the user is asking it to make the parking payment. Commonly used objects, which make purchases independently: the last frontier of the Internet of Things, applied to the payment system.

#### Developments

The smart home market in Europe accounted for almost 23 million units in the first quarter of 2021 — growth of 25.6% over the same quarter last year, according to International Data Corporation (IDC).

"The growth in smart home products was visible in all categories," said Antonio Arantes, senior research analyst for smart home devices in Western Europe. "After an almost flat 2020, video entertainment products — smart TVs and digital media adapters — were one of the main contributors to the growth."

"The Central and Eastern Europe [CEE] market recorded double-digit growth of 25.6% and replicated the same behaviour of the whole region, where smart TVs played a major role," said Jan Prenosil, senior research analyst for smart home devices in CEE. "Small appliances posted the most growth in the first quarter of 2021, as smart vacuum cleaners expand and there are more affordable devices on the market. The functionalities and performance of these devices continue to improve, so we expect great interest from customers in the future."<sup>28</sup>

#### Plausibility and Uncertainties

It is plausible to consider the growth of smart appliances, given that the trend it is happening already, and as smart objects will become more common the practice can only increase. However, uncertainties may be related to consumers' attitude: while homes may have smart appliance that affords automated purchases, it does not mean consumers will make use of the new devices. Besides, it is likely that smart objectives will have high prices, raising problem of affordability.

#### Delphi outcomes

- In 2040, in the EU, more than 50% of homes will have at least one smart appliance that does automated purchases for household staples (e.g. groceries, detergent, pet food). This trend is considered **is likely to happen**, even if not with such a huge increment.

#### Supporting arguments:

- The smart home market in Europe accounted for almost 23 million units in the first quarter of 2021 — growth of 25.6% over the same quarter last year, according to International Data Corporation (IDC). The smart home market is expected to continue its growth trajectory, reaching more than 207 million units in Europe in 2025. Source: <https://bit.ly/3IVcjP0>
- Amazon is developing a smart fridge that monitors what's inside and helps order replacements for items that are running low. Brita has a water pitcher that orders replacement filters; and GE has a dishwasher that automatically orders more detergent. Sources: <https://enqt.co/3dCpboG>; <https://cnet.co/3oIQQ5m>

#### Source

<https://www.cnet.com/home/smart-home/weplenish-java-smart-container-shop-for-you-on-amazon-auto-reordering-dash-replenishment/>

<sup>28</sup> <https://www.idc.com/getdoc.jsp?containerId=prEUR148054521>

### 36. E-commerce growth is going to raise environmental concerns

#### Description

Online shopping is becoming more popular worldwide. Trading off positive and negative impacts of the e-commerce, e.g., replacing physical commuting, greener last mile vehicles, paperless transactions, packaging, immediate delivering, item returns, etc, may lead anyway to growing concerns about too much traffic and consignments in urban areas.

#### Developments

According to the 2011 International Conference on Environmental Science and Engineering study<sup>29</sup>, it is stated that “although the potentials of the Internet to save material and energy cannot be denied, it is too early to conclude that e-commerce has only positive impacts on the environment. Each potential positive impact is coupled with a potentially overwhelming negative impact as well.” It should be noted that each e-commerce industry and its respective supply chain could pose its own challenges.

Even though e-commerce business models reduce the number of transportation emissions put into the air by their customers, their delivery trucks and other vehicles (e.g. planes) can still emit large amounts of harmful pollutants. Additionally, the location of the customer to the distribution centre can make a large impact as well. Wholesale businesses are already primed for cutting down transportation emissions, but this is not always possible for businesses operating at different scales. Since there is a large emphasis on the importance of immediacy in business — especially in shipping offerings — businesses may have to send out freights that are only partially full. This will require additional trips and more transportation emissions.

#### Plausibility and Uncertainties

The plausibility of future environmental concerns from the continuous e-commerce growth is understandable. Uncertainties and likelihood of future scenarios depend on the following issues:

1. *Sustainable packaging*: Organizations need to create innovative packaging solutions. What a package is made out of is equally important to how it is made and the way it is shipped;
2. *Sustainable shipping*: As mentioned above, the demand for immediacy is at an all-time high, so it becomes even more important to figure out ways to cut back on the effects of shipping. Aside from creating more sustainable packaging, organizations can take advantage of paperless invoicing;
3. *Supply chain integration*: There are many diverse industries active in e-commerce, but they all have opportunities to reduce wastes and inefficiencies up and down the supply chain through smarter digital integration;
4. *Decreased energy waste*: This category is broad and it encompasses a variety of business factors like switching to solar or outsourcing specific work locally, but there should be an immediate focus on transportation waste.

#### Delphi outcomes

- In 2040, more than 50% of goods will be moved across borders by autonomous transportation (e.g. autonomous trucks, autonomous vessels, cargo drones). This trend **is not likely to** happen, even if technological and safety and security issues persist.

#### Source

<https://linkmobility.com/e-commerce-effects-on-environment-and-economy/>

<sup>29</sup> <https://www.sana-commerce.com/blog/impact-of-ecommerce-on-the-environment/>

### 37. E-commerce growth raises data privacy and security issues

#### Description

In recent years, purchases and sales of products and services via the Internet have grown meteorically. The growth of e-commerce whilst increasingly convenient for sellers and customers alike, may also reveal new risk areas for them both as well. Are transactions secure? Who owns the big amount of data generated during transactions?

#### Developments

It is almost impossible to complete a transaction without sharing your personal data and it is for this exact reason that data privacy has now become one of the most significant and pressing concerns in e-commerce. Naturally then, companies need to reflect on how to approach such a complex topic, namely through defining a privacy policy. An e-commerce privacy policy should become your everyday handbook and should reflect what types of personal data you collect from your site's visitors, how you use this data and how you keep it safe along with any other relevant details about your privacy practices.

In fact, GDPR requires all companies operating in the EU as well as foreign companies that handle personal data of EU citizens to have a Privacy Policy. This is part of the EU's goal to ensure that personal information relating to its citizens is obtained and processed fairly.

#### Plausibility and Uncertainties

The plausibility of security risks is high, and it can affect the e-commerce development. Users may be reluctant to share their personal data if they believe their privacy can be invaded, at risk or shared with third parties without their consent. Unauthorized access to or reuse of their personal data, as well as illegal sale of their private information to other parties, are one of their main concerns. The probability is reasonably high that at least one incident will occur where there is an abuse of, or bad result of, such technology. That will cause considerable pushback and calls for regulation.

Threats affecting an e-commerce site can also compromise personal data from their visitors. These can be accidental, intentional or due to human error. The most typical security and privacy threats include phishing and social engineering, personal or card data theft or misuse, malware, and hacking. Two highly prevalent threats that can adversely impact the personal information of an e-commerce site visitor are phishing and social engineering attacks. With this technique, hackers send emails to customers presenting themselves as a legitimate business and attempting to get users into clicking on malware links or disclosing their personal or card information. Another privacy threat to e-commerce is password and identity theft.

Fortunately, users are more vigilant than ever about their privacy protection and may stop using an e-commerce service if they have the impression that privacy safeguards are not guaranteed.

#### Supporting arguments:

- Privacy preserving technologies using zero-knowledge proofs will enable sharing information without disclosing sensitive PID Information Source: <https://syscoin.org/file/syscoin4-whitepaper.pdf>
- The European Data Protection Board (EDPB) and European Data Protection Supervisor (EDPS) have called for a general prohibition on using Artificial Intelligence (AI) to automatically recognise human features in public because of the risk it poses to fundamental rights and freedoms. Source: <https://bit.ly/3rSFuWz>
- According to "Privacy & Personalization," a study from multichannel behavioural marketing platform SmarterHQ, 86% percent of respondents are concerned about their data privacy, and 79% believe companies know too much about them. Source: <https://bit.ly/3pLHwFn>

#### Source

<https://cybervadis.com/articles/e-commerce-and-data-privacy-part-1/>

## 3.6 CONSUMERS

### 38. The growth of elderly population with diminishing spending capability is likely to influence consumptions levels

#### Description

Next social changes to come: the growth of elderly population and diminishing spending capability. Millennials are set to become the first generation to earn less than their predecessors over the course of their working lives. Besides, the future will also be more dominated by more single shoppers. The average size of shopping bag is getting smaller, and the average number of weekly shopping trips is falling. Globally, households are increasing in number but decreasing in size. More people are living alone. Shrinking households and more in general decreasing population will increase competition in the retail sector.

#### Developments

The ageing population is an issue all over the developed world- a phenomenon that is especially prevalent in Japan. This is happening alongside a trend of increasing urbanisation across the country, which begs the question; how are cities changing to accommodate the needs of this shifting demographic? One response can be seen in the thousands of convenience stores that punctuate the streetscape in urban areas. The services and products these stores provide are responding to the needs of a changing customer.

Convenience stores, especially in elderly countries as in Japan, already provide an extensive service compared to their counterparts in other countries. They have begun to outgrow their role as a mere retail store and have used their location and abundance to act as provider of social infrastructure, offering a wide range of services. Beyond aspirin, coffee and doughnuts, customers can pay a bill, pick up/drop off deliveries and make photocopies in stores such as 7-11, Familymart and Lawsons (to name a few).<sup>30</sup>

#### Plausibility and Uncertainties

In many European countries convenience is one of the fastest growing channels, driven by growing affluence, rapid urbanisation, smaller households and more. The plausibility of the trend is high and the uncertainties mainly related to the evolution of income distribution.

#### Supporting arguments:

- Growth of convenience stores at the expense of hyper, supermarkets, in last decade proves need for closer, simpler solution for aging population. Source: <https://re:ailanalysis.igd.com/channels/convenience>; Convenience Channel Report, 2021 (ascentialedge.com)
- Many supermarkets have set up initiatives to offer shopping support to older people who need it (e.g. 'shopping buddy' schemes with volunteers to assist people who need support). Source: <https://bit.ly/3IRdO0I>
- Some retailers (e.g. Kaiser's, Albert Heijn XL etc) have designed their spaces with 'relaxation zones' and more seating areas for older people that need to rest partway around the store. Source: <https://bit.ly/3IRdO0I>

#### Source

<https://www.arup.com/perspectives/publications/research/section/the-future-of-retail-2017>  
[https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Household\\_composition\\_statistics](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Household_composition_statistics)  
<https://popucity.net/observations/an-age-of-convenience/>

<sup>30</sup> <https://www.marketresearch.com/seek/Convenience-Stores-Europe/667/1275/1.html>



### 39. Is the “15 minutes city” a model for the future?

#### Description

The pandemic disrupted the very core of urban living from social distancing and lockdowns to destabilized local economies. However, cities remain well-placed to respond to crisis and set the rules for restoring vibrant, humanized communities. Carrefour stopped a project called Carrefour Planet when they detected this tendency and moved towards small and proximity formats Like Carrefour Express, City and Market, etc. In the same way, other retailers did the same. In 2020, hypermarkets have grown only 2%, Meanwhile, proximity stores have reached 5% of growth. The sporting goods or home decor retailers like IKEA or Decathlon have already started opening small-format stores and have adapted them to big cities downtown.

#### Developments

The big retailers are in the middle of a big change in their history. Best Buy announced in 2022 the intention of closing 50 stores. This news fed the rumours of a possible ending of big stores, while proximity stores grow every day. That is partly because there is a change of consumer behaviour owed to traffic, the difficulty of moving around big cities, lack of time, and a lot of other issues of modern life.

The re-zoning model has further traction during the COVID-19 pandemic by new ways of working that require less transport. With climate change as a major global concern, C40 in its C40 Mayors' Agenda for a Green and Just Recovery has recommended this model for cities worldwide, arguing that its pedestrianisation approach contributes to a reduction in greenhouse gas emissions and supports environmental sustainability.

#### Plausibility and Uncertainties

This plausibility of this trend is undetermined as cities work towards recovery from the COVID-19 pandemic. Big stores format is still working and very well, nonetheless, the trend now is proximity stores. The '15-minute' city concept can be an organising principle for urban development. It offers a socially concentrated yet highly functional blueprint for a new urban inclusive lifestyle that might find wide scale acceptance, particularly since lockdowns associated with the pandemic have forced people to re-orient their lifestyles to 'go local' and re-discover their neighbourhood.

Confronted with the growth of e-commerce, stores will have to adapt not only their store size but its product offers and store equipment. Important equipment as baskets and carts should be adapted to this proximity format. Narrow aisles, more visit frequency at the store, reduced numbers of items in each visit are factors that follow this new way of consuming.

#### Supporting arguments:

- The implementation in Europe of 15 minutes city is difficult guess.

#### Source

<https://www.bbc.com/worklife/article/20201214-how-15-minute-cities-will-change-the-way-we-socialise>

#### 40. The consumer of the future: more power of choice and required personalised products

##### Description

Consumers are increasingly using social media; they want to pay less for more and they are demonstrating that they are willing to search until they find what they are looking for. Consumers will adopt voice-first systems and services for three main reasons: speed, convenience, and better service quality.

##### Developments

It is likely that the increasingly empowered consumers will have ready access to information, which means they will make decisions differently. They will use technology, especially mobile devices, in day-to-day decisions and tasks. At least three dimensions will be interested by the application of AI technologies<sup>31</sup>

- 1) *Evolved dimension: Choice.* The choices consumers expect to make are changing dramatically. These choices can include the product assortment and selection, personalization and related services. Technology will be the catalyst in companies' ability to tailor these factors to individual consumers, reflecting individual tastes and occasions – and spanning not just the product, but the entire consumer journey.
- 2) *Evolved dimension: Convenience.* Consumers now want what they want, when and where they want it. Instant gratification has now become the expectation, rather than the exception. Retailers are increasingly required to provide it in the learning, consideration, purchasing and receiving stages (e.g. compressed delivery times) of the consumer journey. That journey will only become more convenient, with artificial intelligence-enabled digital assistants able to seamlessly and automatically find, order and deliver the ideal option to the consumer.
- 3) *New dimension: Control.* Consumers want to control, influence and shape their entire purchasing journey, e.g. opposing the use of emotion recognition technology by retail services. Digital channels will offer a two-way channel for their voice to be heard, whether through sharing opinions via social media or making last-minute updates to an order or delivery preference via an app. Through these conduits, consumers will be empowered to provide the exact experience they want.

##### Plausibility and Uncertainties

The trend towards a more empowered consumers is undisputable. Uncertainties may come from the high costs and difficulty of implementing new technologies at retail level. The capital and capabilities required to implement new technologies are substantial. Incumbent organizations often have legacy technologies that can represent, in some cases, expensive barriers to innovation. Transforming an organization and the skillsets of its people to support a new, highly digital infrastructure may also not be straightforward.

##### Delphi outcomes

- In 2040, in the EU, at least 10% of consumers will share various forms of personal/behavioural data to creative AIs in order to generate highly personalized products designs. This trend is **likely** to happen

##### Supporting arguments:

- According to a study led by SmarterHQ, 79% of consumers believe companies know too much about them, yet 90% are willing to share behavioural data for a cheaper and easier brand experience. Source: <https://bit.ly/3rVLT3e>
- According to a report from Accenture, 83% of consumers are willing to share their data to create a more a personalized experience. Source: <https://accntu.re/3DHWPDR>

##### Source

[http://www3.weforum.org/docs/IP/2016/CO/WEF\\_AM17\\_FutureofRetailInsightReport.pdf](http://www3.weforum.org/docs/IP/2016/CO/WEF_AM17_FutureofRetailInsightReport.pdf)

<https://alphabetacom/wp-content/uploads/2019/08/thefutureisvoice.pdf>

<https://voicebot.ai/2018/02/09/voice-commerce-tried-22-percent-smart-speaker-owners/>

<sup>31</sup> [https://www3.weforum.org/docs/IP/2016/CO/WEF\\_AM17\\_FutureofRetailInsightReport.pdf](https://www3.weforum.org/docs/IP/2016/CO/WEF_AM17_FutureofRetailInsightReport.pdf)

## 41. Consumers' willingness to share data (smart objects and IoT) for discount

### Description

In the predigital days, advertising agencies were ruled by swaggering creative directors who gorged on lavish client contracts and sometimes created campaigns that set the cultural agenda and captivated the public. Nearly every piece of that equation has changed. Agencies are better informed than ever before about consumers, having amassed huge stores of their data. But many of those consumers, especially the affluent young people prized by advertisers, hate ads so much that they are paying to avoid them.

### Developments

It is likely that in the future advertising will be smarter, in order to face the negative consumers' attitudes. From a Deloitte report<sup>32</sup>, marketing clouds will be indispensable elements in advertising processes, as they control the creation and management of marketing relationships and manage campaigns with customers. It will become standard to integrate solutions for customer journey management, email, mobile, social, web personalization, advertising, content handling, and analytics. Artificial Intelligence will be also imperative: artificial Intelligence is ubiquitous in the advertising space. AI supports decision-making and analyses consumer behaviour. Enriched with data about how consumers interact with advertising, it will substantially optimize campaigns to perform better.

### Plausibility and Uncertainties

Although the trend towards the willingness of individual consumers to pay for having less advertising is considered likely to happen, the phrase "even by paying" in the question is the key. Paying is indeed the only way to avoid advertising. How else does the revenue model work? Advertising actually performs a function, and elimination of advertising will lead to worse consumer outcomes. It is not clear whether the consumer is ready to trade-off more free contents with less advertising.

### Delphi outcomes

- In 2040, in the EU, most retailers of smart objects will provide discounts to people sharing data regarding their use, including their interaction with other smart objects. This trend is **likely** to happen

#### Supporting arguments:

- According to Deloitte's annual study on digital media trends, about 48% of Gen Zers and 46% of Millennials would rather pay than sit through advertisements on streaming video services. Source: <https://bit.ly/3lBhgWS>
- Globally, the most commonly reported reasons for using ad blockers include excessive amounts of ads (22.3%), the irrelevance of ad messages (22.3%), and the intrusion factor (19.9%). Source: <https://bit.ly/3EJlmsE>
- Today the average person is estimated to encounter between 6,000 and 10,000 ads every single day. Source: <https://bit.ly/30eauoA>
- 42.7% of internet users worldwide (16-64 years old) use ad blocking tools at least once a month. Source: <https://bit.ly/3EJlmsE>

### Source

<https://www.nytimes.com/2019/10/28/business/media/advertising-industry-research.html>

<sup>32</sup> <https://www2.deloitte.com/de/de/pages/technology-media-and-telecommunications/articles/future-of-advertising.html>

## 42. Consumers will prefer cashier-less and cashless payments

### Description

Changes in spending habits have been dramatically accelerated by the coronavirus pandemic, with 13.7 million people leading a “cashless life” last year – almost double the 7.4 million figures in 2019. Five in six payments now involve no notes or coins, compared with half of all transactions a decade ago. A growing number of businesses both big and small now refuse cash, with many having opted to go card-only over the past year.

The same trend happens for cashier-less stores (particularly in groceries), that adds convenience and personalization to the shopping experience, with shoppers matched to their online shopping accounts and purchase histories.

### Developments

Digital transformation in retail has been offering a new stream of retail stores in the form of cashier-less stores. These modern brick-and-mortar settings are set to fast-track checkout lines. Retail technology is swiftly advancing to increase productivity and save retailers money. A significant change in recent years is the modification of cashiers by using both self and automated checkout.

With Amazon leading this transformation by setting up its Amazon Go cashier-less stores in selected few cities<sup>33</sup>, other chains are planning to follow in these footsteps. Walmart, Sam’s Club, and Kroger released announcements to start using similar technologies to enhance shopper’s convenience and decrease the waiting time of checkout lines. Additionally, new players with little to no retail background are also joining automated checkouts in China, France, the US, and other countries.

### Plausibility and Uncertainties

Despite the increasing presence of cashier-less stores, there is still a significant part of the population that may use cash. This means that it is likely that an “hybrid” system will continue to stay. Shops will probably introduce cashier-less systems due to savings resulting from the reduction of the number of store staff and the possibility of opening the store 24 hours a day. But cashiers provide an important social function in grocery stores and smaller grocery stores that proliferate throughout the EU and will likely this technology will not be adopted to such an extent as 'over 50%'. Besides, people with no credit cards or those wanting to use cash cannot access cashier-less stores.

### Delphi outcomes

- In 2040, in the EU, over 50% of grocery stores will be cashier-less. This trend is **likely** to happen, but uncertainties remain on the order of magnitude

#### Supporting arguments:

- Major grocery and convenience-store chains are already implementing cashier-less technology - e.g. Amazon, Tesco, Morrisons, Aldi (UK), Continente (Portugal) etc. Sources: <https://bit.ly/3pGqEzQ>; <https://reut.rs/3GBVgJQ>; <https://cnb.cx/3dDHhXg>
- Cashier-less technologies will provide more data on stock and products’ shelf life and also more behavioural data as retailers will have the opportunity to track what products are picked up and returned to shelves or how long the customer stands in front of what shelves and what products they select as a result. Source: <https://bit.ly/3lloLez>
- Consumers will prefer cashier-less stores as five in six payments now involve no notes or coins, compared with half of all transactions a decade ago. Source: <https://bit.ly/3pOV5Un>
- Cashier-less stores will add convenience and personalization to the shopping experience, with shoppers matched to their online shopping accounts and purchase histories. Source: <https://bit.ly/3lloLez>

### Source

<https://www.theguardian.com/business/2021/jun/16/cashless-society-draws-closer-with-only-one-in-six-payments-now-in-cash>

<sup>33</sup> <https://www.netsolutions.com/insights/cashierless-stores-future-of-retail/>

### 43. Influencer and friend's posts on social media influence consumers' choices

#### Description

According to Forbes, 81% of consumers' purchasing choices are influenced by their friends' posts on social media and influencers' way of life and spending patterns. It is likely that in the future consumers will be influenced by celebrities' deepfakes images.

#### Developments

In the tech world, deepfakes specifically refer to media produced by artificial intelligence technology called generative adversarial networks. Deepfakes are video or audio that has been modified, such as by changing a face, the words spoken or the language used. The term was first coined on the internet in 2017 by combining "deep-learning" and "fakes". Zalando's campaign ran on Facebook across 12 countries, gaining 180 million impressions across social media, according to Infnitizer, the micro-targeting specialist agency that worked on the campaign.

Advances in technology have made it harder to distinguish between real and fabricated media. Deepfakes have had a bad reputation, not least because the majority are fake pornography. Critics also point out the dangers of political deepfakes that might generate convincing fake news. "Any digital window to the real world is one that can be duped and faked sometimes," acknowledges Sunny Dhillon, a VC who has invested in a deepfake marketing company.

#### Plausibility and Uncertainties

The plausibility of scenarios in which consumers are influenced by celebrities, influencers and social media opinions is realistic. While this scenario is possible, it sheds a light on future consumers that are not at all interested in contents but rather want something different, i.e. a promotion, giveaway, etc. when it comes to social media and their favourite brands. This may be a dystopic scenario, e.g. Artificial Intelligence replacement of real celebrities with fake ones, with uncertain implications.

#### Delphi outcomes

- In 2040, in the EU, numerous celebrities will lend their image for marketing campaigns to create, using deepfake technology, believable virtual replicas of them as brand ambassadors. This trend is **likely** to happen.  
**Supporting arguments:**
- According to Forbes, 81% of consumers' purchasing choices are influenced by their friends' posts on social media. Source: <https://bit.ly/31MVKxN>
- U.S start-up Veritone is launching a new AI platform that will let celebrities, influencers, and other prominent figures create, control, and license deepfakes of their own voice. Source: <https://bit.ly/3oLAhxK>
- AI Foundation is creating personal AI for influencers and celebrities, with their consent, to engage and amplify their reach with the audience, create deeper engagement with the fans, and deliver personal experiences at scale. Source: <https://bit.ly/3ITWTuo>
- Brands such as H&M or Zalando are creating marketing campaigns featuring different celebrity ads generated through deepfake technology in order to reduce costs and to improve customer engagement across digital products. Sources: <https://bit.ly/30ewcc3>; <https://bit.ly/3dDLXwv>

#### Source

<https://www.forbes.com/sites/marketshare/2012/05/07/are-brands-wielding-more-influence-in-social-media-than-we-thought/?sh=1d62bfba71e1>  
<https://digitalmarketinginstitute.com/blog/20-influencer-marketing-statistics-that-will-surprise-you>  
<https://influencermarketinghub.com/influencer-marketing-statistics/>  
<https://www.searchenginewatch.com/2020/11/20/how-social-media-influence-71-consumer-buying-decisions/>

#### 44. Environmentally friendly consciousness will influence consumers' choices

##### Description

An increasing sensitivity to the environmental impacts of consumption will deepen among global consumers. Consumers will demand that companies care beyond revenue, and they will no longer perceive business as profit-driven entities. Protecting the health and interest of society and the planet will be part of the new consumers' expectations. Besides, a more conscious attitude to consumption, rising awareness of sustainability issues, and a sense of fatigue at influencers constantly pushing products are all contributing to an emerging anti-excess movement in fashion and beauty.

##### Developments

As reported by Dazed in October 2019<sup>34</sup> cohort of YouTubers in the make-up and fashion industry are actively moving away from plugging endless launches and Public Relations material on their channels. Amid the growing awareness of the cost of this consumption to the environment, consumers are pushing back, and brands are responding, too. One who took a radical stance is Samantha Ravndahl, a make-up artist and YouTuber who announced last year that she'd asked beauty companies to stop sending her advertising and Public Relations packages.

##### Plausibility and Uncertainties

It is plausible that the growing environmental consciousness among consumers (in particular younger consumers) may lead to higher frugality and environmental-friendly consumption patterns. There are anyway several uncertainties concerning the overall impacts. On the one hand, the minimalist concept and conscious consumption or sustainable consumption awareness is proliferating among the Z generations and it may contribute to spending lesser, on the other hand, the richer segments of society, might practice new forms of anti-consumerist consumerism in the future, but this not lead automatically to "frugality" or less wastes.

##### Delphi outcomes

- In 2040, in the EU, at least 20% of consumers with above average discretionary income will practice a form of frugality/anti-consumerism (e.g. reduced shopping budgets over longer periods of time, months with no fashion purchases etc.). This trend **is likely to happen**, but some uncertainties should be considered about the order of magnitude and the direction of the trend.

##### Supporting arguments:

- Millennials and gen Zers hold a buying power of EUR 39.16 billion (USD 44 billion), but they're actually buying less as a manifest to excess consumer culture amidst product fatigue and environmental concerns. Source: <https://bit.ly/3pP7eIW>
- Excessive consumption drowns out sustainable values, making people more prone to waste. Source: <https://bit.ly/3IU86en>

##### Source

<https://www.pwc.com/gx/en/consumer-markets/consumer-insights-survey/2021/qcis-june-2021.pdf>

<sup>34</sup> <https://www.dazeddigital.com/beauty/soul/article/46301/1/anti-excess-beauty-youtube-samantha-ravndahl-rawbeautykristi-influencer>

## 3.7 PRODUCERS

### 45. The importance of local products (fresh food) will grow

#### Description

Online marketplaces use digital platforms to assemble little food-buying hubs, promoting direct exchanges between local producers and consumer communities. They offer a more independent and efficient way of distributing food locally, focusing on direct sales and fair prices for farmers and food makers, which go from being 'niche' fantasies of a regenerative farming future to a vital source of food. And these food markets are not only online, but several direct models have also appeared in recent years.

Besides, consumers are willing to pay more for foods that are grown and produced locally rather than having travelled extensively during production. Older shoppers have shown a preference for buying local-only while young millennials are more inclined to buy international brands, which they perceive to be more innovative and affordable.

#### Developments

Companies in the fresh fruit and vegetable sector use digitalisation to make the daily fresh business more efficient and predictable. Many things can happen with fresh produce throughout the supply chain. Digital data in agriculture, post-harvest and trade can be used to ensure reliable product quality while improving the traceability and efficiency from farm to consumer. At the same time, it can provide an opportunity for suppliers to show more about the origin of their product, get easier access to finance and build credentials with their buyers. There are different on-going e-commerce initiatives. Leading supermarkets have started to expand their online assortment and offer pick-up points and delivery services. The British Tesco is known to be the supermarket with the highest online turnover in Europe. At the same time, new online supermarket start-ups are emerging with e-commerce as their primary business, such as Ocado, Mytime and Picnic, challenging the conventional supermarkets. This way, the supermarket landscape, which is otherwise very concentrated, is becoming more diverse with new channels<sup>35</sup>. The countries with the most online groceries can be found in Northern Europe, such as the United Kingdom and the Netherlands.

#### Plausibility and Uncertainties

Despite the plausibility of a growing trend, most online initiatives use an existing distribution network or combine the sales with a network of physical shops (such as a supermarket chain). They depend on regular import channels, where part of the fresh supply is programmed for large buyers and the rest of the products are sold where demand is highest (spot market). E-commerce is part of this structure, but cannot entirely replace traditional distribution channels. Besides, 80% of food products are sourced locally and indeed grower retail emphasis on shorter distribution chain.

#### Delphi outcomes

- In 2040, in the EU, more than 50% of the consumers will prefer local products even when 20% higher in price when compared to products from other countries. This trend **is not likely to happen**, but the order of magnitude is probably overstated.

#### Supporting arguments:

- According to a recent study, 94% of European consumers trust products made in their country or region. Source: <https://bit.ly/3GBOseT>

#### Source

<https://www.roquette.com/media-center/news/food-innovation-hub-new-online-digital-platform>

<https://blog.locus.sh/farmer-to-consumer-direct-supply-chain/>

<https://www.foodnavigator.com/Article/2018/11/14/Local-brands-are-winning-hearts-and-minds-Rising-demand-for-local-food-in-Europe>

<sup>35</sup> <https://www.cbi.eu/market-information/fresh-fruit-vegetables/go-digital>

## 46. Eco-labels will inform consumers on environmental claim and quality assessment of the products

### Description

Today, three out of four products in the EU display an environmental claim or label. Europe-wide eco-label scheme is set for launch in 2022 and will evaluate the food product's impact using four key indicators: carbon, water use, water pollution and biodiversity. By 2023, all clothing sold in the European Union will have to carry an eco-label.

### Developments

Given the increasing societal concern regarding agrochemical pollution, smart labels will communicate pesticide residues in harvested produce. In US, an effort to make pesticide label information easier to find and the approval of pesticide labels more efficient, EPA is working with pesticide registrants to pilot an electronic label system<sup>36</sup>. In Europe, Europe's smaller agri-businesses will soon be able to tell whether their products are within the EU's strict limits for pesticide residues without having to send samples to the laboratory<sup>37</sup>.

### Plausibility and Uncertainties

The plausibility of a robust trend towards eco-labelling is robust, but there is uncertainty on positive impacts on food waste. Labelling of food products will not lead in itself to reduced food waste. Besides, smart labels rely on the premise that the population will be able to evaluate and interpret the information. This premise is probably too ambitious, in particular for vulnerable populations.

Concerning eco-labels on emissions, physical labels on products/on the retail shelf are not flexible enough to show the carbon footprint because of the dynamic nature of carbon emissions and the potential difference in footprint between instances of the same product: e.g. different suppliers may have different footprints, or there may be temporal or spatial variances between different instances of a product.

### Delphi outcomes

- In 2040, in the EU, intelligent labels will ensure quality assessment of over 80% of perishable food products (by monitoring multiple parameters such as ripening processes, external humidity conditions etc.). This trend **is likely to happen**, uncertainties remain concerning the impacts on consumers' behaviour.
- In 2040, in the EU, for over 50% of products in stores and web-shops, emission values will be available and will be calculated dynamically (to include, beyond production emissions, transportation emissions, warehousing, cooling times etc).

### Supporting arguments:

- According to the European Commission, around 88 million tonnes of food waste are generated annually with associated costs estimated at 143 billion euros. Smart labels will help reduce food waste by tracking the freshness of a product and giving consumers and workers visibility of this information. Sources: <https://bit.ly/3lVg3A2>; <https://bit.ly/3oLgX42>
- Currently, smart labels are being developed in order to detect salmonella, monitor expiry dates, to even detect and kill bacteria (Freshcode - a smart labelling system that provides a visual indicator guaranteeing the freshness of packaged chicken breasts; MIT's Velcro-like food sensor, made from an array of silk microneedles, that pierces through plastic packaging to sample food for signs of spoilage and bacterial contamination). Sources: <https://bit.ly/3lGqMYG>; <https://bit.ly/33qnxXL>; <https://bit.ly/3lXpZZQ>

### Source

<https://meta.eeb.org/2021/05/27/new-eu-ecolabel-to-tackle-cosmetics-greenwashing/>  
<https://www.foodnavigator.com/Article/2021/06/28/Europe-wide-eco-label-scheme-set-for-launch-in-2022-as-industry-joins-forces-to-launch-pilot>

<sup>36</sup> <https://www.epa.gov/pesticide-registration/office-pesticide-program-electronic-label-oppel-pilot>

<sup>37</sup> <https://ec.europa.eu/programmes/horizon2020/en/newsroom/achievements/smes?page=2>



## 47. Packaging will be more environmentally friendly

### Description

From packaging to the recycling and reuse of leftovers materials, it is becoming of major importance the relevant role that the future production processes will play in terms of sustainability, along with increasing demands for traceability options. The sustainability issues will move hand in hand with the customers' consciousness.

Besides, the EU's Directive on single-use plastics restricts the sale and use of 10 single-use plastic items including cutlery, plates, straws, drink stirrers, sticks for balloons, cups, food, and drink containers made of expanded polystyrene<sup>38</sup>.

### Developments

At global level, there are growing commitment by brands to develop digitalisation of packaging and forms of smart packaging which communicates, not only with consumers, but all along the supply chain, to ensure security and efficiency<sup>39</sup>.

Besides, the packaging sector is experiencing the growth of Augmented Reality and the need to communicate across all stakeholders, even within individual companies, in a common 'language' and how to get across key messages about the benefits of these technologies. A further key point is the trend towards the standardisation and stability of technological developments to enable scalable solutions.

### Plausibility and Uncertainties

The trend towards a more sustainable packaging is robust: the majority of European retailers and large FMCG brands have put in place packaging reduction and improvement strategies. On the other hand, uncertainties may be raised concerning the desired thresholds for having effective results: plastic packaging destroys the ecosystem and 50% in 2040 might be a very low level. Technical solutions are already available to solve this problem and therefore a more ambitious target would be feasible.

### Delphi outcomes

- In 2040, in the EU, more than 50% of the non-durable goods on the market will have sustainable (i.e. recyclable, compostable or reusable) packaging. This trend is considered **is likely** to happen.

#### Supporting arguments:

- Around 74% of consumers say they are willing to pay an additional amount for products in sustainable packaging. Source: <https://bit.ly/3yh1BqV>
- UK supermarkets including Waitrose, Marks & Spenders, Morrisons, Asda, and Aldi have been trialling packaging-free dispensers to cut plastic use. Source: <https://bit.ly/3oJHxdR>
- P&G Beauty has launched its "good refill system" packaging innovation that will enable 200 million European households to recycle, reduce and reuse their packaging. Sources: <https://bit.ly/3pJurwd>; <https://bit.ly/30lgKLu>
- Automated packaging and labelling facilities will be used to prepare returned products for resell, reuse, or recycling. Source: <https://bit.ly/3dHCBQ8>

### Source

[https://ec.europa.eu/environment/topics/plastics/single-use-plastics\\_en](https://ec.europa.eu/environment/topics/plastics/single-use-plastics_en)  
<https://www.labiotech.eu/in-depth/single-use-plastics-bioplastics-industry/>

<sup>38</sup> [https://ec.europa.eu/environment/topics/plastics/single-use-plastics\\_ro](https://ec.europa.eu/environment/topics/plastics/single-use-plastics_ro)

<sup>39</sup> <https://packagingeurope.com/taking-the-next-steps-in-the-digitization-of-packaging/7677.article>

## 48. 3D printing technologies will growth further

### Description

While still in an adoption stage, 3D printing potential influence is massive for both food and clothing, as well a wealth of other retail sectors. It will inevitably play a dominant role in our lives, taking all the benefits of 3D printing, less manpower, less time, more experimentation and customization possibilities, more efficiency. One of the many ways companies are leveraging these abilities is through vegan and vegetarian alternatives: from ice creams to school lunches, food printing can add a vegetarian twist to lots of traditional cuisines.

### Developments

Five years ago, the media heralded 3D printing as the next industrial revolution: consumers would soon have the ability to make anything they wanted in their living rooms (supposedly). 3D printers were supposed to show up in supermarkets. The United States Postal Service was going to use them to begin delivering products (and maybe finally make money)<sup>40</sup>. But this reality never materialized. The misconception is around the phrase “consumer 3D printing.” Typically, the connotation here that the consumer is the one who owns and operates the 3D printer. For this to happen, the printer must be easy to use, affordable, accessible, and safe, and this is far for being actual.

A different view can be applied to the producers’ side, when technological development and costs reduction can disclose a different scenario.

### Plausibility and Uncertainties

In general, the trend towards a massive development of the 3D printing concept among consumers and producers is considered as not likely to happen. There are several uncertainties addressing first of all the technical viability: if indeed the diffusion of 3D printing is reasonable according to actual trends, it would generate even more lack of global component supplies, and the collapse of industries, with no time to generate alternatives. Besides, 3D printing will require too much knowledge and effort for the typical consumer. This will take more than 20 years to resolve. In some countries, people are simply unaware of the technology and cannot afford to have such devices at home

### Delphi outcomes

- In 2040, in the EU, over 50% of private consumers will have a type of 3D printer at home. This trend is considered is **not likely** to happen

#### Supporting arguments:

- Some European companies have already developed 3D printing kitchen appliances: e.g. the Foo Dini, developed by Natural Machines, Spain or Cakewalk 3d, developed by The Digital Patisserie, France etc. Source: <https://bit.ly/3yfFLE9>
- According to the European Patent Office, European countries account for 47 per cent of all patent applications in 3D printing technologies. Germany leads with 19.1 per cent of all patents, followed by Spain, Belgium, the UK, Switzerland and the Netherlands. Source: <https://bit.ly/3rU0LPK>
- Consumers can save a lot of money annually when 3D printing a few objects by themselves, at home, instead of buying them from the market or online shopping. Source: <https://pick3dprinter.com/3d-printer-for-home/>

### Source

<https://interestingengineering.com/3d-printing-will-change-the-way-you-eat-in-2020-and-beyond>  
<https://sourcingjournal.com/denim/denim-brands/levis-future-finish-laser-customization-jeans-161376/>

<sup>40</sup> <https://www.mosaicmfg.com/blogs/news/expectations-vs-reality-the-future-of-consumer-3d-printing>

#### 49. There will be a progressive application of the circular economy principles to the overall production processes

##### Description

Circular economy is a development priority of the European Union, and it is part of the EU industrial strategy. The transition to a more circular economy aims to develop a sustainable, low carbon, resource-efficient and competitive economy. There are several levels of advancement towards circular economy among the European countries; and packaging and recycling alone cannot solve the problem of overproduction and waste, but the model can be further developed and scaled up.

##### Developments

New EU law requires companies that produce electronic goods (refrigerators, washers, hairdryers, or TVs) to ensure those appliances can be repaired for up to 10 years to reduce e-waste. The "right to repair," as it is sometimes called, came into force across the 27-nation bloc in March 2021.<sup>41</sup> It is part of a broader effort to cut the environmental footprint of manufactured goods by making them more durable and energy-efficient<sup>42</sup>. The European Commission's work towards sustainable consumption and production maximises business' potential to transform environmental challenges into economic opportunities and provide a better deal for consumers. The aim is to improve the overall environmental performance of organisations and products throughout their life-cycle and boost the demand for better, greener products, services and production technologies. The Eco-innovation Action Plan (Recopa) fosters a wide variety of eco-innovative processes to help companies develop better, greener products and services. The Eco-Management and Audit Scheme (EMAS) helps organisations evaluate, report, and improve their environmental performance. Help is also available to enable cutting-edge green technology to reach the production stage by providing Environmental Technology Verification (ETV) of its performance and environmental benefits.

In such a process, retailers are in an ideal position to promote more sustainable production and consumption via their daily contact with millions of European consumers as well as through their own actions and partnerships with suppliers. What is more, removing unsustainable products from their shelves and recognising sustainability is a great opportunity for retail businesses to grow, compete and innovate.

##### Plausibility and Uncertainties

The plausibility of increasing legislation towards the implementation of circular economy principles addressing production processes is robust. Uncertainties may address a variety of barriers originating from existing policies, economic factors, supply chains, technology, consumer preferences and internal company organisation<sup>43</sup>.

##### Delphi outcomes

- In 2040, in the EU, more than 50% of the non-durable goods on the market will have sustainable (i.e. recyclable, compostable or reusable) packaging. This trend is considered **is likely** to happen.

##### Supporting arguments:

- Instead of trying to find high-tech solutions to the environmental problem, companies will use "low-technology" solutions for a low-carbon future, such as making products more robust and repairable or making recycling easy. Source: <https://bit.ly/31MSCSz>

##### Source

<https://enveurope.springeropen.com/articles/10.1186/s12302-021-00549-0>

[https://ec.europa.eu/environment/green-growth/sustainable-production/index\\_en.htm](https://ec.europa.eu/environment/green-growth/sustainable-production/index_en.htm)

<https://www.euronews.com/2021/03/01/eu-law-requires-companies-to-fix-electronic-goods-for-up-to-10-years>

<sup>41</sup> [https://www.europarl.europa.eu/RegData/etudes/BRIE/2022/698869/EPRS\\_BRI\(2022\)698869\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2022/698869/EPRS_BRI(2022)698869_EN.pdf)

<sup>42</sup> <https://www.euronews.com/2021/03/01/eu-law-requires-companies-to-fix-electronic-goods-for-up-to-10-years>

<sup>43</sup> <https://www.ceps.eu/ceps-publications/barriers-and-enablers-for-implementing-circular-economy-business-models/>

## 50. Direct-to-consumer brands diversify their product lines

### Description

New direct-to-consumer (DTC) brands have caused the market to become more crowded and more competitive. As a result, digitally-native brands continue to expand beyond their core offerings with related or core-adjacent product lines. Brands following the DTC model have category-owning ambitions baked into their processes.

### Developments

The Direct-to-Consumer (D2C) growth is going to be fed by the following trends:

- 1) *Rising D2C brands in Europe due to more store closures*: Even before the COVID-19 pandemic started, there were rising store closures across Europe. The new wave of digitally-native E-commerce companies was making life tough for big label stores. There was a drastic fall in consumers visiting the top commercial streets in major European cities.
- 2) *D2C brands partnering with influencers*: Direct-to-Consumer brands are relying heavily on social media to increase adoption. They are attempting to build a long-lasting and profitable relationship with consumers through social influencers.
- 3) *D2C Brands building communities*: Social media is the biggest asset for D2C brands to acquire new customers. A savvy social media presence that can build emotional relationships with customers can go a long way in competing against legacy players in the industry.

### Plausibility and Uncertainties

Despite the likely growth of D2C brand is plausible, people will continue to enjoy shopping, human relationships, and the emotional work of salespeople. Shops and warehouses continue to be present in the coming decades. Besides, wholesalers will retain so much of consumer data that they will have enormous advantage in driving effective sales. Smaller retails and direct-consumer sales will not be competitive

### Delphi outcomes

- In 2040, for most legacy brands, direct-to-consumer sales will account for at least 30% of total sales, bypassing wholesalers and retail stores. This trend is considered is **likely** to happen, even if the order of magnitude may be overstated.

#### Supporting arguments:

- 87% of retail brands in the U.K. and the U.S. have said they plan to launch a D2C channel at some point in the future, while 23% said they will do so within the next 12 months. Source: <https://bit.ly/3EUwxQI>
- In Spain, a little more than two-thirds (67%) of marketing and communications professionals said that direct selling gave them more control and knowledge of user data, and 57% said it provided more opportunities to personalize customer experience. Source: <https://bit.ly/3Ff04od>
- Some of the world's largest legacy brands - e.g. PepsiCo, Heinz, Nike - launched direct-to-consumer initiatives. Source: <https://bit.ly/3oZhCie>

### Source

<https://www.forbes.com/sites/kaleighmoore/2021/12/10/future-facing-retail-trends-for-2022/?sh=1bbfbbd974b6>

## 4 PRIORITISATION OF FUTURE SHEETS

The Online Dynamic Argumentative Delphi consultation has allowed for a prioritisation of the 50 Future Sheets and has provided the study team with alternative interpretations of the key trends emerging from the analysis.

The prioritisation has been performed by ranking the future statements (likelihood of the statements happening in the future of the retail ecosystem): Delphi stakeholders were asked to identify a short list of statements for which the likelihood of occurrence was considered most likely (we included statements scoring higher than 3.5 on a scale between 1-minimum and 5-maximum likelihood, with a non-dispersed variability of opinions: standard deviation around 1).

Table 3 shows the association of the most likely future statements (statements higher than 3.5) with the Future Sheets, resulting in 30 Future Sheets most likely to happen (marked in grey in the table). Labour shortage in the logistic sector, even if not included in the Delphi future statements, has been considered as a relevant factor of change. The final 50 Future Sheets are organised by STEEP category, providing for multiple angles of observation considering how: A) the 5 STEEP domains interact with B) the 50 Future Sheets and C) the range of ecosystem actors. The STEEP categories distinguish 5 groups of domains: 1) Socio-cultural, 2) Technological, 3) Economic, 4) Environmental and 5) Political.

The 5 groups, followed by a brief description of key contents, are the following:

- a. *Socio-cultural domain.* Future drivers addressing the role of socio-economic components in shaping the evolution of the retail sector under the influence of long-term social changes in Europe (e.g., older people and likely poorer, smaller households, etc); the progressive affirmation of new consumers habits, e.g., growing use of social media in commerce, needs and requirements of the next consumer generations, etc. The implications of COVID-19, i.e., how it can change consumers' attitudes to shopping, if persistent, are part of this domain.
- b. *Technological domain.* Future drivers linked to the technological developments, e.g., the role of artificial intelligence, big data, digitalisation, etc, are considered as a potential powerful driver of change, e.g., making possible to merge physical and digital features in the retail sector, changing dramatically the concept and characteristics of retail shops, warehouses, logistics, etc.
- c. *Economic domain.* Future drivers included in the economic domain concern with trends in market dynamic and type of actors, e.g., market concentration, growing pressures on diminishing prices, growth of e-commerce etc. The consolidation of emerging new business models (e.g., on-demand warehousing, mobile payments, etc) if persisting, may radically changes the retail sector. Besides, the role of climate change future extremes weather events may also have economic implications on the supply chain.
- d. *Environmental domain.* Future drivers as the growing environmental awareness of consumers and producers as well, addressing respectively consumptions behaviour and production processes are part of this domain. Besides, the environmental concerns in urban areas because of on-line shopping are also part of the factors allocated to this domain.
- e. *Policy domain.* Future drivers in this domain concern with the role of policy makers in market regulation, market openness and supporting policies in the fields of funding, human capital, and skills – with specific reference to the small retail shops sector. Other political factors like the credibility and the effectiveness of the EU vision (e.g., the completion of the Single Market) and more in general the EU political stability (e.g., cooperation among Member States) might also be considered.

Table 3 Future sheets backed by Delphi statements

STEEP domain	Ecosystem actors	50 Future Sheets	Delphi statement	Delphi score	Standard deviation
Socio-cultural	Consumers	1. The consumer of the future: more power of choice and required personalised products	In 2040, in the EU, at least 10% of consumers will share various forms of personal/behavioural data to creative AIs in order to generate highly personalized products designs	4.27	0.8
	Consumers	2. Consumers will prefer cash-less payments	In 2040, in the EU, over 50% of grocery stores will be cashier-less	4.09	0.98
	Consumers	3. Is the “15 minutes city” a model for the future?	n.a	n.a	n.a
	Consumers	4. Consumers' willingness to share data (smart objects and IoT)	In 2040, in the EU, most retailers of smart objects will provide discounts to people sharing data regarding their use, including their interaction with other smart objects	3.91	0.98
	Consumers	5. Influencer and friend's posts on social media influence consumers' choices	In 2040, in the EU, numerous celebrities will lend their image for marketing campaigns to create, using deepfake technology, believable virtual replicas of them as brand ambassadors	3.61	1.32
	E-commerce	6. Digital customers prefer subscription models	In 2040, in the EU, over 50% of consumers will use individual/bundled subscriptions instead of repurchasing certain products (pet food, groceries, clothing)	3.26	1.16
	Logistics	7. A systematic driver shortage is to be expected	n.a	n.a	n.a
	Producers	8. The importance of local products will growth	In 2040, in the EU, more than 50% of the consumers will prefer local products even when 20% higher in price when compared to products from other countries	3.33	1.27
	Retailers	9. COVID and urban transformations: the end of local shops?	In 2040, in most EU cities, high streets will primarily host restaurants, services and leisure spaces, and few, if any, retail stores	2.85	1.26
	Retailers	10. Demographic projections and COVID impacts determine a labour shortage	n.a	n.a	n.a
	Retailers	11. Future demand adapts to older population	In 2040, in the EU, senior-focused malls will be present in more than 50% of the large cities (i.e. 1 mil.+ inhabitants).	3.23	1.24

STEEP domain	Ecosystem actors	50 Future Sheets	Delphi statement	Delphi score	Standard deviation
Technological	E-commerce	12. Digital sales benefit of social channels	In 2040, in the EU, 30% of digital sales take place via a social network	3.86	1.11
	E-commerce	13. Buy on-line will benefit of AI and Virtual Reality tools	In 2040, in the EU, sales initiated through live-streaming will account for at least 20% of all e-commerce	3.45	1.25
	E-commerce	14. Smart appliances and smart objects will populate the homes of the future	In 2040, in the EU, sales initiated through live-streaming will account for at least 20% of all e-commerce	3.69	1.26
	Logistics	15. AI and Internet of Things will be part of the logistics industry	In 2040, in the EU, most large retailers will rely on just-in-time logistics enabled by predictive analytics	3.96	1
	Logistics	16. Drones will play a key role in last-mile delivery	In 2040, in the EU, 30% of last-mile deliveries will be performed by ground delivery bots or drones.	3.44	1.14
	Producers	17. 3-D printing technologies will grow further	In 2040, in the EU, over 50% of private consumers will have a type of 3D printer at home	2.79	1.37
	Producers	18. Eco-labels will inform consumers on environmental claim and quality assessment of the products	In 2040, in the EU, intelligent labels will ensure quality assessment of over 80% of perishable food products (by monitoring multiple parameters such as ripening processes, external humidity conditions etc.).	3.61	1.1
	Retailers	19. The fusion of physical and digital stores becomes usual	In 2040, in the EU, over 80% of fashion retailers will have virtual fitting rooms - apps that allow users to upload a full-body photo and get an idea of what a garment looks like on their body without physically trying it on	3.88	1.15
	Retailers	20. The use of AI interfaces shapes retail shops functions and strategies	In 2040, in the EU, retailers will be marketing to the AI interfaces (e.g. virtual assistants such as Alexa, Siri etc., digital avatars with celebrity/influencer status on social media) that will act as gatekeepers between brands and consumers	3.82	1.04
	Retailers	21. DNA profile and/or real-time biometric will become relevant for payment and customers' profile	In 2040, in the EU, over 30% of physical customers will make biometric payments, e.g. by matching a fingerprint or retina scan against a credit card or bank account in a cloud-based system	4.09	1.21
	Warehouse & storage	22. Electric shelf labels will be adopted to a greater extent	In 2040, in the EU, more than 50% of supermarkets and hypermarkets will use shelf-scanning robots to capture granular data about the products on the shelves	3.97	0.99
	Wholesalers	23. Wholesalers will manage digital and traditional selling channels.	In 2040, in the EU, most large commercial centres/malls will become "retailtainment" centres where consumer brands will	3.91	1.06

STEEP domain	Ecosystem actors	50 Future Sheets	Delphi statement	Delphi score	Standard deviation
			create experiences that will promote their brands (e.g. games with holographic players, live music, masterclasses, VR realms etc		
	Wholesalers	24. The management of distribution channels will need advanced technological tools	n.a	n.a	n.a
<b>Economical</b>	E-commerce	25. "Click-and-collect" services become more relevant	In 2040, in the EU, click-and-collect sales will account to at least 30% of retail ecommerce	3.86	0.88
	E-commerce	26. E-commerce growth is going to raise environmental concerns	In 2040, more than 50% of goods will be moved across borders by autonomous transportation (e.g. autonomous trucks, autonomous vessels, cargo drones).	3.54	1.33
	E-commerce	27. Smart "point-of-sales" shops and dark stores are going to growth	In 2040, in the EU, over 50% of neighbourhood stores/small groceries shops will be using smart point-of-sale systems (which provide data-backed real-time alerts and suggestions for action), enabled by ecommerce platform/retail giants/tech companies trying to extend their dominance to offline retail	3.75	1
	E-commerce	28. Online channels sustain reselling markets	In 2040, in the EU, the resale/second-hand sector of fashion will reach at least 30% of the fashion market share	3.05	1.33
	E-commerce	29. E-commerce will growth further	In 2040, 90% of purchases in the EU will be facilitated by e-commerce	3.53	1.41
	Logistics	30. Circular economy models (reverse logistics) will be significant	In 2040, in the EU, reverse logistics (i.e. operations related to the reuse of products and materials) will represent over 30% of the logistics sector.	3.75	0.98
	Logistics	31. Climate extremes and associated natural disasters will affect global supply chains	In 2040, climate extremes and associated natural disasters will disrupt global supply chains multiple times throughout the year	3.96	1.01
	Producers	32. There will be a progressive application of the circular economy principles to the overall production processes	In 2040, in the EU, more than 50% of the non-durable goods on the market will have sustainable (i.e. recyclable, compostable or reusable) packaging	4.4	0.76
	Producers	33. Direct-to-consumer brands diversify their product lines	In 2040, for most legacy brands, direct-to-consumer sales will account for at least 30% of total sales, bypassing wholesalers and retail stores	3.84	1.03
	Retailers	34. Market consolidation and the end of independent local shops	In 2040, in the EU, over 50% of small shops will no longer be independent but they will be part of larger retailer chains	3.28	1.23



STEEP domain	Ecosystem actors	50 Future Sheets	Delphi statement	Delphi score	Standard deviation
	Retailers	35. Cryptocurrencies become mainstream payment methods	In 2040, cryptocurrency payments (either public cryptocurrency, store-specific cryptos, digital versions of most prominent regular currencies) will be the preferred mode of payment when shopping	2.64	1.29
	Retailers	36. Economic crisis and inequalities undermine consumers spending capacity	n.a	n.a	n.a
	Warehouse & storage	37. Time do delivery becomes the key warehousing competitive advantage	n.a	n.a	n.a
	Warehouse & storage	38. On-demand warehousing is going to increase	In 2040, in the EU, over 30% of small and medium-size retailers will use on-demand warehousing to store their inventory	3.89	0.99
	Warehouse & storage	39. The future warehouse will be more automatized	In 2040, more than 80% of the large-scale logistics warehouses managed by e-commerce platform operators (e.g. Amazon, Alibaba) will have reached full automation	4.09	1.04
	Wholesalers	40. In the future, wholesalers must face orders straight from the supplier	In 2040, for most legacy brands, direct-to-consumer sales will account for at least 30% of total sales, bypassing wholesalers and retail stores	3.84	1.03
	Consumers	41. The growth of elderly population with diminishing spending capability is likely to influence consumptions levels	n.a	n.a	n.a
	<b>Environmental</b>	Consumers	42. Environmentally friendly consciousness will influence consumers' choices	In 2040, in the EU, at least 20% of consumers with above average discretionary income will practice a form of frugality/anti-consumerism (e.g. reduced shopping budgets over longer periods of time, months with no fashion purchases etc.).	3.56
Logistics		43. The trend toward zero-emission vehicles in urban area delivery will grow	In 2040, in the EU, more than 50% of heavy goods vehicles (above 3.5 tones) will be zero-emission	3.75	0.98
Producers		44. Packaging will be more environmentally friendly	In 2040, in the EU, more than 50% of the non-durable goods on the market will have sustainable (i.e. recyclable, compostable or reusable) packaging	4.40	0.76

STEEP domain	Ecosystem actors	50 Future Sheets	Delphi statement	Delphi score	Standard deviation
	Retailers	45. Big retailers “go green” in investment decisions and CO <sub>2</sub> reduction	In 2040, in the EU, for over 50% of products in stores and web-shops, emission values will be available and will be calculated dynamically (to include, beyond production emissions, transportation emissions, warehousing, cooling times etc).	3.64	1.06
	Retailers	46. Recycling and resale/second-hand demand feed trends to waste reduction	In 2040, in the EU, the resale/second hand sector of fashion will reach at least 30% of the fashion market share	3.54	1.03
	Warehouse & storage	47. E-commerce boom will increase the need of more warehouse space	n.a	n.a	n.a
<b>Political</b>	E-commerce	48. E-commerce growth raises data privacy and security issues	n.a	n.a	n.a
	Logistics	49. EU regulation will address market fragmentation for parcel delivery (cross-border logistics)	n.a	n.a	n.a
	Retailers	50. Challenges for retail rise from the advances of the Single European Market	n.a	n.a	n.a

## 5 CONCLUSIONS

Table 3 provides the building blocks (Factors of Change) for the set-up of scenarios for the future of the retail ecosystem in 2040, which will be developed in Task 3 of the study.

Unsurprisingly, the **socio-cultural factors of change** are those that are going to influence consumers' profiles and expectations most (all have scores above 3.5). Future consumers **are expected to gain growing control over their choices** (thanks to new technologies, the ability to compare, and access to information), increasingly stimulated by social media, and willing to share personal data for premium and "personalised" products. They will also display a **strong preference for simplified purchase procedures** (using cash-less and cashier-less transactions). On the other hand, demographic projections **depict a future with a market influenced by older consumers, shrinking families, and a generalised labour shortage**, which will affect all retail sector segments, with in particular severe impacts for logistics and warehousing. **Urbanisation patterns** might strongly influence the retail ecosystem (i.e., the "15 minutes cities" and more proximity shops) even though the direction and the intensity of such development is difficult to envision.

The **technological landscape** will be dominated by Artificial Intelligence, Virtual Reality, and the Internet of Things, which will be integral parts of the overall retail value chain. E-commerce will benefit from **new applications (voice-assistant tools, smart appliances for online shopping)**, big retailers from **data analytics and predictive analysis**, logistics and warehousing from **just-in-time applications** to save time and management costs. It is **likely that the separation between physical and digital channels will diminish** in the future.

**Economic transformations** will be likely to address all actors in the retail ecosystem. **E-commerce is projected to grow substantially in the next years**, supported by social networks (particularly in fashion, healthcare, the re-selling market, and grocery products). Logistics and producers will benefit from the **affirmation of circular economy principles**, pushing the trend towards cost-savings technologies and production processes. New market segments as **on-demand- warehousing, point-of-sales, and dark shops** are going to thrive, stimulated by **online markets** and **time-to-deliver pressures**. Conversely, trends in **warehousing automation may negatively affect occupation and the growth of direct-to-consumers sales may remove wholesalers and retail stores, declining occupation and turnover**. Furthermore, the **negative economic implications on the logistics' supply chain from increased risks of extreme-weather episodes** must be considered.

In terms of **environmental drivers**, consumers will increasingly be **environmentally conscious in their choices**. This may lead to growing **market shares for second-hand products (fashion)** and to the adoption of **green labels and brands** known for **waste reduction** from both large retailers and producers. Growing environmental concerns at the urban level may impose **constraints on the logistics sector** (to last mile deliveries especially) with likely bans **to polluting vehicles (imposing zero-emissions fleets)**.

In conclusion, there are several factors of change that **cannot be controlled in democratic societies**. **Yet**, the socio-cultural changes resulting from demographic transformations or technological and economic trends involving the advent of artificial intelligence and the growth of e-commerce respectively may be supported and guided through different policies.

These factors of change can thus inform policy makers in building scenarios and developing related policies, providing them with **timely insights** on likely opportunities, distortions, and side-effects.



**FORESIGHT ON DEMAND IN SCIENCE, TECHNOLOGY, RESEARCH  
AND INNOVATION POLICY (ARGE FOD)**  
Giefinggasse 4, 1210 Wien, Austria

**Matthias Weber**  
Managing Director  
+43 50550-4561  
matthias.weber@ait.ac.at

**Dana Wasserbacher**  
FOD Office  
+43 50550-4520  
dana.wasserbacher@ait.ac.at