The rise of e-commerce platforms in the parcel delivery markets

Pier Luigi Parcu, Niccolò Innocenti, Chiara Carrozza, Anna Pisarkiewicz
European University Institute, Florence, Italy

Draft in progress, please do not quote

1. Introduction

Over the last years the growth of e-commerce has fundamentally changed postal and parcel markets. While the majority of the economic sectors of the global economy have severely suffered the impact of the ongoing COVID-19 pandemic, the growth of e-commerce actually has been boosted. In fact, e-commerce sales have increased by at least 10% globally in 2020 (especially in the "Food & Personal Care" sector) and projections foresee an additional growth of 10% in 2021 (Statista, 2020). These data show a paradox: the flourishing of e-commerce in times when the pandemic has disrupted international supply chains, imposing many constraints on international transport, particularly air traffic, which ultimately resulted in a decrease of the global trade (World Trade Organisation, 2020). For retailers, market-places, postal and parcel organizations the challenge is how to respond to this increased request of e-commerce in a context in which business and delivery infrastructures are under pressure, considering that demand is now driven by new consumer behaviours and preferences (many of which will become permanent). These new preferences reflect important evolution of consumers' needs as consumers increasingly require more express delivery, easy packages returns, tracking, multiple delivery attempts, ad hoc services and so on. All these factors require significant changes especially in the last mile delivery (Gevaers et al. 2011; Castillo et al., 2018), in particular in increasingly complex and expensive to serve urban areas (Beckers and Verhetsel, 2021).

While postal and parcel operators appear under the maximum pressure to deliver these new and better services they are not the only ones facing the challenge. Online retailers, and particularly marketplaces, face constrains in the expansion of their businesses, especially with respect to the cross-border delivery (Ecommerce Europe, 2021). For this reason, retailers and marketplaces are taking measures to secure the needed market capacity and to lower overall transportation costs. One form of response is that major business actors of the e-commerce sector have started entering into the delivery market.

It is in this context that the paper investigates the relationship between e-commerce and the evolution of the parcel delivery markets in Europe. The latter is, at the moment, a territory of open competition between three kinds of main actors: traditional postal incumbents, delivery operators and, now, e-commerce leading companies. Since the evolution of these markets is uncertain, the aim of this paper is to carry out a preliminary description and analysis on the evolution of the parcel delivery markets in response to the evolution of e-commerce, in order to explore how this evolution is affecting delivery and postal operators; also recalling that especially the latter had their business model under pressure for years now.

After this introductive section, the paper is divided into four parts. Section 2 presents the evolution and development of e-commerce markets and their different configurations, followed, in Section 3, by the different market configuration in the parcel delivery market in Europe. Section 4 presents four case studies: two related to countries showing the entrance of global e-commerce platforms (Italy and United Kingdom) and two related to countries (the Netherlands and Poland) where national operators are still leading in the e-commerce market. Finally, Section 5 concludes the paper, comparing the cases presented and suggesting leads for further research.

2. The boom of e-commerce: e-retailers, global and local marketplaces

The growth of e-commerce is one of the key trends affecting the retail sector, the biggest sector in the EU non-financial business economy in terms of the number of enterprises and persons employed.[1] According to a study conducted by PostNord (2020), which involved nationwide samples of private individuals, aged between 15–79, the percentage of people who shop online is above 83% in all the countries selected for the study, with an increase of nearly 15% in average sales per person and per year in comparison to 2019 (in 2020 average online spending amounted to almost EUR 1,000). The study also underlines that, in a trend that sees the European population becoming increasingly skilled digitally, the pandemic has further boosted activity of previously reluctant group of consumers (such as older people), who have finally started to shop online. Germany and the UK are the strongest e-commerce markets in Europe, followed by France, Spain and Italy. With respect to Western Europe, which is characterized by relatively more mature e-commerce markets, Eastern Europe, with Poland usually considered the largest e-commerce market in the region, starts from lower levels of the relevant indicators but now grows more quickly.

E-commerce sales channels include both retailers' own digital channels (retailer's website where customers can place orders to be delivered to their homes or to other pick-up points) and online marketplaces, such as Amazon, the largest global e-commerce platform. One should note, however, that the distinction is blurred when an online marketplace also sells its own branded products, thereby acting as both a marketplace and a retailer.

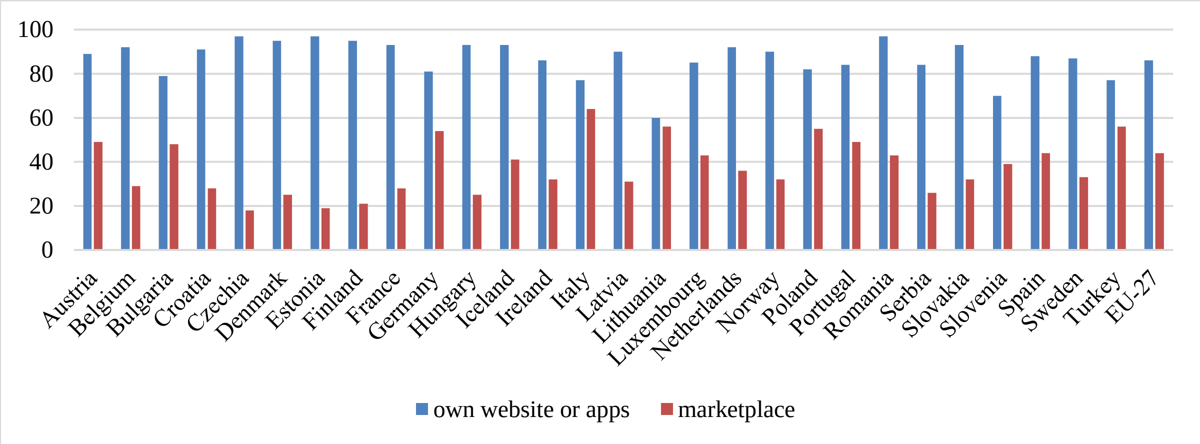
According to Eurostat (2020) data on e-commerce (Fig. 1), which includes the purchases of both goods and services, in 2019, 86% of EU enterprises used their own websites or apps for web sales, while 44% used an e-commerce marketplace (of course a firm can use both channels).[2] The highest percentage of enterprises with online sales via their own websites or apps were registered in the Czech Republic, Estonia and Romania (each 97%), while web

[1] https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52018SC0236&from=EN

[2] The data are based on the results of the 2020 survey on 'ICT usage and e-commerce in enterprises' see https://ec.europa.eu/eurostat/statistics-explained/index.php?title=E-commerce_statistics#

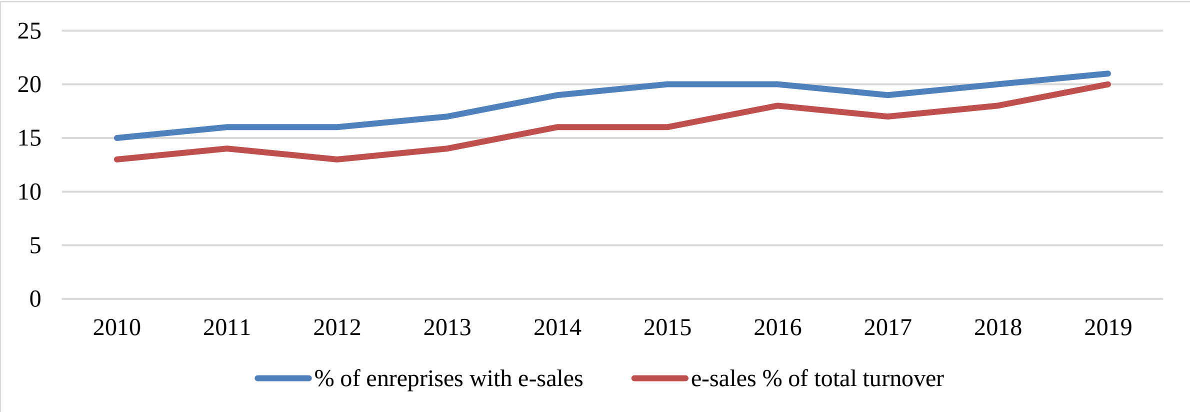
sales via marketplaces were most common in Italy (64 %), Lithuania (56%) and Poland (55%).

Fig. 1 Percentage of enterprises with web sales using own website and apps or marketplace (2019)



Source: Eurostat

Fig. 2 Evolution of e-sales and turnover from e-sales 2010-2019 EU-27



Source: Eurostat

E-sales have recorded a slight increase everywhere in the EU-27 in the last decade (Fig. 2), in terms of both the number of the enterprises and turnover, the preferred channel for European enterprises remains the proprietary websites and apps rather than acting as merchants in marketplaces (Fig. 1). Moreover, data on the turnover from online sales broken down by enterprises' website and apps or marketplaces (Eurostat, 2020) reveal that in a year in which EU enterprises produced 7% of their total turnover from web sales, 6% came from sales via own websites or apps while only 1% came from sales via online marketplaces.

Notwithstanding their secondary position as channel of e-sales, online marketplaces have experienced a remarkable growth over the last years, especially since the pandemic outbreak. The growth has regarded not only the well-known global or multinational players, such as Amazon, eBay, Zalando[3] and, more recently, AliExpress (the subsidiary of the Chinese giant

[3] Zalando, which was originally created in Germany, is now present in 17 European markets, and for this reason is here included among the multinational e-commerce platforms. Amazon showed a European online turnover

Alibaba),[4] but also local or European players. For example, in the Netherlands, two most relevant e-commerce platforms are national players (Bol.com and Coolblue, with a turnover of EUR 2.2 and 1.1 billion respectively, this is a value three times larger than the online turnover of the three multinational operators cited above for the Netherlands). In Poland, Allegro is leading in the market with a turnover slightly below one billion euro, whereas in Belgium the Dutch e-commerce platform Bol.com may be considered the leader, with approximately EUR 400 million. In the largest European countries, Germany, France, Italy, UK and Spain, global companies, such as Amazon or eBay prevail,[5] even if in some of these countries there are also relevant local players, such as Otto in Germany (where Amazon is the clear leader with more than EUR 10 billion of revenues, followed by Otto reaching values slightly below EUR 3.5 billion) or Cdiscount in France (with revenues around EUR 2 billion, largely below EUR 5 billion of Amazon, with the latter registering a growth of more than 50% between 2019 and 2020).

A recent study (Lehdonvirta *et al.* 2020), which focused on the role of local and global digital intermediaries in the retail sector, has identified three broad clusters with respect to market configurations. The first one includes the 5 Europe biggest retail markets – the UK, Germany, France, Italy and Spain – where the retail sector is highly "platformized" and dominated by the global players. The second group comprises instead countries where local e-commerce companies lead the market: Poland and the Netherlands, which are in this group, are both medium sized retail markets; while that are still attractive to global leaders, they are big enough to allow for the development of local platforms. Finally, a third group includes countries where the retail e-market has not yet developed to a significant degree.

The variety of configurations of e-commerce markets, and the role of global versus local platforms can find some intuitive explanations, among others: the dimension of the market (as discussed by the study just mentioned), the preference for shopping locally, and especially in one's own language (this seems to be the case of Poland according to PostNord (2020), and of some northern European countries), different price sensitivity, low internet penetration or mistrust in shopping online (in this respect all the European markets are catching up but some, particularly from the Eastern Europe, still lag behind).[6] Another reason can be found in the fragmentation of the regional logistics (Kansara, 2018).

---

around 32 billion € in 2019 followed by Otto with 6.9 billion and Zalando with 6.4; eBay follow a different business model and does not appear in these classifications, however, is considered one of the most relevant e-commerce platforms in Europe (European E-commerce report, 2019).

[4] Alibaba group was founded 1999 initially was a B2B e-commerce portal aimed at connecting Chinese companies with foreigner buyers. At the beginning of the 2000 it expanded also to C2C through the Taobao marketplace and B2C through Tmall. The Group reached a turnover of more than 100 billion $ in 2020. AliExpress founded in the 2010 is the overseas e-commerce platform of Alibaba and reached in 2018 approximately 150 million overseas buyers in total, is the most visited e-commerce in Russia and among the most relevant in many European countries (Spain, Netherland and Belgium).

[5] In all these countries the leading online marketplace is considered Amazon, followed by eBay (except of Spain where the second is AliExpress) while Zalando is the third in the largest part of these countries (PostNord, 2020).

[6] See the Digital Economy and Society Index (DESI) elaborated by the European Commission (2020) and the evolution. This is a composite index summarizing five indicators relating to the digital performances of European countries: Connectivity, Human Capital, Use of Internet, Integration of Digital Technology, Digital Public Services.

Besides the above explanations, one element that is certainly relevant for this paper is that the delivery phase is becoming increasingly crucial for online retailers. This is not only because delivery in itself is a growing and promising sector, but mainly, as suggested by several studies, because timely and trustworthy delivery is one of the main factors that determines the choice of one e-commerce platform over another. In practice, in online retail markets, the delivery factor sometime emerges as even more relevant than the price of the products (MH&L, 2016; Kovac et al., 2017).

3. Different delivery markets configurations across Europe

In the recent years, the parcel delivery market has shown a tremendous growth in terms of volumes and revenues (Mazarenau, 2019; ERGP, 2020). This increase is largely due to the rise of e-commerce and to the Covid-19 pandemic, which has accelerated this trend globally, particularly with respect to the B2C and C2X categories.[7] Moreover, this acceleration is particularly evident in those countries that were less digitalized or with a low presence of fast delivery and where, for these reasons, e-commerce was still struggling (Valarezo *et al.*, 2018).[8]

The development of e-commerce has had an important and positive impact on the postal market and on the postal operators that before the advent of large use of e-commerce had been experiencing a slow decline of their market's revenues. In fact, over the last years, the total revenue of postal services in Europe has been slightly growing, with an average increase of almost 2%, which in 2019 has reached around EUR 70 billion. This value reflects the decline of the letters (average decline of 2.6%), and the larger growth of parcels (5.6%) that in 2019 reached close to EUR 39 billion in total revenues. According to the last ERGP report (2020) this trend is much more evident for the volumes: in this case the proportion of parcels volumes to total volumes has increased from 8% to 13% in the period 2015-2019. This is due to the strong increase of parcels volumes that showed an average annual growth of 9% in the period 2015-2019 and the fall of letters volumes (-5.3% on average during the same period). Particularly interesting is the strongest growth, among the EU, in the Eastern European countries showing an increase of 27.3% of parcels volumes with an increase of 11.4% of the revenues.

Besides these trends, parcel delivery markets are largely diversified across Europe (Parcu et al., 2018). Differences are often attributed to various sets of reasons. For example, Eccles and Kuipers (2006), point to national regulations and the different timeline of liberalisation[9] and implementation of the EU postal directives into national legal regimes in European

[7] Commonly, the parcel delivery market is divided into three main categories: business to business (B2B); business to consumer (B2C); and consumer to X (C2X, where the X means both other consumers, packages returns etc.). The common definition of the parcel delivery market usually excludes documents, mails and freights or packages over a certain weight (usually around 40kg).

[8] Eurostat data regarding the percentage of population purchasing online show an average increase among EU-27 of the 3% in the period 2018-2019, however some countries, mainly form the Eastern Europe, showed an increase largely above the average (Croatia 8%; Czechia and Slovenia and Hungary 6%; Estonia 5% and Poland 4%).

[9] Ultimately, it was the third Postal Directive 2008/6/EC that has set the timetable for full market opening, putting an end to the exclusive rights to the letter segment.

countries.[10] According to Jaag (2015), the level of digitalization of the country, which favours the development of e-commerce, strongly affects the parcel delivery market, stimulating both volumes and competition.[11] Other local characteristics also play a role as factors such as the dimension of the internal market, the concentration of the population in large cities or in the rural areas or the strength of the incumbent (often the ex-monopolist) all contribute to different market configurations across Europe (Vantomme, 2014; Jaag, 2014).

Despite the relevance of these characteristics, another pertinent difference among European countries may be related to the typology of e-commerce operators present in the market (national versus global operators) and to their interest in expanding their activities in the delivery markets. While, until recently, these e-commerce platforms provided only logistic and storage services and left to the national, regional and local players the execution of the last mile delivery phase, more recently they have started showing more interest in the delivery as a promising new phase to integrate in their chain and as a strategic asset for their business (Sidak, 2017). Certainly, the entry of e-commerce platforms into the delivery market would affect the market structure and the evolution of its competitive setting. However, until now, little space has been devoted to the study of the role of e-commerce platforms in the logistics and delivery section of the supply chain (Finger et al., 2014; Morganti et al., 2014; Gori and Parcu, 2018; Alimonti et al., 2020) and of their impact on market's contestability (Borsenberger, 2016 and 2018).

The parcel delivery sector is traditionally considered to have low entry barriers, maybe not in cross-border delivery, but clearly regarding local markets that include the last mile (IBISWorld, 2015). According to Borsenberger (2016), the increasing relevance of e-commerce is one of the elements that is driving the dominant position of postal operators in the parcel market to become more and more contestable. This is related to the fact that there are few relevant e-commerce operators that emerge in a country and often one of these may be identified as having a dominant position: this concentration of the e-commerce market in few and powerful hands may be viewed as a relevant issue for parcel delivery operators who face an increasing pressure from e-commerce players as they become increasingly dependent on the revenues connected to the contracts with them. This pressure and dependency of postal operators increases the bargaining power of e-commerce operators not only with respect to small operators but also vis-a-vis the large and consolidated operators. According to Borsenberger (2016:8), *"The strategic choices of parcel delivery operators in terms of pricing policy in particular, their revenues, and their profitability all depend on the characteristics*

[10] The liberalisation of the postal sector belongs to the wider category of European Community policies that seek to ensure and protect the provision of services that are of general economic interest (SGEI). As the provision of such services is of fundamental importance in the promotion of social and territorial cohesion, national regulatory authorities have to take regulatory decisions in light of this objective. In fact, from its inception, the liberalisation of the postal sector sought to strike the right balance between the sustainable maintenance of the universal service and the promotion of competition, which would bring lower prices to, enhanced service quality, and wider choice. To that end, and to reduce significant divergences between Member States, the EU adopted three Postal Directives which, overall, grant Member States significant discretion in setting their national postal service requirements.

[11] However, this situation in the last few years, and particularly since the outbreak of Covid-19, is becoming more balanced across Europe since also countries that have been lagging behind are now catching up regarding internet penetration and e-commerce purchases

of their e-commerce customers. With greater concentration in the e-commerce market, parcel delivery operators face buyers with an increasing bargaining power which prevents the former to use their potential market power". This may underestimate the strength of certain legacy operator but clearly underlines the new frontier of competitive challenge among major players originally coming from different markets along the value chains of retail and delivery.

Given the increasing interest of e-commerce platforms in the delivery phase, some regulatory authorities have started to monitor attentively their role in the delivery market. According to AGCOM (2020), in Italy e-commerce platforms are entering the parcel delivery market mostly through the use of medium and small size operators that, in some cases given the strong influence that multinational platforms may exert, are considered as "dominated" by the platform. Actually, AGCOM (2020) has a preliminary finding asserting that in Italy Amazon has a significant market power in a specific subset of e-commerce parcels delivery, the B2C *deferred.*[12] What is interesting in this finding is that AGCOM attributed to Amazon market power for the delivery of parcels done through third parties (small postal operators) and for third parties (objects not present in their stores). In addition, AGCOM claimed that in the future Amazon may be the only operator able to take advantage from the growth of e-commerce, inevitably reducing competition in the market, and thus, also the quality of services. In order to support this prevision, the authority presented information regarding the growth of the first period of 2020 (also connected with the impact of Covid-19), showing a tremendous increase of volumes (76%) and revenues (73%), drastically higher than the annual average of other operators that are respectively 12% for volumes and 4.4% for revenues. Following a similar approach, also the Spanish CNMC (2020) identified the activity of two Amazon's owned companies as "postal activity", and thus subjected them to compliance with the requirements established in the Postal Law. In Spain, the main focus of the discussion is the intensity of control that Amazon has over its parcel delivery service and the fact that Amazon offers these services also to third parties.[13]

The entrance of e-commerce operators into parcels delivery is not a European only issue. A few years ago, the U.S. Postal Service has started addressing this problem. In fact, as they identified a risk of the strategic opportunities by large e-commerce platforms to enter the parcel delivery market, the Office of Inspector General (OIG) of the U.S. Postal Service, has asked professor John Panzar (2017) to carry out an analysis, which was presented as a report of the Risk Analysis Research Center (RARC). The report discussed the issue through a theoretical model indicating how the postal operators needs to seek out a price that (in all cases) exceeds unit cost and is not only lower than the competitors' prices but also low enough to discourage large retailers from self-delivery. However, the discussion is still alive and other

[12] Following AGCOM (2020) the e-commerce national B2C parcel market is divided into *express* and *deferred* where the latter means parcels delivered in 3-5 days. AGCOM, identify Amazon as the first operator in the *deferred* and the second operator in the *express* segment.
[13] CNMC (2020): "The difference between the case of a platform such as Amazon and that of other sellers or retailers (who can operate on and off-line) is the full control and management capacity that Amazon exercises over its parcel delivery service, the fact that this service covers the various activities of the postal cycle, and that the Amazon Group network is used to provide services to third parties. In short, the intensity of the control that Amazon has over its parcel delivery services is not comparable to that which other retailers have over their own, insofar as the latter outsource the delivery of their service to one or more parcel delivery service providers".

scholars (Sidak, 2017) suggest that this view does not account for many strategic actions from e-commerce platforms and possible harm for consumers[14].

It is therefore crucial to understand market strategies of platforms with respect to the delivery phase, also given that different platforms appear to behave differently. For example, the two main e-commerce platforms, Amazon and eBay, seem to follow quite different strategies. The former, that may be considered the leader in the B2C segment, shows since the late nineties a stronger interest in the delivery phase and defined it as crucial since the early 2000 with the “Amazon prime” project (Hahn *et al.*, 2018).[15] Ebay, on the other hand, the leader in C2C, was less interested in delivery services and started offering its own delivery services only in the last few years (Heller, 2019).

Despite the obvious worries of major postal actors on the possible overlaps of e-commerce vertical integration upstream towards the delivery phase with their own area of activity, they have also approached e-commerce as an opportunity. Several operators have considered vertical integration downstream, looking at the e-commerce activity as a promising sector to enter. Some examples of postal operators that integrated downstream in the value chain, launching their own e-commerce management platforms or other e-commerce projects are FedEx,[16] UPS,[17] DHL[18] as well as some national European operators, which often launch their projects through joint ventures. For example, in 2010, Poste Italiane (Italy) launched an online shop on eBay through its subsidiary Postemobile;[19] in 2017, La Poste (France) created an innovative online shop platform, in partnership with ePages (leader for online shop solutions), with many services for all the companies wishing to sell their products online;[20] while CCT (Portugal), thanks to a joint venture with the Portuguese retail group Sonae, launched a digital marketplace platform in 2018 (Copenaghen Economics, 2021).[21]

National postal operators, and particularly incumbents, are large companies with relevant economic strength, and certainly possess the technical capabilities to deal with parcels storage, logistics and delivery. In addition, during the last years, the postal operators in many countries already showed the capacity to enter into new sectors (mainly banking and insurance) that, similarly to e-commerce were characterized by the presence of large and well-established actors. Entry in these sectors was facilitated by some of the characteristics of the postal actors that showed clear economies of scope, such as their capillary distribution nationwide, the stable relationship with clients or part of the technologies and informatics systems that were easy to integrate with those needed in the new sectors. Also in this case,

[14] The possible harm is not related directly to parcels delivery (as the price would be lower) but to the likely overcharging of customers of market-dominant products that would be needed to sustain the losses related to lowering prices.

[15] Amazon Prime was launched in February 2005 in the US, with an initial price of 79$ for free two-day shipping in the US on eligible purchases, in the following years started to add services to the Prime subscription as Video, Music, Prime day etc. (Yurieff, 2018).

[16] https://newsroom.fedex.com/newsroom/fedex-supply-chain-launches-fedex-fulfillment/

[17] https://www.ups.com/us/en/services/e-commerce/efulfillment.page

[18] https://www.dhl.com/global-en/home/our-divisions/ecommerce-solutions.html

[19] http://www.postemobile.it/sala-stampa/comunicati-stampa/postemobile-inaugura-postemobile-store

[20] https://www.retaildive.com/press-release/20171204-epages-and-la-poste-partner-to-launch-next-generation-online-shops-for-fren/

[21] https://www.esmmagazine.com/technology/portugals-sonae-group-launches-e-commerce-platform-ctt-61112

postal operators have crucial expertise needed for the e-commerce business, namely the technologies to store, manage and deliver large amounts of parcels.

To explore more in details the relations of cooperation and competition between postal operators and e-commerce platforms in the delivery markets, the next two sections will be devoted to a case-study analysis. The choice of the countries was based on the presence of a national or global e-commerce platform as leader in the market and on the analyses emerging from previous studies (Lehdonvirta *et al.*, 2020; Parcu *et al.*, forthcoming). The UK, the first market where Amazon decided to enter in Europe, and Italy represent a first group of cases, which are characterized by a big national retail market, and the leading position of a global e-commerce platform in the market. The second group of cases include Poland and the Netherlands, which have both medium-sized national markets and in which national platforms presently dominate the e-commerce market.

3. Case studies

3.1 The case of Italy

Among the biggest retail markets in Europe, Italy can be considered to have a modest e-commerce markets, with online shopping accounting for just 6.5% of overall retail. However, the trend is one of growth, thanks to the rising use of smartphone and to global events such as the pandemic, which stimulated shopping online. Actually, the market has grown at a double-digit rate since 2017, with B2C market being worth EUR 31.6 billion. The cross-border e-commerce (Italy's most popular international e-commerce markets are China, the UK, and Germany) is instead higher than European average, with over half (51%) of online consumers having already purchased from international merchants.[22] As for the value of purchases of Italian e-consumers, it increased almost twofold from 2015 to 2020. In fact, the value of online purchases amounted to EUR 16.6 billion in 2015 and reached EUR 31.6 billion in 2019, before decreasing to EUR 30.5 billion in 2020[23]. The figures, therefore, suggest a strong growth of the market, even if it is not comparable with the dimensions of other European countries such as the UK.

According to the data published by Statista in 2021,[24] Amazon.it is leading the Italian e-commerce market, with e-commerce net sales of $2,896 million in 2019 generated in Italy, followed by Zalando.it with $517 million. Third place is taken by Apple.com with revenues of $358 million. Shein.com is the fourth biggest online store in Italy with net sales of $296 million in 2019. The most used marketplaces, according to a market research conducted by Casaleggio Associati (2021), are Amazon (38%), eBay (21%), Facebook Marketplace (13%), ePRICE (3%), Alibaba (2%), and Zalando (2%). Amazon is the clear leader of the market: between June 2019 and 2020, it sold 60 million products from Italian retailers (compared to

[22] JP Morgan, 2020 E-commerce Payments Trends Report: Italy available at: https://www.jpmorgan.com/europe/merchant-services/insights/reports/italy-2020#footnote-1

[23] https://www.statista.com/map/europe/italy/e-commerce

[24] https://www.statista.com/forecasts/871153/italy-top-online-stores-italy-ecommercedb

45 million from the previous period). However, its competitors are also investing in the national context: Alibaba, Zalando and eBay have launched specific projects in the country to respond to the competitive pressures.[25]

An interesting data is that, among the marketplaces, the share of "Other" in Italy is growing, and accounts for more or less one fifth of the market for marketplaces. Among them, have emerged, particularly during the pandemic, some "local marketplaces" (as examples see TrevisoNow and Driin), mostly focused on the regional scale and offering services to local businesses and shops that are not online.

The development of e-commerce has led to a remarkable growth of revenues and volumes of parcels in the country (AGCOM 2021a). In terms of revenues of the postal services from March 2020 to March 2021, the total increase of 25.5%, is due to the increase of almost 42% of the revenues from parcel delivery services, particularly in the domestic market. The growth of volumes is less stunning in total (almost 8%), but, considering the parcels, it amounts at an increase of 60% in one year.

In the perimeter of the Universal Service (US), Poste Italiane is the operator in charge of offering "ordinary delivery" at domestic and cross border scales, which are typically purchased by private senders (consumers) and have prices and conditions established in the current legislation. Universal services can therefore be classified as C2X deferred. Services with express, next day delivery (e.g. 24/48 hours for national delivery; the type of service that has historically been characterized as express courier offer) and services with next day delivery at a certain time ("time defined" or "time critical"), are located instead outside of the universal service. These kinds of services represent the largest share of the market – universal service parcel delivery amounts to 10% of total volumes and consists mainly of cross-border inbound delivery, which had a substantial reduction since the pandemic. The growth of the market is therefore mainly pushed by B2C segment of the market.

The parcel delivery market in Italy seems to have relatively low barriers to entry[26] and this is confirmed by the constant growth in the number of operators that amounts to more than 3.000 companies.[27] This feature of the Italian market has been defined by AGCOM (2017, Annual Report) as somehow "anomalous" with respect to other European markets. However, the same NRA (2021b, p. 89) underlines that the number of operators actually able to compete at the "end-to-end" level with the incumbent is exiguous, with 40% of the parcel delivery operators being individual companies. AGCOM has argued that the postal networks that can be considered as alternative to the one of Poste Italiane, are the result of the aggregation between operators active at smaller scales, linked together by contracts of *franchising* or

---

[25] Alibaba has launched the "Made in Italy Pavillon Project"; Zalando the "Connected Retail" project and has intensified the partnership with Poste Italiane; E-bay, thanks to the commercial strategies put in place saw a growth of 40% of professional retailers in one year (March 2019-March 2020); see Casaleggio Associati 2021.

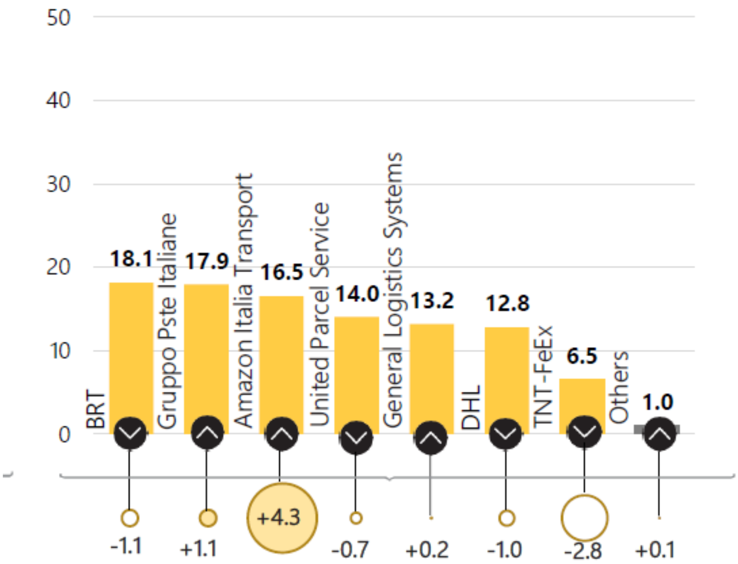
[26] Companies have to submit a request for a qualification to the Ministry of Development (MISE) and pay a fee, which is not too high (about EUR 3,000).

[27] https://www.mise.gov.it/images/stories/documenti/elenco-operatori-postali-21-02-2020.pdf

partnership. This "hub and spoke" configuration of the market has prompted AGCOM to carefully monitor its evolution and dynamic. The analyses of the sector are focused on the 27 companies with the highest revenues, which according to the inquiry made by the Authority are connected to 800 local operators that cooperate closely with them in several phases of the delivery process. Among the 27 companies,[28] some are present, exclusively or mainly, in national deliveries (e.g., Amazon, BRT, Citypost, GLS, Nexive, SDA and TNT), while other deliver mainly cross-border parcels (e.g., Asendia, UPS, Schenker and FedEx). Some of the operators have entered the market just after the takeoff of the e-commerce and specialized in the last mile delivery (Milkman, a successful start-up launched in 2015). Among all of the operators, Amazon Italia Transport, which has been officially included among the postal operators since 2018, is the only vertically integrated online platform in the sector, and it is also one of the main customers of many postal operators.[29]

It is acknowledged that the Italian parcel delivery market has a relatively low level of concentration (Parcu *et al.* forthcoming): all the operators have shares below 20% and Poste Italiane (which includes the controlled SDA) is the second operator, following BRT. In recent years the shares of Amazon Italia Transport have grown significantly (+4.3% in the period March 2020-March 2021, see figure 3), and the company is the first operator in B2C deferred and the second in B2B express deliveries.

Fig. 3 Shares of parcel delivery services operators (not included in the US)



Source: AGCOM 2021a, p. 17

[28] Asendia Italia, Amazon Italia Transport, BRT, Citypost, Defendini, DHL, Elleci, FEDEX Express Italy, Fulmine, Go Courier, GLS Italy, GPS, HR Parcel, Hibripost, Italposte, Lanuovaposta, Mailexpress, MLK Deliveries, Nexive, Poste Italiane, Postel, SDA, Rotomail, Selecta, Schenker Italiana, TNT, UPS Italia.

[29] In 2018 Poste Italiane signed a pluriannual contract with Amazon for the parcel delivery, and according to the data disclosed by AGCOM (2019), it was the first customer in terms of turnover for Poste Italiane Group.

In conclusion, the Italian delivery market, despite its excessive fragmentation, can be regarded as being quite dynamic and contestable. An interesting data, in this respect, is that the number of the so-called Pick-Up Drop-off points (or PUDO) of alternative operators has registered a constant growth in time, reaching in 2020 more than 50% of the total number of PUDO points (it was 14% in 2014).

3.2. The case of UK

The UK represents one of the few cases where letters continue to have relatively high volumes per capita (151 per annum), with slower decline respect to other major European countries. Moreover, letters continue to account approximately for the 50% per cent of the incumbent (Royal Mail) revenues (Parcu *et al.,* forthcoming). In contrast to the decline in the letter market, the parcels market has witnessed a high growth in recent years due to the increasing popularity of e-commerce that showed an increase of around 20% of sales in the period 2017-2019 (Statista, 2020b).[30] With 48.6 million of consumers and 95% of population aged 15-79 that shop online and with an average spending per person that is estimated to EUR 1,020, the UK, together with Germany, constitute the strongest e-commerce markets in Europe, and the leadership in this market is firmly in the hand of Amazon, with a total net sales in the UK accounting for approximately EUR 20 billion in 2020 (Amazon, 2020),[31] reaching roughly 30% of market share, followed by eBay (9.8%), Sainsbury's (4.6%) and Tesco (4.5%).

Two trends, in particular, have invigorated competition in the UK parcels market in recent years. First, the number of retailers that have started to offer their own delivery services has grown. For example, with the launch of its own delivery service, Amazon was able to capture 3% of the UK parcel market in just a month. Second, in-store collection and delivery services have also grown significantly. Furthermore, as parcel carriers continue to invest in new capacity, pricing pressure increases. According to the Royal Mail's estimate, there is approximately 25% overcapacity in the UK parcel market (Royal Mail, 2018).

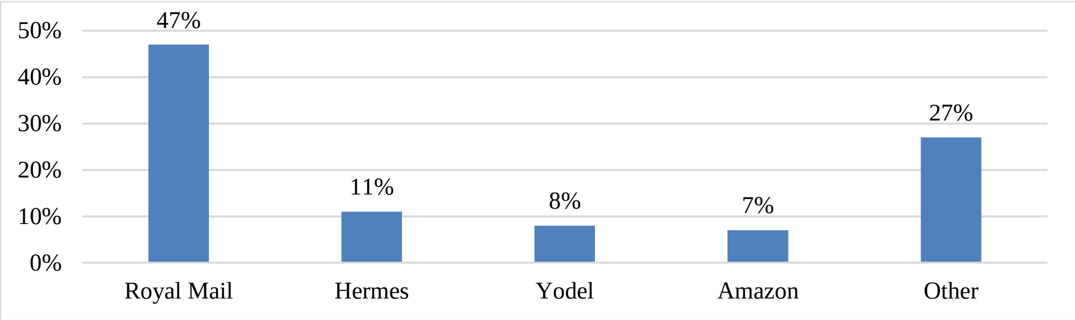
The parcel market in the UK is largely unregulated. While the Royal Mail offers an access service for parcels; this product is not mandated by regulation, but is offered by the incumbent operator voluntarily, on a commercial basis. Yet, access competition in the parcels market remains small, both in terms of volume and revenues, as end-to-end competition prevails, since most parcel operators rely on their own networks. In 2019-20, Ofcom continued to collect revenue and volume data from the major parcel operators in the UK, which include: the Royal Mail Group (including Parcelforce Worldwide); Hermes; Yodel; Amazon Logistics (encompassing both Amazon Marketplace and Amazon Retail); DHL International and DHL

[30] All the main statistics suggest an increase approximately of 20-25% in the considered period also considering different markets, in this case (Statista, 2021) suggest a total value of 64 billion GBP in 2019. However the majority of other studies (PosteNord, 2020) considering only B2C e-commerce attribute a total value ranging between 50 and 60 billion.

[31] The total revenues reported in the Annual report account for 26.5 billion $ in 2020 but includes Prime membership fees, advertising revenues and web services that are not relevant for this study.

Parcel UK; DPD Group; DX; FedEx and TNT UK (a subsidiary of FedEx); the Alternative Parcels Company; Tuffnells, and UPS.

Fig. 4 Distribution of the courier parcel market in the United Kingdom (UK) in 2017, by company



Source: Statista Dossier Postal Services in the United Kingdom.

There have been a few mergers in the parcel sector. In March, 2019, Delivery Group, which is also an access letters operator, acquired ONEPost, another access letters and parcels operator. In December, 2018, Whistl acquired the Spark Ecommerce Group, a fulfilment and contact centre company. Previously, Whistl had acquired Parcelhub and Mail Workshop in July, 2018, and Prism DM in August, 2017. In September 2018, DHL Parcel UK and Smith News concluded an agreement, on the basis of which DHL took over the parcel shop network that was used by Smith News' Pass My Parcel (Ofcom, 2019).

During the last year, also due to the COVID-19, the parcel delivery volumes and revenues grew tremendously, in particular for the incumbent. According to their report, the volumes grew approximately by 35% and revenues by 20% (Royal Mail, 2020). Despite the belief that the increased demand for e-commerce, to which postal operators responded with substantial investment,[32] will not change even after the Covid-19, operators are concerned about the future of the parcel delivery, largely due to the entrance of Amazon in the B2C parcel delivery.

"*Amazon is an increasingly important player in B2C market dynamics and continues to expand its parcel delivery capability. As a large online retailer, Amazon uses multiple carriers to deliver its own retail products, as well as the goods of third-party sellers on the Amazon Marketplace who use its Fulfilment by Amazon (FBA) service. The FBA service provides warehouse storage, customer services and product delivery. Amazon also has its own delivery network – Amazon Logistics. Amazon uses Amazon Logistics to carry parcels sold on the Amazon website, either by Amazon Retail or third-party FBA sellers. In addition, Amazon has recently launched Amazon Shipping in the UK, whereby Amazon has begun to collect parcels from some retailers' own premises for delivery.*" Ofcom (2020).

[32] According to Ofcom (2020) due to the Covid-19 all the main parcels operators are responding to the increase of the demand creating new jobs and increasing their investments. Hermes announced to recruit 10500 new employees, DPD 6000, Yodel 2950 and Royal Mail 33000 temporary workers for specific periods.

To conclude, the UK parcel market may be considered as interested by rapid changes, showed by the many mergers and acquisition among parcels operators, the recent entrance in a relevant position of Amazon, the changes related to the Covid-19 followed by new investments and recruitments. However, despite the outlined concerns related to the future of the industry mainly connected to the entrance of e-commerce platforms in the parcel delivery, the dominant position of Royal Mail is not yet contested by any other operator.

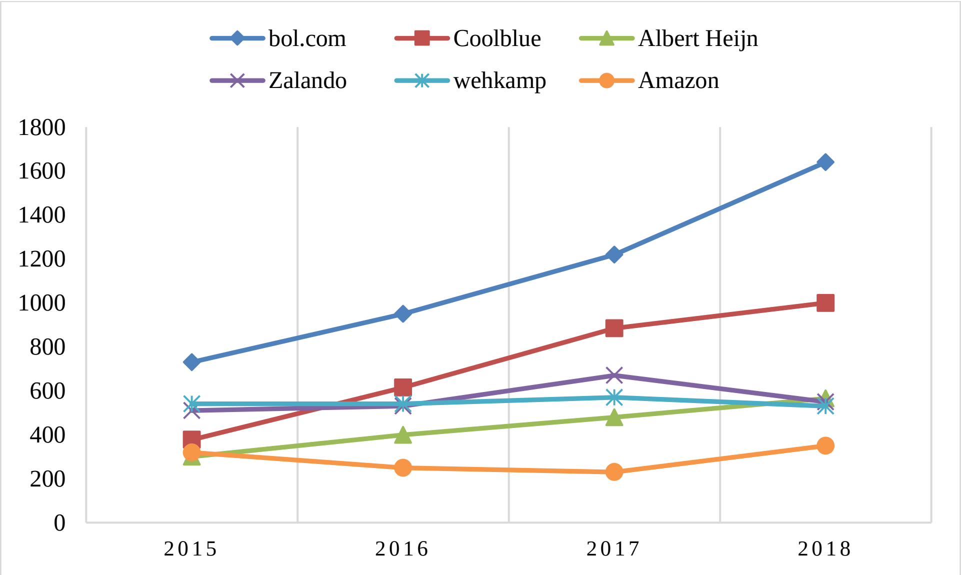
3.3 The case of The Netherland

With an Internet penetration rate reaching 96% of the total population (2019), and with 80% of national consumers doing shopping online, The Netherlands is among the top countries in Europe in terms of using online retail, and, even if in absolute terms it finds itself in a position below the leading markets of UK, France, Germany and Spain, it stands out for its rapid expansion in recent years.

The online retail industry in the Netherlands is largely dominated by domestic companies: according to Statista's data[33], approximately 60 percent of Dutch consumers claimed they did not do an online purchase outside of the Netherlands in 2017 and, as a result, Dutch cross-border e-commerce purchases rank lower when compared to other European countries.

The biggest online stores in the Netherlands include domestic players like online hypermarket Bol.com, electronics retailer Coolblue and fashion store Wehkamp, with major e-commerce platform Amazon and Zalando also present in the top six (see figure 5).

Fig. 5 Leading online retailers in The Netherlands 2015-2018 (revenues; million euros)



Source: Statista's data

[33] https://www.statista.com/topics/4909/e-commerce-in-the-netherlands/

Bol.com and Coolblue are the clear leaders of the Dutch e-commerce market (Gelici 2020).

Bol.com's business model resembles that of Amazon in the USA: it was established in 1999 by the German company Bertelsmann and started off with selling books, cd's and DVD's, but quickly evolved into a marketplaces, widening its product range to a large variety of niches. The company was takeover by Ahold, a Dutch grocery retail company active in many European countries, in 2012. In 2018, Bol.com turned over 1.64 billion of Euros, making it the online retailer with biggest turnover in the Dutch market.

The extremely popular marketplace Coolblue was created in 2000 with three separated online shops that where merged into the Coolblue.nl domain in 2018. The company, which sells Electronics, a wide range of household appliances, fitness and fashion products and much more, has a Dutch, Belgian, and German website and has 15 physical stores in the Netherlands and Belgium. It is focused on building "end-to-end" solutions for its customers: it launched its own van delivery service CoolblueDelivers in 2016 and further expanded its delivery proposition in 2018, when it introduced CoolblueBikes.

As for the well-known global e-commerce platforms, Zalando and Amazon, the first one is active in The Netherlands since 2010 while, until very recently, Amazon was not active in the Netherlands, with the e-commerce giant using a partially translated version of their website to appeal to Dutch audiences. In March 2020, Amazon launched Amazon.nl and since then the reach of Amazon in the country increased steadily, even if the leadership of the local marketplaces is still unquestioned[34].

The peculiarity of the e-commerce market's configuration in The Netherlands can be explained as a combination of several specific factors that include: the high percentage – well above the European figures – of people accessing the Internet on mobile devices, which boosted the mobile commerce; a strong preference of consumers for shopping domestically and in Dutch; an online payment space dominated by the domestic brand IDEAL, developed and launched by Dutch banks in 2005, in a country known for the relative low use of credit cards as payment method. Fast delivery – a legacy of the country's reputation for world-class delivery and logistics - is also a key component of the Dutch e-commerce culture, which makes quick fulfilment of orders essential to e-commerce companies (J.P. Morgan 2019).

The configuration of postal market is much less dynamic than that of the e-commerce market: there are six largest parcel carriers in the country, which managed in 2020 a total of 778 million parcels, of which 586.3 million were delivered to a Dutch address (ACM 2020)[35]. In the domestic parcel delivery, the B2C represents the 74% of the total volumes and registered an increase of 37.8% compared to 2019, while the B2B segment had a lower increase, equal to 13.3% in the same period. The greatest increase was the one registered for C2X segment (38.6%), which however represents only 4% of domestic parcels. PostNL is

[34] https://ecommercenews.eu/amazon-doubles-reach-in-the-netherlands/

[35] Since the ACM Report is only available in Dutch, the information that follows have been extracted with the support of an automatic translation tool.

constantly the largest carrier of domestic parcels and its market shares were in 2020 55-60% based on both volume and revenue. After PostNL, DHL Parcel is the parcel carrier with the largest market share, as in previous years (30-35% in 2020 based on both volume and turnover). All the other companies follow the leaders at a considerable distance: DPD, GLS UPS and TNT (the smallest carrier) all have market shares between 0-5%. The parcel market in The Netherlands is therefore highly concentrated and none of the e-commerce companies have a significant presence in the delivery phase. ACM (2020) also investigated how important the five largest customers are for each of the parcel carriers: collectively, they account for 19% of the volume, and for 13% of the turnover of parcel carriers, data that are in line with those of previous years.

Despite the picture, it is possible to foreseen that the delivery market will evolve in the next years. The Netherlands is actually becoming a lab for experimenting with alternative solutions in last mile delivery[36]. One of the main reason is the high costs of this phase due to the wages for delivery personnel, which make up to 50% of the costs per parcel and are growing quickly, partially due to the scarcity of personnel on the labour market. Moreover, the regulation is destined to impact heavily on delivery costs: larger cities like Utrecht and Amsterdam have declared a complete ban of combustion engines for inner city delivery vans from 2025. This means that logistics service providers will need to change their fleets to expensive electric delivery vans and/or delivery bikes. Coolblue (see above), DHL and Bol.com have introduced electric delivery bikes for inner cities and also Albert Heijn is planning to increase the use of electric vehicles over the next few years. The leaders of the Dutch e-commerce are therefore increasing their investments into the last mile; also Amazon has announced[37] that will open its own delivery station in Schiphol area and will start working with small and medium-sized independent local delivery companies, in addition to its existing carrier partners DHL and PostNL.

3.4 The case of Poland

In 2020, the total sum of revenues from postal services in Poland increased by 14% in comparison to 2019. It has been the fourth consecutive year in which the value of the growth of the postal market has exceeded that of the Polish economy. This growth has been mostly driven by the increase in revenues from courier services, which in turn has been caused by the growing volumes of e-commerce transactions and shipments. In 2020(?), courier shipments accounted for nearly 34% of postal services in terms of volume, but as much as nearly 59% in terms of its value. Two categories of postal services that registered a decline are letters (-6.2% in terms of revenues, but -15.4% in terms of volumes) and postal (non-courier) parcels (-3.6% in terms of revenues, but +19.1% growth in terms of volumes).

[36] https://www.brand-experts.com/brand-distribution/last-mile-innovation/
[37] http://www.citylogistics.info/business/amazon-opening-a-regional-urban-parcel-hub-in-amsterdam-region/

The growth of e-commerce has also been driven by the steadily growing number of Poles who buy from e-suppliers. According to the report "E-commerce in Poland 2020: Gemius for e-Commerce Polska”, already 73% of Internet users shop online. While this result is better in comparison to the previous edition of the survey by as much as 11 percentage points, it is still considered low.[38]

As of December 31, 2020, Poland had 291 postal operators, including Polish Post (Poczta Polska), the sole provider of the universal service. However, as noted by UKE (the Polish postal and telecom regulatory authority, 2021), only 138 of the 290 alternative operators had been actually active on the market (as not all registered operators undertake postal activities). A gradual increase in the number of registered alternative postal operators was observed in the period 2012-2014. However, since then the number has remained stable, varying between 267 in 2012 and 290 in 2020.

Alternative operators provide services in three segments of the postal market: courier services, services falling within the scope of the universal services, and other postal services. The analysis of the services provided by the alternative operators carried out by UKE revealed that in 2020, 125 out of 138 active alternative operators provided services only in one segment: 80 – exclusively courier services, 37 – only inbound services within the scope of the universal service, and 8 – solely other postal services. 12 operators were active in two segments, and only one alternative operator was active in all three segments of the postal market mentioned above.

Altogether, in the courier services segment, there have been 89 postal operators, including Poczta Polska. In terms of the number of operating operators, it is the most numerous segment of the postal services market, and consequently the area in which the competition has developed the most[39]. Moreover, courier services contribute the most to the overall value of the Polish postal market. Despite higher prices, courier shipments are the preferred shipment option for e-commerce transactions (rather than traditional postal package services). The seven largest operators offering courier services accounted together for 96.6% of the market in terms volume and 93.9% in terms of revenues. These operators include three global integrated operators (DHL, UPS and FedEx/TNT); two companies owned by European posts: DPD (French Post) and GLS (British Post); domestic courier with foreign capital (InPost), and the national postal incumbent (Poczta Polska). In 2018, the French-owned DPD led in the courier market with 25% market share, followed by the German DHL with approximately 20% market share. The domestic operator, Poczta Polska and the American UPS both controlled 15% of the market, and were followed by InPost and GLS (Royal Mail). Since

[38] Data concerning the percentage of consumers who shop online vary considerably depending on the source. For example, according to a study by Postnord (2020), 83% of Poles shop online, whereas according to DESI, the European Commission’s Digital Economy and Society Index, this number is considerably lower – 66%.

[39] Although in recent years courier companies benefited from dynamically developing demand for their services, a declining unemployment (which in 2019 decreased to 3.3%, in comparison to EU-average 6.3%) and the correlated pressure for wage increase resulted in a marked increase of costs of running courier activities in Poland. Arguably, despite large scale operations and very high operational efficiency, Polish operators find it difficult to achieve high profitability.

2018, the leadership in the market has changed as in 2020, InPost[40] moved to the top of the list, pushing DPD to the second position. GLS jumped to the third position, while UPS and Poczta Polska have become respectively the fourth and fifth players in the market (UKE, 2020)[41].

With respect to e-commerce, the largest marketplace in Poland is the domestic platform Allegro, established in 1999, which has around 40 percent of e-commerce market share. According to Ecommerce-news.eu, Allegro, which has also become popular in other countries, with its 194 million monthly visitors, is currently the tenth most visited marketplace in the world. In October 2020, Allegro was listed on the Warsaw stock exchange in October 2020, becoming the largest IPO in Poland's history. In its Prospectus for IPO offering, Allegro stated the following: *Merchants are able to take advantage of the smart logistic network that is simple to use and provides a range of delivery options, while benefiting from more competitive delivery costs through the [Allegro] Group's umbrella agreements with key logistics players, including, among others, InPost, DPD, UPS and the Polish state postal service (Poczta Polska). In June 2020, more than 70% of delivery volumes were processed through the Group's contracts and tools. This resulted in an improvement in [global buyer net promoter score] NPS to +51 for Allegro delivery, ahead of all other players in Poland, whereas SMART! deliveries scored an NPS of +84".* Moreover, "*the Group is focused on delivering [user] experience primarily through an "asset-light" model that is achieved through investments in technology and solutions supporting 3P merchants, rather than through investing in the "asset-heavy" inventory and infrastructure parts of the e-commerce value chain*".

Other relevant marketplaces in Poland, albeit with limited presence so far are: AliExpress (which belongs to Chinese Alibaba), Zalando and Amazon, which has launched its fully Polish version only on March 2, 2021.[42] Amazon has a limited presence not only in Poland, but in general in emerging Eastern European e-commerce markets which in comparison to their Western European counterparts (such as Germany, Italy or UK) are much smaller. However, considering a rapid growth these markets have recorded in recent years, and opportunity for further expansion they present, make them an attractive target for investment in the coming years.

[40] Inpost has also acquired in 2021 Mondial Relay, a major logistics company from France, expanding its international presence.

[41] With respect to the relatively weak position of Poczta Polska in the courier segment, it must be noted that Poland has been one of the last EU countries to fully liberalise the postal market (2013). While the expectation was that Poczta Polska would have had time to effectively prepare for market opening, it is believed that in fact late liberalisation has slowed down the restructuring of the incumbent. Moreover, the incumbent found itself in a situation where it had to adapt to a competitive market when the demand for traditional services falling within the scope of the universal service have been decreasing.

[42] Until recently, Amazon has served its customers in Poland from its German website.

5. Conclusion

While the preferred e-commerce channel for European enterprises is still proprietary websites and apps rather than marketplaces, the latter have experienced a remarkable growth over the last years, especially since the pandemic outbreak. The growth has regarded not only the well-known global or multinational players but also a number of local or European players. The delivery phase is becoming increasingly crucial for these companies: often customers value timely delivery even more important than the price of the products. E-commerce platforms have therefore entered the delivery markets, increasing the pressure on the traditional actors active in this market: postal operator and couriers. This dynamic has raised the attention of some regulatory authorities (in the US, Italy and Spain), which have started to monitor attentively their role in the national delivery markets. While some postal actors have tentatively approached downstream phases, and e-commerce sector in particular, as an opportunity for development, the main worries derive from the e-commerce platforms vertical integration upstream towards the delivery phase.

Italy and UK, the first two cases analysed in this paper, are both considered big retail markets, even if the dimension of the Italian e-commerce is not comparable with the one of the UK. In both countries, e-commerce finds Amazon as the major player. However, the configuration of the delivery markets is quite different. In Italy, with a market characterized by a huge number of registered operators, there is a prevalence of “access competition”: the market has a “hub and spoke” configuration with almost 40% of delivery operators being an individual company linked by contracts of *franchising* or *partnership* to one of the biggest operators. The delivery market has a relatively low level of concentration: all the operators have shares below 20%. Poste Italiane, which includes the controlled SDA, is the second operator, following BRT. However, in recent years the shares of Amazon Italia Transport have grown significantly, and the company is the first operator in some of the sub-segments of the market. Also in the UK Amazon is an increasingly important player in B2C markets and continues to expand its parcel delivery capability. In the country, access competition remains small, both in terms of volume and revenues, and “end-to-end” competition prevails, since most parcel operators rely on their own networks. The sector is interested by several mergers and acquisition operations among parcels operators, the leading position of the former incumbent Royal Mail is not yet contested by any other operator but Amazon’s position is rapidly growing in this market.

The other two cases, The Netherlands and Poland, show a similar configuration of the e-commerce markets but different configurations of the delivery markets. In both countries, the online retail sector is dominated by domestic companies: Bol.com and Coolblue are the clear leaders of the Dutch e-commerce market while Allegro, with its 40% of the Polish market, in October 2020 was listed on the Warsaw stock exchange, becoming the largest IPO in Poland’s history. In both countries, the entrance of global online marketplaces, such as Amazon, is quite recent. None of the “national” online marketplaces is a relevant actor in the delivery market: while in the Netherlands Bol.com and Coolblue are investing in last mile solutions, Allegro in Poland has opted for an industrial strategy “asset-light”, where delivery is based on a set of agreements with key logistics players. However, despite the common absence of marketplaces in the delivery phase, the two national delivery markets appear very different: in The Netherlands, the delivery market is very concentrated, with the PostNL and DHL Parcel owing almost 90% of the market and the former incumbent having shares between 55-60% (both in terms of volume and revenues). In Poland, conversely, the delivery market (courier services) is extremely dynamic and competitive: the Polish company InPost has recently acquired the leadership of the parcel market, while the national postal incumbent, Poczta Polska, has fallen in the fifth position in the market.

Our preliminary analysis makes evident the great dynamism that delivery markets are undergoing as a consequence of the e-commerce's boom. There is no clear correspondence between the configurations of e-commerce markets and those of delivery markets: context-specific factors seems to push online marketplaces to tailor the industrial strategies in order to be able to grasp the different opportunities available in each country. However, some general considerations can be extracted from the evidences collected so far. Global marketplaces, Amazon in the first place, are embracing more and more a strategy of vertical integration establishing themselves as logistic operators, even in countries where their position in the e-commerce market is still limited, as in The Netherlands. On the other side, the local online marketplaces we have analyzed, which are the most relevant in Europe, seems relatively less interested in the delivery phase, despite the investments made by the Dutch champions in the last mile. The choice whether the marketplaces opts for asset-heavy or light model is determined by a variety of factors: in The Netherlands and in Poland, a relevant one is probably the cost of labour due to fact that both have among the lowest unemployment rates in Europe, and, as known, delivery is a labour-intensive business. As for the national postal operators, the situation appears diversified: in The Netherlands the leadership of PostNL on the delivery market is uncontested, in UK Royal Mail's position is still strong but is losing ground, in Italy Poste Italiane works in a relatively competitive market, while the Polish operator is not even among the top four providers of these delivery services. National regulations on the universal service providers have probably a role in explaining the different positions occupied by the incumbents in the parcel market; in this respect the process of revision of the Postal Directive could lead to a proposal of changes to the regulatory framework, which in turn might have consequences for the configuration of delivery markets. Finally, the couriers traditionally active in the express and international delivery seem to find themselves in a difficult position, as shown by the decline in the market capitalizations of many of the largest companies in this sector: while facing the competition from new entrants in the market they are still recovering from the disruptive effect of the pandemic on the logistic chain.

The continuing evolution of e-commerce, with the increasing competition between global or local platforms and original postal operators, each moving from their native strongholds, will characterize the future of parcel delivery markets and will certainly constitute an interesting topic for analysis and research in the next years.

References

ACM (2021), Postal and Parcel Markets Scan 2020 (In Dutch), available at https://www.acm.nl/nl/publicaties/post-en-pakkettenmonitor-2020

AGCOM (2019), Allegato B alla Delibera N. 350/19/CONS Analisi del mercato dei servizi di consegna dei pacchi

AGCOM (2020), Analisi del Mercato dei Servizi di Consegna dei Pacchi (Interim Report), Delibera 212/20/CONS.

AGCOM (2021a), Communications Markets Monitoring System, no. 2/2021.

AGCOM (2021b), Relazione Annuale 2021 sull'attività svolta e sui programmi di lavoro.

Allegro (2020), Prospectus for the Initial Public Offering of Allegro.eu, available at: https://about.allegro.eu/static-files/a9b4faf1-cc92-4876-8b60-efd732854c0b

Alimonti, R., Mautino, L., & Stammati, L. (2020). E-Commerce Growth: Competition and Regulatory Implications for the Postal Sector. In *The Changing Postal Environment* (pp. 167-181). Springer, Cham.

Amazon (2020). Amazon Annual Report 2020.

Beckers, J., & Verhetsel, A. (2021). The sustainability of the urban layer of e-commerce deliveries: the Belgian collection and delivery point networks. *European Planning Studies*, 1-20.

Borsenberger, C. (2015). The concentration phenomenon in e-commerce. In: Crew, M.A. and Brennan, T.J. (Eds.), *Postal and Delivery Innovation in the Digital Economy*, Springer International Publishing Switzerland.

Borsenberger, C. (2016). The European parcel delivery market: a contestable market. *23rd Conference on Postal and Delivery Economics*.

Borsenberger, C., Cremer, H., Joram, D., & Lozachmeur, J. M. (2018). Vertical integration in the e-commerce sector. In: *New business and regulatory strategies in the postal sector* (pp. 143-160). Springer, Cham.

Casaleggio Associati (2021), E-commerce in Italy, XV report edition, May 2021, available at https://www.casaleggio.it/wp-content/uploads/2020/12/CA-E-commerce-2021-report-ENG__WEB-1.pdf

Castillo, V. E., Bell, J. E., Rose, W. J., & Rodrigues, A. M. (2018). Crowdsourcing last mile delivery: strategic implications and future research directions. *Journal of Business Logistics*, 39(1), 7-25.

CNMC (2020). STP/DTSP/006/20: Amazon Spain Fulfillment S.L.

Copenaghen Economics, (2021). Retail&Logistics Vertical Integration: Implications On Market Definition.

Czaplewski, R., (2015). Liberalizacja polskiego rynku usług pocztowych – zastosowane rozwiązanie i jego następstwa. Ekonomiczne Problemy Usług, 117, 41–50.

Eccles, R., & Kuipers, P. (2006). Postal Services Regulation In Europe. In *Progress toward liberalization of the postal and delivery sector* (pp. 321-339). Springer, Boston, MA.

ECommerce Europe (2019) European Ecommerce report. https://ecommerce-europe.eu/

Ecommerce Europe (2021). Main priorities for the European Digital Commerce sector 2021, Priority Paper, 14 January 2021, available at https://ecommerce-europe.eu/wp-content/uploads/2021/01/ECOM-Priority-Paper-2021-FINAL.pdf

Ecommerce Foundation (2020). www.EcommerceFoundation.org

ERGP (2020). Report on core indicators for monitoring the European postal market.

European Commission (2020). Digital Economy and Society Index 2020.

Finger, M., Bukovc, B. & Burhan, M. (Eds.). (2014). *Postal services in the digital age* (Vol. 6). IOS Press.

Gelici, A.A. (2020) Successful brands in E-commerce from a costumer point of view, available at http://essay.utwente.nl/80754/

Gemius (2020), E-commerce in Poland 2020: Gemius for e-Commerce Polska

Gevaers, R., Van de Voorde E., & Vanelslander, T. (2011). Characteristics and Typology of Last-Mile Logistics from an Innovation Perspective in an Urban Context. In: C. Macharis & S. Melo (Eds.) *City Distribution and Urban Freight Transport: Multiple Perspectives*, 56-71. Cheltenham, UK: Edward Elgar Publishing.

Gori, P., & Parcu, P. L. (2018). Postal Operators as "Ground Based" Online Platforms?. In *New business and regulatory strategies in the postal sector* (pp. 1-14). Springer, Cham.

Hahn, Y., Kim, D., & Youn, M. K. (2018). A Brief Analysis of Amazon and Distribution Strategy. *The Journal of Distribution Science*, 16(4), 17-20.

Heller, M. (2019). eBay Matches Amazon With Logistics Option. https://www.cfo.com/

IBISWorld (2015). Global Courier & Delivery Services: Market Research Report.

IBISWorld (2015). Global Courier & Delivery Services: Market Research Report.

Jaag, C. (2014). Postal-sector policy: From monopoly to regulated competition and beyond. *Utilities Policy*, *31*, 266-277.

Jaag, C. (2015). Postal sector development between digitization and regulation. *The Routledge Companion to Network Industries* (New York: Routledge, 2015), 25-36.

J.P. Morgan (2019). 2019 Global Payments Trends Report. Netherlands Country Insights, available at https://www.jpmorgan.com/europe/merchant-services/insights/reports/netherlands

Kovač, I., Naletina, D., & Kuvač, A. (2017). The significance and importance of delivery in electronic commerce.

Lehdonvirta, V., Park, S., Krell, T., & Friederici, N. (2020). *Platformization in Europe*.

Mazarenau, E. (2019). Global Size of the Courier, Express and Parcel (CEP) Market 2009–2019. *Statista.com*.

MH&L (2016). Delivery Time Top Priority for Online Shoppers.

Morganti, E., Seidel, S., Blanquart, C., Dablanc, L., & Lenz, B. (2014). The impact of e-commerce on final deliveries: alternative parcel delivery services in France and Germany. *Transportation Research Procedia*, 4, 178-190.

Nałódka, Z. (2020). The changes in e-commerce showcased on the Allegro. pl Company.

Ofcom (2020). *Annual Monitoring Update on Postal Services*.

Panzar, J. C. (2017). "Last Mile" Parcel Competition with Real Time Routing by Shippers. In: U.S. Postal Service, Office of Inspector General, Play to Win: Competition in Last-Mile Parcel Delivery, RARC Report No. RARC-WP-7- 009.

Parcu, P. L., Brennan, T. J., & Glass, V. (Eds.). (2018). *New Business and Regulatory Strategies in the Postal Sector*. Springer International Publishing.

Parcu, P.L., Carrozza, C., Innocenti, N., Pisarkiewicz A. & Gori, P. (Forthcoming). Competition in the Postal and Delivery Markets in Europe. In: Parcu, P.L. Brennan, T.J. Victor, G. (Eds.), *The Economics of the Postal and Delivery Sector*. Springer International Publishing.

PostNord (2020). E-commerce in Europe 2020. https://www.postnord.se/siteassets/pdf/rapporter/e-commerce-in-europe-2020.pdf

Royal Mail (2020). *Annual report and financial statements 2019-20*. Royal Mail.

Sidak, J. G. (2017). Why Should the Postal Service Deter Amazon's Competitive Entry into Last-Mile Parcel Delivery. *Criterion J. on Innovation*, 2, 101.

Statista (2020). eCommerce Report 2020. Statista Digital Market Outlook – Market Report, November 2020.

Statista (2020b). E-commerce in the United Kingdom. *Statista dossier*.

Statista (2021). eCommerce - United Kingdom. from https://www.statista.com/outlook/dmo/ecommerce/united-kingdom?currency=gbp

UKE (2021), Raport o stanie rynku pocztowego w 2020 roku (Report about the state of postal market in 2020).

Valarezo, Á., Pérez-Amaral, T., Garín-Muñoz, T., García, I. H., & López, R. (2018). Drivers and barriers to cross-border e-commerce: Evidence from Spanish individual behavior. *Telecommunications Policy*, 42(6), 464-473.

Vantomme, J. (2014). Re-regulation for parcel delivery in the e-commerce context?. In *The Role of the Postal and Delivery Sector in a Digital Age*. Edward Elgar Publishing.

World Trade Organisation (2020). Trade shows signs of rebound from COVID-19, recovery still uncertain, Press Release/862, 6 October 2020, available at: https://www.wto.org/english/news_e/pres20_e/pr862_e.htm

Yurieff, K. (2018). Everything Amazon has added to Prime over the years. CNN business, https://money.cnn.com/2018/04/28/technology/amazon-prime-timeline/index.html