

## INDUSTRY BRIEF – eCOMMERCE

eCommerce refers to buying and selling goods and services online. B2B refers to business to business transactions; B2C refers to business to consumer transactions, and C2C refers to consumer to consumer transactions. Global eCommerce revenue is projected to reach \$4.11 trillion in 2023.<sup>1</sup>

### 1. INTRODUCTION

eCommerce is transforming global business landscape by leveraging the internet, payment systems, fast data exchange, improvements in supply chains and distribution, and improved inventory management.

Alibaba (founded in 1999) and Amazon (founded in 1995) are visible leaders, but eCommerce companies operate in virtually every product space and geography, in part because of specialized support firms.

A huge advantage for eCommerce is that consumers can search a vastly increased set of options at low cost. As a result, legacy “brick and mortar” retail is under increasing pressure. Many legacy firms like Walmart (originally US) and Aldi (originally German) combine online and retail sales.<sup>2</sup> Starbucks over time provided customers with the option to order online; new rivals like the once-troubled Luckin Coffee compete with small retail outlets and less human interaction.<sup>3</sup>

eCommerce firms are among the most important examples of *multi-sided markets*:<sup>4</sup>

- eCommerce leaders such as Huawei and SAP in the B2B sector like operate at huge scale due to (i) the realization of economies of scale (large volumes of transactions), and (ii) economies of scope geographically.
- eCommerce leaders such as Amazon, Alibaba Group and JD.com have reached massive scale in their home markets by (i) the realizing of economies of scale, (ii) economies of scope in terms of their product lines and wide geographic scope), and (iii) network economies (millions of buyers and sellers who access their platforms). The much smaller Otto is on a growth trajectory in Germany and the EU.

Some believe that the combination of economies of scale, economies of scope, and network effects necessarily lead to winner-take-all outcomes and market power for “dominant” platforms. Leading platforms do benefit from greater network effects. Competition may also be limited due to the fixed costs of establishing an online presence. (Nobel-Prize winner Jean Tirole has explored this issue.<sup>5</sup>) However, as the eCommerce industry has grown, specialized firms have developed to offer support to small firms that want to interact directly with customers. For example, Shopify, top provider of eCommerce solutions for businesses, provides eCommerce support to over 1 million business.<sup>6</sup> With

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<sup>1</sup> “eCommerce - Worldwide.” Accessed April 17, 2023. <https://www.statista.com/outlook/dmo/ecommerce/worldwide>.

<sup>2</sup> See [www.aldi.us/en/shop-now/grocery-pickup/](https://www.aldi.us/en/shop-now/grocery-pickup/).

<sup>3</sup> Luckin’ Coffee 2022 profits reached RMB 1.1bn (\$167m), even though many of its stores were temporarily closed during the COVID pandemic: <https://www.worldcoffeeportal.com/Latest/News/2023/March/Profitable-Luckin-Coffee-achieves-surgings-2022-sal/>; <https://www.worldcoffeeportal.com/Latest/News/2023/March/China-s-Luckin-Coffee-signs-partnership-with-IHG-H/>.

<sup>4</sup> See Brief on *Multi-Side Platform Companies*.

<sup>5</sup> Tirole, J. (2022), ‘Competition and the industrial challenge for the digital age?’, IFS Deaton Review of Inequalities, <https://ifs.org.uk/inequality/competition-and-the-industrial-challenge-for-the-digital-age>.

<sup>6</sup> See <https://www.wsj.com/articles/shopify-bulks-up-online-fulfillment-logistics-services-11675891353> (February 2023).

such service providers, smaller sellers have alternatives to selling through major platforms like Amazon. For example, Puros Y Tabacos Presidencial in Mexico City is thriving despite its tiny share of online cigar sales.<sup>7</sup> We also observe specialized eCommerce companies like Zalando (shoes) in Europe.

Specialization by firms like Shopify reflects this fundamental economic principle:

Specialization is limited by the size of the market and as markets grow, more specialized firms participate.

Lots of important questions arise concerning eCommerce. One, can successful eCommerce firms be displaced? Of course, being displaced may not be an all-or-none question. Broad-scope eCommerce firms like Amazon may be unlikely to be displaced, but they have rivals that are more focused, e.g., the grocery-delivery firm Instacart and fast-fashion phenom, Schein.<sup>8</sup> Similarly, Alibaba and JD.com face competition from on-line travel companies. These rivals may be able to attract substantial business in more narrow product lines.

In Section 2 of the brief, we explain how eCommerce works, including how eCommerce firms make profits. In Section 3, we explore the nature of the rivalry among eCommerce firms. In Section 4 we comment briefly on the important issue of vertical integration. In Section 5 we look at Pinduoduo, that successfully entered with a different business model that allows customers to aggregate their buying power. The Appendix provides some information on major eCommerce firms and explores other topics.

## 2. BASICS OF HOW THE INDUSTRY WORKS

eCommerce businesses are platforms with multiple sides. Businesses such as Amazon, Alibaba, Etsy, and eBay attract buyers and sellers to both post items and shop for items on an online platform, with added payment functionality and built-in logistics and fulfillment capabilities. Types of eCommerce business include (i) a single seller, or (ii) a single platform, e.g., Farfetch, representing many sellers and buyers. eCommerce firms make it easy for consumers to make search for products and make purchases. By gathering information on returning customers, sophisticated sellers also can organize and present tailored information. Complementary physical locations and distribution infrastructure are part of some firms' strategies.

The models and financials differ.<sup>9</sup> Platforms charge third-party sellers a percentage of the product price, e.g., five percent. Categories may have various "take rates" depending on inventory risk, obsolescence, seasonality, and other factors. For platforms, these aggregate take rates become part of their recurring revenues. Subscription plans for goods and services can also generate recurring revenues.

eCommerce firms also earn revenues through advertising on their sites. When customers reveal an intent to purchase, targeted ad units command a higher premium than when consumers are passive. Network effects amplify profitability from advertising because many more individuals are likely to see the ad units, leading to higher sales for the retailers who post the ads and others posting items on the marketplace.

Another other way that eCommerce firms can make profits is by collecting personal information.

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<sup>7</sup> See [www.purosvalledemexico.com/](http://www.purosvalledemexico.com/).

<sup>8</sup> Instacart has been growing rapidly and has reportedly been looking to go public: <https://www.ft.com/content/e725ead7-3365-4067-ac48-73e019dc4cd5>.

<sup>9</sup> Some eCommerce companies engage in a variety of other businesses outside of their core eCommerce marketplace, including video streaming, supplying media content, web development, storage services, internet finance, and others. Leaders such as Alibaba and Amazon offer a large variety of services.

See brief on *Competition to Collect and Monetize Personal Information*. In some cases, eCommerce firms can charge different consumers different prices, i.e., price discriminate. The typical brick-and-mortar retailer cannot do so.

Finally, eCommerce firms may be able to make profits by developing their own product lines that compete against third-party suppliers. This is analogous to drug stores offering their store-branded ibuprofen alongside branded Advil.

### 3. RIVALRY

As stated, eCommerce firms can increase their scale, their scope, and realize network effects. The costs of adding additional lines of business are lower than for a new entrant. The additional services also reinforce the value of the network by driving increased traffic and user growth. Over time, users may migrate towards other parts of the platform over time, continuing to amplify the network effects.

A good example is the Chinese eCommerce platform, Meituan. It started as a food delivery app but now offers ride-hailing, bike-sharing, payment services, flight booking, and more, all through one app<sup>10</sup>. It reports that over 80 percent of its users utilize more than one service, which increases user stickiness.

Important metrics for eCommerce firms are the number of *monthly active users* (MAU) and *daily active users* (DAU). Amazon had 159.8 million users in the US that pay an annual prime membership of \$100 or more in 2022<sup>11</sup>, and have hundreds of millions of users globally that purchase through their marketplace on a regular basis. Alibaba has over 750 million active users. Amazon is estimated to offer over 400 million SKUs on its platform and Alibaba over 500 million. Even the smaller Etsy has an estimated 50 million items for sale on its marketplace.

Whether major platforms can exercise market power, i.e., raise their take rates, depends on (a) whether it is easy for consumers to switch, (b) the strength of network effects, and (c) entry conditions. The required analyses should take into account the reputational advantages related to the frequency and history of transactions. Regarding the number of eCommerce firms that can survive, economists at this point do not have compelling answers.<sup>12</sup>

During Fall Semester of 2021, the class developed this useful way to think about major eCommerce platforms and whether they can exercise market power:

Large eCommerce platforms are like brick-and-mortar department stores in a mall. They benefit from customer traffic and the ability to add “departments”. Malls, however, also rent space to many smaller retailers with niche presences. Competition between the department stores and the niche retailers can be intense. If it is indeed easy for consumers to leave the “department store” and find their preferred products from niche retailers, then the department store’s market power is constrained.

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<sup>10</sup> [https://www.hkex.com.hk/Market-Data/Securities-Prices/Equities/Equities-Quote?sym=3690&sc\\_lang=en](https://www.hkex.com.hk/Market-Data/Securities-Prices/Equities/Equities-Quote?sym=3690&sc_lang=en).

<sup>11</sup> That number is only expected to grow in the future years: <https://www.statista.com/statistics/504687/number-of-amazon-prime-subscription-households-usa/>.

<sup>12</sup> Some twenty firms operate in the business of offering on-line tee times at golf courses around the world. One well-known competitor, GolfNow, is losing share rapidly. A similar phenomenon applies to buying tickets to Premier League games or concert tickets: consumers apparently have many options.

A related question is how global firms will become. Several factors suggest that the successful firms will become yet more global: Global logistics continue to improve. Internet connectivity, data fungibility, and mobile enabled services make boundaries less relevant. On the other hand, national and regional preferences remain important. Truly global is difficult to achieve without being local in every geography. In addition, while technology can span boundaries, governments remain in control of the transactional infrastructure through, for example, import and export control, tax codes, regulation of payment systems, and licensing.

#### 4. VERTICAL INTEGRATION

In principle, eCommerce firms such as Amazon and JD.com could limit their business to organizing a neutral platform for buyers and sellers. The information generated and presented could be supplied in a way that maximizes efficiencies for shoppers. In addition, the eCommerce platforms would not “backward” integrate into supplying products and services, some of which may compete directly with third-party sellers, i.e., merchants who sell goods on the platform.

The actual world does not conform to this theoretical world. Instead, major platforms have broadened the scope of their activities, e.g., offering games and payment systems, and have vertically integrated forward into distribution and backward into the supply of products and services. The development of “super apps” raise important policy issues. In 2020, the European Commission charged Amazon for illegal conduct concerning its treatment of information about third-parties to favor particular suppliers.<sup>13</sup> In late 2022 a settlement was reached but authorities in other jurisdictions have launched similar investigations

For further discussion, see the Brief on *Vertical Integration by Multi-Side Platform Companies*.

#### 5. INNOVATION – ALLOW BUYERS TO ORGANIZE THEMSELVES

The Chinese platform Pinduoduo was founded in 2015 and became a public company via its IPO on the NASDAQ in 2018. Pinduoduo leveraged Tencent’s massive WeChat social media ecosystem (over 1 billion users) and injected a brilliant element of virality into their buying process. Using an AI-driven group purchasing model, Pinduoduo’s algorithms link buyers not to sellers, but to other buyers, and the seller (retailer on the marketplace) will drop their price accordingly in response to how many buyers are interested in the same product. (Their model is conceptually similar to Groupon’s, a US firm that has faded in importance.)

The more buyers band together on Pinduoduo, the greater the discounts they extract. Additionally, the buying frenzy enables the platform to sell profitable ads quickly as the number of users focused on certain SKUs grows. Taken together, this has allowed Pinduoduo to attract millions of eager sellers and buyers and to scale to immense proportions with remarkable virality. At the time of its IPO, the company had nearly 350 million active customers and experienced revenue growth rate of roughly 400 percent year over year, making it one of the fastest growing internet business in history.

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<sup>13</sup> [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_22\\_7777](https://ec.europa.eu/commission/presscorner/detail/en/ip_22_7777), <https://www.reuters.com/technology/amazon-reaches-settlement-with-eu-over-use-data-avoids-fine-2022-12-20/>.

## APPENDIX

### 1. Profiles of Large eCommerce Firms

#### Large eCommerce firms

Company	Areas of operation (primary markets)	Founded	2018 Revenue (Approximate)	Valuation
<b>Americas</b>				
Amazon.com	Global	1994	\$232.8 Billion	\$860 Billion
eBay	Global	1995	\$10.7 Billion	\$28 Billion
Etsy	US	2005	\$603.7 Million	\$4.9 Billion
B2W	LATAM	2006	\$1.6 Billion	\$29 Billion
Mercadolibre	LATAM	1999	\$1.4 Billion	\$28 Billion
CnovaNV	Brazil/Europe	2014	~\$1.9 Billion	\$863 Million
Farfetch	US/UK/Europe	2007	\$602.4 Million	\$2.8 Billion
<b>Asia</b>				
Alibaba	China/SE Asia	1999	\$39.3 Billion	\$563 Billion
JD.com	China/SE Asia	1998	\$67.2 Billion	\$50.5 Billion
Pinduoduo	China/SE Asia	2015	\$1.9 Billion	\$43.8 Billion
VipShop	China/SE Asia	2008	\$12.3 Billion	\$9.5 Billion
Meituan	China/SE Asia	2010	~\$8 Billion	\$75 Billion
Lazada (Owned by BABA)	Indonesia	2012	N/A- maybe ~\$2 Billion	~\$4+ Billion
Shopee	Indonesia	2015	Over \$500 Million	N/A
Tokopedia	Indonesia	2009	N/A	~\$7 Billion
<b>Europe</b>				
ASOS Plc	UK/Europe	2000	\$3.2 Billion	~\$3 Billion
Zalando	UK	2008	\$6.0 Billion	~\$11 Billion
Ocado	UK	2000	\$2.1 Billion	~\$8 Billion
YOOX	Global	2015	~\$2.75 Billion	Unknown

### 2. Changes in D2C

Mogu, a company in China, has brilliantly exclusively contracted several tens of thousands of Instagram like influencers known as KOLs, or key opinion leaders, to pose, perform with, and display clothing and accessories in a staged location on a live stream with prototype fashions that haven't been launched in any store before. Should there be critical mass of demand, often from potential customers watching on their smartphones, the clothes are made immediately with nearly exact amounts in terms of sizing and numbers, often locally, leaving little inventory risk overhang, and shipped directly to the end customer, disintermediating several steps of the supply chain. A business model such as this disintermediates the end brick and mortar retailer, advertising agencies for marketing campaigns, and other parts of the ecosystem.

Trends such as D2C and business models such as Mogu and others reflect disruptive innovation and dramatic changes in consumption behavior among users. Increasingly consumers value immediacy, some degree of exclusivity, and brand value is often linked with some connection to social media.

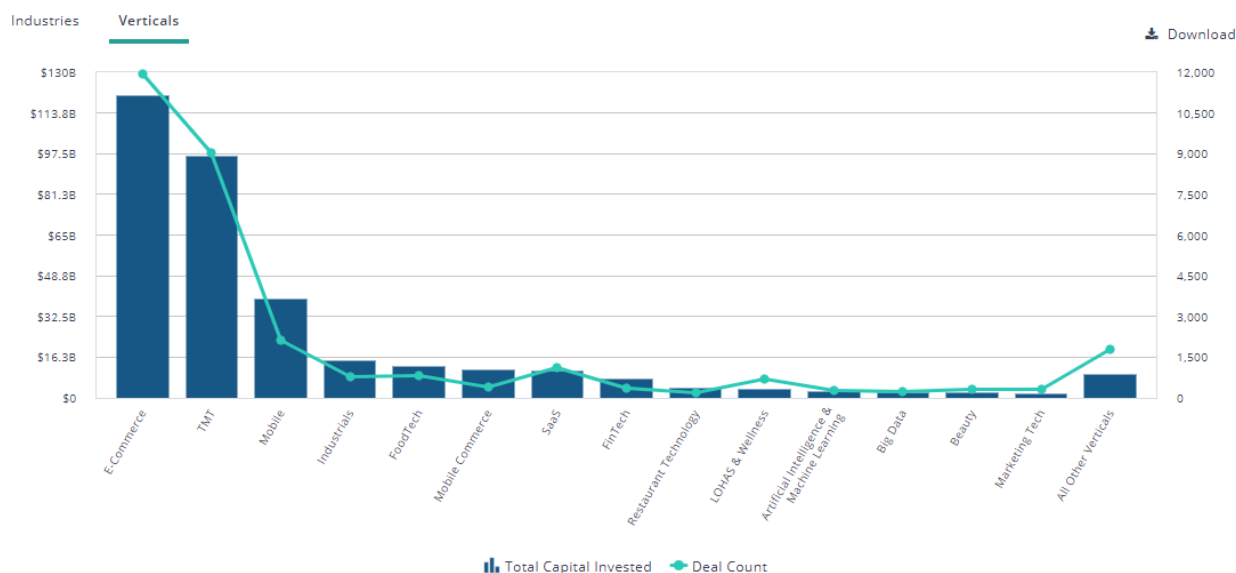
### 3. Investment in eCommerce Companies

The scale of investment in eCommerce companies is impressive. According to Pitchbook, a

leading online data service, more than \$120 billion has been invested in eCommerce type businesses in the last three decades from venture backed and private equity backed investors, with nearly 12,000 separate deals. In 2018 alone, nearly 1,300 venture capital deals were struck in eCommerce, up from ~1,150 the previous year. Notably, despite many companies in the eCommerce space having already become publicly traded, thousands of venture-backed investments in emerging categories such as fintech and enabling technologies that are linked to the greater eCommerce ecosystem. Even though many of these venture-backed companies will fail or be acquired, another massive wave of innovation in the sector that will emerge into and shape market over the coming years and decades.

This chart shows the importance of eCommerce relative to other industries.

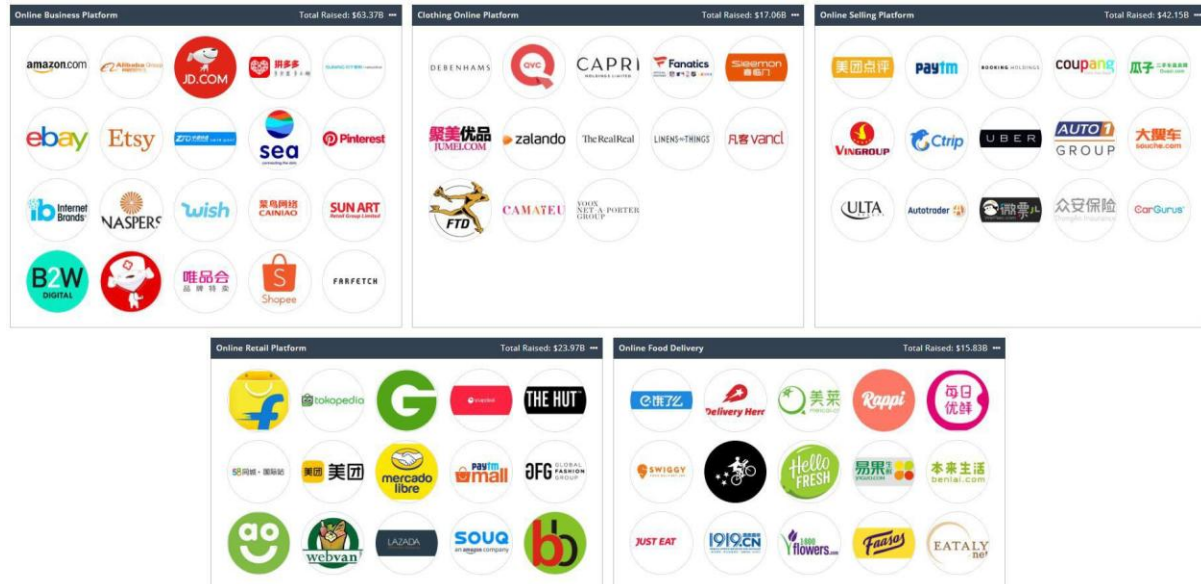
Capital Breakdown



#### 4. The Role of VCs

The charts below provide information on the role of VCs in eCommerce.





## Venture backed eCommerce investment deal count: 2010-2019

### Investments Over Time

☒ Deal Count ☐ Capital Raised

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