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# Startup funding in logistics

New money for an old industry?





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## Logistics and freight transportation – a tale of inefficiencies and gradual improvements

The transport and logistics sector has seen marked improvements in recent decades, despite its history of coping with inefficiencies.

Fundamental efficiency increases have typically been linked to new technologies and applications entering

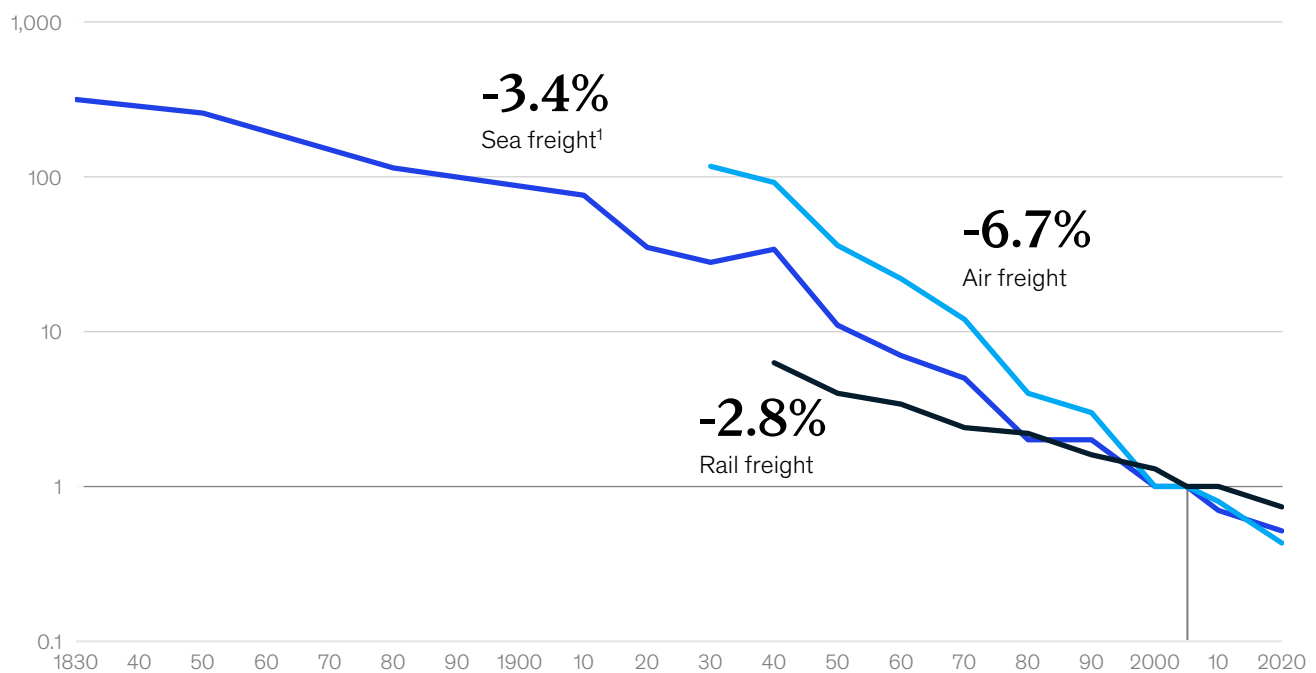
the market, such as the introduction of containers and pallets. Along with the facilitated handling of goods, came an explosion in trade volumes, and the resulting economies of scale brought costs down. As transport and logistics became more efficient, prices decreased (Exhibit 1).

Exhibit 1

### The industry is undeniably under constant pressure to lower costs

**Development of transport costs at real rates**  
1830–2020, indexed, cost in 2005 indexed to 1

**X%** Compound annual growth rate (CAGR)



1. Figures before 1930 are calculated indirectly, based on the share of transport costs of wheat.  
Source: McKinsey analysis (US Air Transport Association (2010); Baldwin (1999); World Economic Outlook (May 1997))

# 50%

of the US' largest importers still use spreadsheets to manage their complex international supply chain

Despite all this progress, inefficiencies are still far from being eradicated. In fact, they are prevalent everywhere you look in the industry. A high number of breakpoints (e.g., a normal cross-country trade has to go through more than ten parties, each of which has multiple touch points; dwell time in container yards can exceed five days), complex pricing rules, intuition-based decision making, and little data standardization present significant challenges in the industry. Shippers and consignees need to interact with up to 25 different entities (customs, terminals, shipping lines, forwarders, authorities, etc.). A typical door-to-door spot freight quote contains more than 20 line items. 50 percent of the US' largest importers still use spreadsheets to manage their complex international supply chain. These are only a few examples of the many inefficiencies that the industry continues to face. The complexity of the industry's landscape and its operations has prevented the development of quick-fix solutions to these inefficiencies.

Furthermore, a high degree of market fragmentation, partly into micro-businesses (e.g., mom-and-pop truckers, delivery drivers, independent freight brokers) means fierce competition. Combined with a lack of transparency, this keeps prices down and has even forced the industry to operate below a break-even point in certain years and not earn its cost of capital during some cycles. This is illustrated in more detail in the recently published report "Pathway to value creation in transport and logistics."<sup>1</sup>

In fact, logistics costs as a share of GDP have decreased by 1 to 7 percentage points over recent decades. Developed countries, such as Germany, Switzerland, or the US, could reduce logistics costs as a share of GDP by about 1 percentage point, while some emerging markets, such as Malaysia, Taiwan, or the UAE have reached a

reduction as high as 7 percentage points from their previously higher base.

Low profitability has made it difficult for the industry to experiment with fundamentally new solutions – it's hard to reinvent yourself when you're struggling to maintain profits quarter after quarter. The comparatively low and continuously decreasing prices (in real terms) have also kept the industry's customers relatively quiet – increasing customer expectations and direct pressure from the consumer that have led to changes in many other industries (travel, retail, mobility, and others) have been largely absent until recently in a traditional, B2B-shaped industry. Today's incumbent logistics companies have only gradually adapted to new technologies. Requirements for flawless execution, operational efficiencies amid complexity, and low margins have prevented them from testing radical solutions on existing issues and shielded them from the first wave of disruptive startup activity seen in other sectors with the advent of the internet. Vessels have become bigger and equipped with more and more technology, but the basic operating model has stayed the same. The concept of asset-light third-party logistics providers as supply chain orchestrators was born in the 1970s, and to this day, Kühne + Nagel, DHL, and traditional family enterprises like Fiege are still the key players in freight forwarding and contract logistics.

As incumbent logistics companies are often too rigid to bring about drastic changes, a new generation of logistics startups, backed by investors with deep pockets, aims to solve some of the industry's oldest issues and address entirely new and rapidly growing market needs. In this article, recent funding trends in the logistics industry are analyzed, and a perspective is derived on the implications for incumbent logistics companies, logistics startups, and investors.

## The analysis focuses on startups that provide logistics services

Logistics is defined as the outsourced movement or storage of goods and includes warehousing and storage, parcel delivery, trucking, freight shipping, rail cargo, and air cargo. The sample includes companies active in the delivery of groceries but excludes startups in the area of delivering prepared food (e.g., Delivery Hero), as these logistics services are traditionally insourced.

<sup>1</sup> <https://www.mckinsey.com/~media/mckinsey/industries/travel%20transport%20and%20logistics/our%20insights/creating%20value%20in%20transportation%20and%20logistics/pathway%20to%20value%20creation.ashx>

# >90%

of total startup funding in logistics to date has been analyzed (USD 26 billion, 120 startups)

More than 120 of the biggest logistics startups were analyzed; they are seven years old on average and represent an estimated 93 percent (approximately USD 26 billion) of total startup funding in logistics to date. Most of this funding comes from early- and late-stage venture capital, but a few mature startups have raised money from private equity or through corporate rounds. Interestingly, only one company in the sample has gone public as of the time of this publication. Hangzhou-based unicorn BEST Inc. (NYSE:BEST) provides a wide range of logistics services and had its IPO in September 2017, raising USD 450 million. The company is backed by online retail giant Alibaba and predominantly offers traditional logistics services, such as less-than-truckload services, express delivery, and cross-border door-to-door services (from and to China). The company also

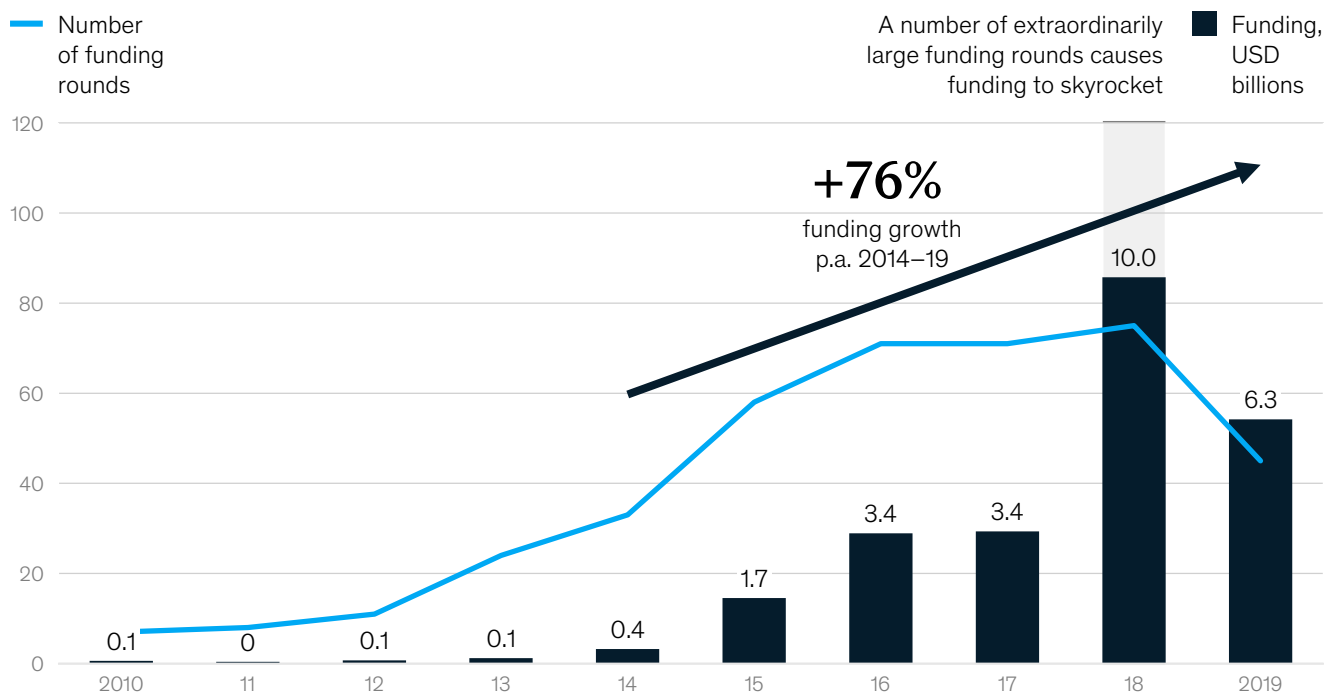
offers a bidding platform that allows users to source truck capacity and complements these services with its proprietary tech platform as well as retail and finance services.

The sample includes companies that are focused exclusively on logistics. Diversified startups with the majority of their business in non-logistics segments are not part of the sample (e.g., Uber or GoJek. Although Uber Freight and GoJek are engaged in logistics, their main product remains the passenger mobility platform; since Uber raised well over USD 24 billion and GoJek well over USD 3 billion, including these would significantly distort the picture due to the big proportion of non-logistics activities).

Exhibit 2

## Total funding in logistics startups has seen a dramatic increase over the last few years, growing at a 76% CAGR from 2014

### Total funding and number of funding rounds 2010–19



Source: CB Insights; Crunchbase; company websites

**The growth story is no longer fueled by more funding rounds; instead, it is fueled by startups reaching maturity and receiving larger funding rounds**

**Venture capital discovered the logistics industry in 2015**

Seeing an enormous market that is growing and is poised for disruption given the vast inefficiencies, the venture capital industry has increasingly cast an eye on startups in the logistics industry. Around USD 28 billion has been invested, almost all of which was raised in 2015 or later. Neeraj Bharadwaj, Managing Director of the Carlyle Asia buyout team, explains the interest as follows: “We see significant potential for technology-enabled logistics in the country with the growth of e-commerce as well as increasing customer focus on on-time delivery and service levels.” This comment was made after the announcement of Carlyle’s investment in Delhivery.<sup>2</sup>

Exhibit 2 shows that the number of reported deals involving the companies from our sample was stagnant from 2016 to 2018 and even dropped in 2019, while the average deal size and thus total funding grew threefold over the same period. Therefore, the growth story is no longer fueled by more funding rounds; instead, it is fueled by startups reaching maturity and receiving larger funding rounds.

2019 began with strong tailwind in Q1. Highlights include the USD 1 billion round from Flexport, a US-based digital freight forwarder. However, the rest of the year saw a significant slowdown compared to the boom in 2018. Nonetheless, funding is much higher compared to the years before 2018.

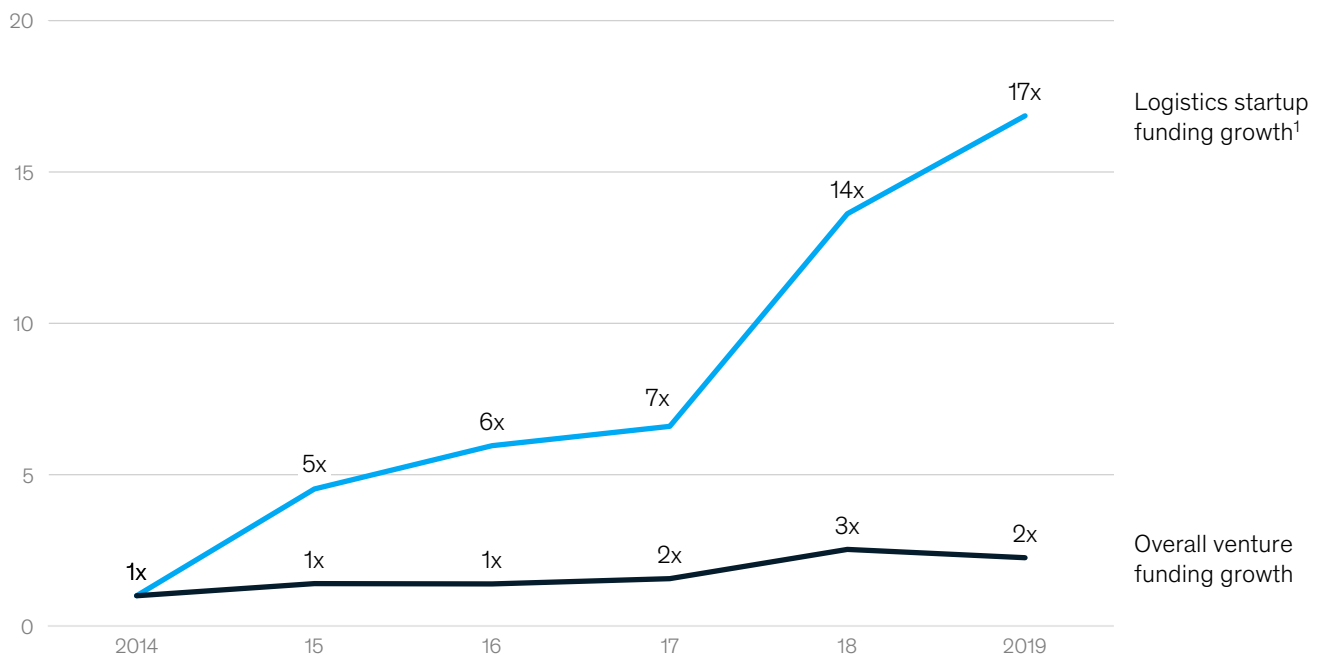
<sup>2</sup> <https://www.carlyle.com/media-room/news-release-archive/carlyle-group-acquires-significant-minority-stake-delhivery>.

Exhibit 3

**Funding volume growth in logistics startups has outpaced overall venture growth**

**Venture funding growth in logistics compared to overall venture growth**

Indexed growth, funding in 2014 indexed to 1x



1. Excludes PE, corporate, and all other rounds; only venture rounds considered. Source: McKinsey; Crunchbase; PitchBook

## Funding is highly concentrated, and several startups with enormous funding receive just as much funding as the remaining startups combined

This follows the pattern of the overall venture capital industry. Stories of failed IPOs and internal turmoil in startups have led investors to become more cautious with their money; so 2019, while much higher than the years before, didn't break venture capital's record year in 2018 (see Exhibit 3).

Even when excluding private equity and corporate rounds, logistics funding in 2019 grew 17-fold compared to 2014 and has therefore clearly outgrown overall venture funding across all industries, which has "only" doubled since 2014 (see Exhibit 3). While only around USD 375 million was raised in 2014, USD 6.3 billion was invested in logistics startups in 2019.

Similar to other industries, funding is highly concentrated, and several startups with enormous funding receive just as much funding as the remaining startups combined. Consequently, the ten best-funded companies have received about 46 percent of total funding, and the top 20 have accounted for around 66 percent of total funding (see Exhibit 4).

### Most funding goes to startups working on last-mile and freight platforms – Instacart, Manbang, and Flexport

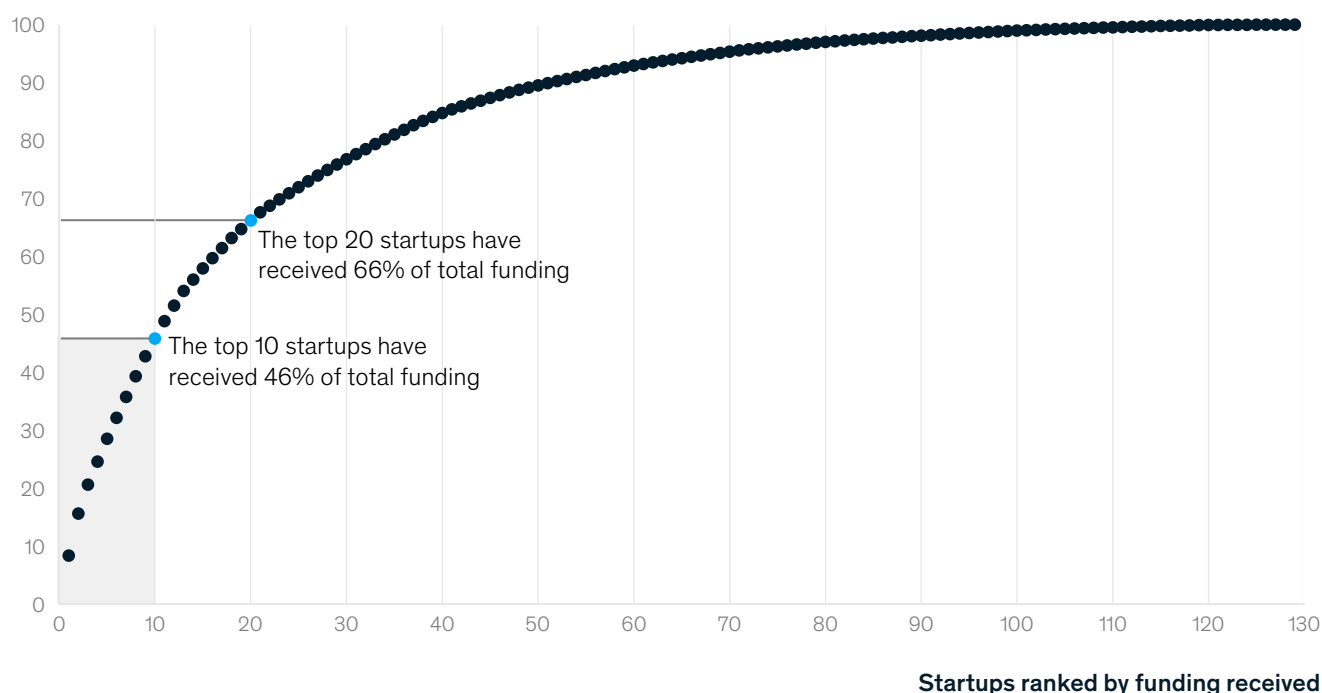
This significant rise in funding begs the question: where does all this money go, and what are the trends getting investors so excited about this industry? (see Exhibit 5 and Exhibit 6).

Exhibit 4

## The 10 best-funded startups account for 46% of total funding

### Cumulative funding

Percentage of total funding



Source: Crunchbase



## Startups were assigned to 11 distinct business models challenging 4 traditional industry segments: the last-mile delivery category has received far more funding than other segments

Traditional industry: ■ CEP ■ Storage ■ Transport ■ Tech

Startup business model	Description	Total funding, USD billions	Examples
<b>New last-mile delivery models</b>	Offer innovative last-mile delivery services to retailers and individuals by using crowdsourced delivery, drones, AVs, etc.	9.9	New DaDa HiveBox
<b>Road freight marketplaces and solutions</b>	Increase efficiency by connecting shippers and trucking companies via marketplaces or provide fleet management services	6.0	Blackbuck Convoy Manbang
<b>Warehousing</b>	Develop logistics infrastructure or optimize the storage and fulfillment of goods through robotics, self-driving vehicles, micro-fulfillment, etc.	3.3	ESR NewEase
<b>Air and ocean transportation</b>	Offer booking and management of international shipments, incl. value-added services (e.g., track and trace, customs)	1.6	FreightOS Flexport Freighthub
<b>Traditional third-party or contract logistics services</b>	Provide third-party logistics services mainly in emerging markets with lack of established players	1.4	Best Inc. Juma Peisong
<b>New entrants in the parcel business</b>	Act as a traditional parcel business: include pickup, sorting, and delivery	1.2	Delhivery Ninja Van
<b>Asset tracking</b>	Develop and manufacture chips, sensors, and RFID technology to enhance supply chain visibility	0.9	C3 Scandit
<b>B2B e-commerce specialists</b>	Provide a specific value-chain-focused solution to online retailers (e.g., return logistics, e-fulfillment, conversion optimization)	0.7	Shippo ShipBob
<b>Inventory/order management</b>	Optimize inventory allocation through software and analytics	0.5	Optoro Relex
<b>Intelligence providers</b>	Develop software or AI applications, e.g., to provide better forecasts, optimize replenishment, or increase pricing transparency	0.5	Xeneta FourKites
<b>Blockchain</b>	Develop distributed-ledger technology to enhance transparency and security	0.2	ShipChain

Note: CEP = courier, express, and parcel

Source: CB Insights; Crunchbase; company websites

## Startups in the CEP market have attracted the most funding, despite a smaller addressable market

Traditional industry	Market size USD billions, 2017	CAGR 2017–23	Challenged by startups in	Total funding USD billions, until 2019
CEP	319	8–9%	New last-mile delivery models	9.9
			New entrants in the parcel business	1.2
Transport	2,249	2–4%	Road freight marketplaces and solutions	6.0
			Air and ocean transportation	1.6
Storage and physical supply chain solutions	340	3–5%	Warehousing	3.3
			Traditional third-party or contract logistics services	1.4
			B2B e-commerce specialists	0.7
Tech	40	5–6%	Asset tracking	0.9
			Inventory/order management	0.5
			Intelligence providers	0.5
			Blockchain	0.2

Note: CEP = courier, express, and parcel  
 Source: CB Insights; Crunchbase; company websites

### Most funding was raised by startups offering last-mile delivery services to retailers and individuals

### Last-mile – venture capital’s favorite

Most funding, around USD 11.1 billion, was raised by startups offering last-mile delivery services to retailers and individuals – a venture capital bet that was analyzed in detail in 2017.<sup>3</sup> This last-mile segment benefits from the growth in their addressable market, e-commerce logistics (8 to 9 percent CAGR from 2017 to 2023).

Most of the analyzed last-mile startups rely on unconventional delivery modes, e.g., using crowdsourced delivery, drones, AVs, and parcel lockers. As they make up USD 9.9 billion of the 11.1 billion, these are more successful in raising funds when compared to their peers relying on a more traditional fleet. Companies like Nuro Inc. and Hive Box are major attractions for investors in this category and benefit from the hype

around their unconventional delivery modes as they anticipate *The Next Normal* in last-mile parcel delivery.<sup>4</sup>

Nuro designs, manufactures, and operates delivery robots. Their robot is being piloted in Houston, Texas, and Scottsdale, Arizona. Currently, Nuro works together with retailer Kroger to deliver groceries for a fee. The California-based company’s Series B brought in USD 940 million in February 2019 and was led by SoftBank’s Vision Fund.<sup>5</sup>

Hive Box, a Shenzhen-based startup, was established in 2015 and now operates more than 150,000 parcel lockers located across China, which handle more than 9 million parcels per day. Five express companies, including SF Express, have a stake in the startup. The company raised USD 323 million in a Series B round in January 2018 and currently totals more than USD 700 million in funding.<sup>6</sup>

<sup>3</sup> <https://www.mckinsey.it/sites/default/files/the-urban-delivery-bet-usd-5-billion-in-venture-capital-at-risk.pdf>.  
<sup>4</sup> <https://www.mckinsey.com/featured-insights/the-next-normal/parcel-delivery>.  
<sup>5</sup> <https://www.theverge.com/2019/3/14/18265397/nuro-robot-delivery-houston-texas-kroger>.  
<sup>6</sup> Crunchbase.

## Freight platforms received the most corporate funding, threatening to replace traditional intermediaries

### The freight platform market – startups pushing forward, incumbents catching up

Another segment that has captured a lot of attention and funding is freight platforms. This holds especially true for platforms that focus primarily on road transportation, which have received about USD 6 billion in funding. While the vast majority of this sum comes from investment funds, this segment has also seen the most corporate funding. For example, DB Schenker acquired a USD 25 million stake in the road freight booking platform uShip. These platforms aim to enhance pricing transparency, professionalize, and digitize the often informally handled shipper carrier exchange. They focus on leveraging existing data as a means to address vast inefficiencies that still exist in the market (e.g., caused by empty runs). Thus, these startups contribute significantly to improving the sustainability of the transport and logistics industries, a trend that is becoming more prevalent. Moreover, the customer experience and ease of use for truckers and customers is compelling. Even though the addressable market is gigantic (approximately USD 2.2 trillion for all modes globally), growth is slower, as only 2 to 4 percent CAGR is expected from 2017 to 2023.

While these road freight marketplaces and solutions have yet to capture large volumes, they have surely challenged asset-lighter brokers and freight forwarders by matching shippers, loads, and carriers directly, thus threatening to replace traditional intermediaries. The emergence of these solutions is pushing the traditional industry toward providing better visibility and more convenience.

Some incumbent players have already reacted: DHL Freight launched the online marketplace Saloodo in 2016, and Kühne + Nagel launched FreightNet, a road freight booking platform, in 2014. Transport Intelligence revealed that around 10 percent of volumes

are shipped or booked through online freight booking platforms, marketplaces, or online forwarders, which include incumbents' platforms like FreightNet.<sup>7</sup>

Platforms with a similar approach but a focus on air and ocean transport have raised far less than their road transportation peers (USD 1.6 billion). However, Flexport, with its strong offering and prominent customer base, clearly dominates this segment and accounts for USD 1.3 billion of the funding. Flexport recently announced a partnership with Chinese delivery and logistics company SF Express “[...] to offer customers a one-stop shop for freight services, including robust full container load (FCL) ocean shipping and air cargo. Working together, Flexport and SF Express will connect data and platforms to provide smarter and more advanced logistics services to address the specific needs of Chinese companies.”<sup>8</sup> Incumbents have also reacted in this segment. Most prominently, Maersk launched its own digital forwarder, Twill, in April 2017. The digital shipping platform initially focused on shipments between China and the UK, but quickly expanded and managed to reach 27 countries by the end of 2018.<sup>9</sup>

New entrants in the third-party logistics market have also been successful in raising capital. USD 3.3 billion was given to startups developing logistics real estate, such as e-Shang Redwood, and USD 1.4 billion to asset-based logistics service providers, such as Chinese BEST Inc. or US-based Blue-Grace Logistics.

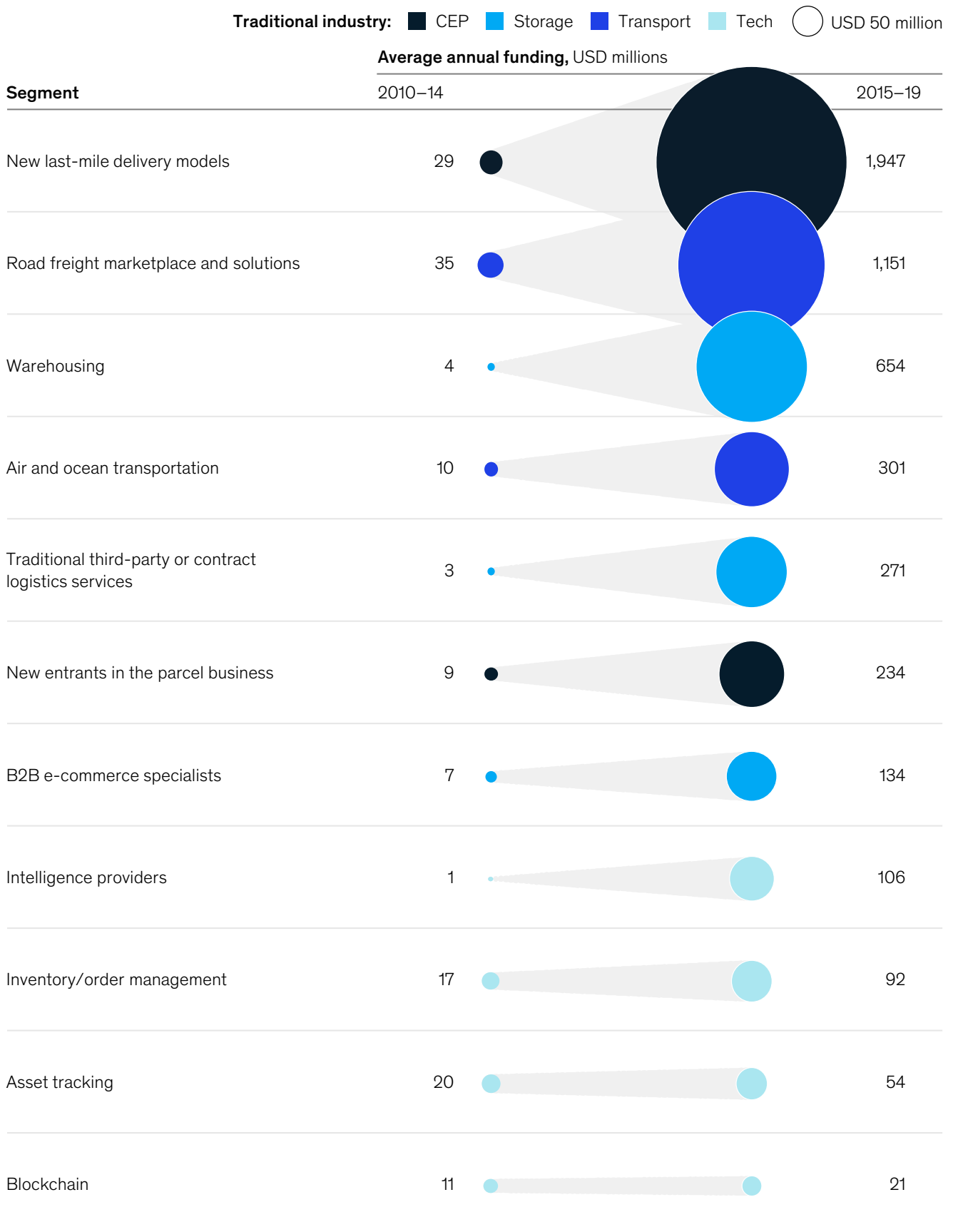
These are followed by companies involved in asset tracking (approximately USD 1 billion), specialized e-commerce service providers (approximately USD 640 million), providers of analytics solutions (approximately USD 530 million), inventory and order management solution providers (approximately 530 million), and finally, startups involved in developing blockchain technology for logistics (approximately 160 million).

<sup>7</sup> <https://www.ti-insight.com/product/global-freight-forwarding/>.

<sup>8</sup> <https://www.flexport.com/blog/flexport-and-sf-express-partner-to-increase-freight-visibility-in-china>.

<sup>9</sup> <https://www.maersk.com/news/articles/2019/06/26/leveraging-technology-to-grow>.

## Last-mile and freight platforms have been on the map for a while; tech-enabled asset players in 3PL market gaining traction



Source: Crunchbase; McKinsey

## Asset-based logistics service providers are the second fastest-growing segment

Looking at investments in these categories over time, warehousing has grown the most when comparing the average yearly funding in the periods of 2010 to 2014 and 2015 to 2019.

Asset-based logistics service providers are the second fastest-growing segment, so both rather “traditional” segments are increasingly popular among investors. While the asset-lighter freight platforms and last-mile delivery companies have collected the most funding, investors seem to increasingly turn back to good old asset-based models revamped with tech capabilities (see Exhibit 7).

## China is ahead of the pack and has taken the lead from the US

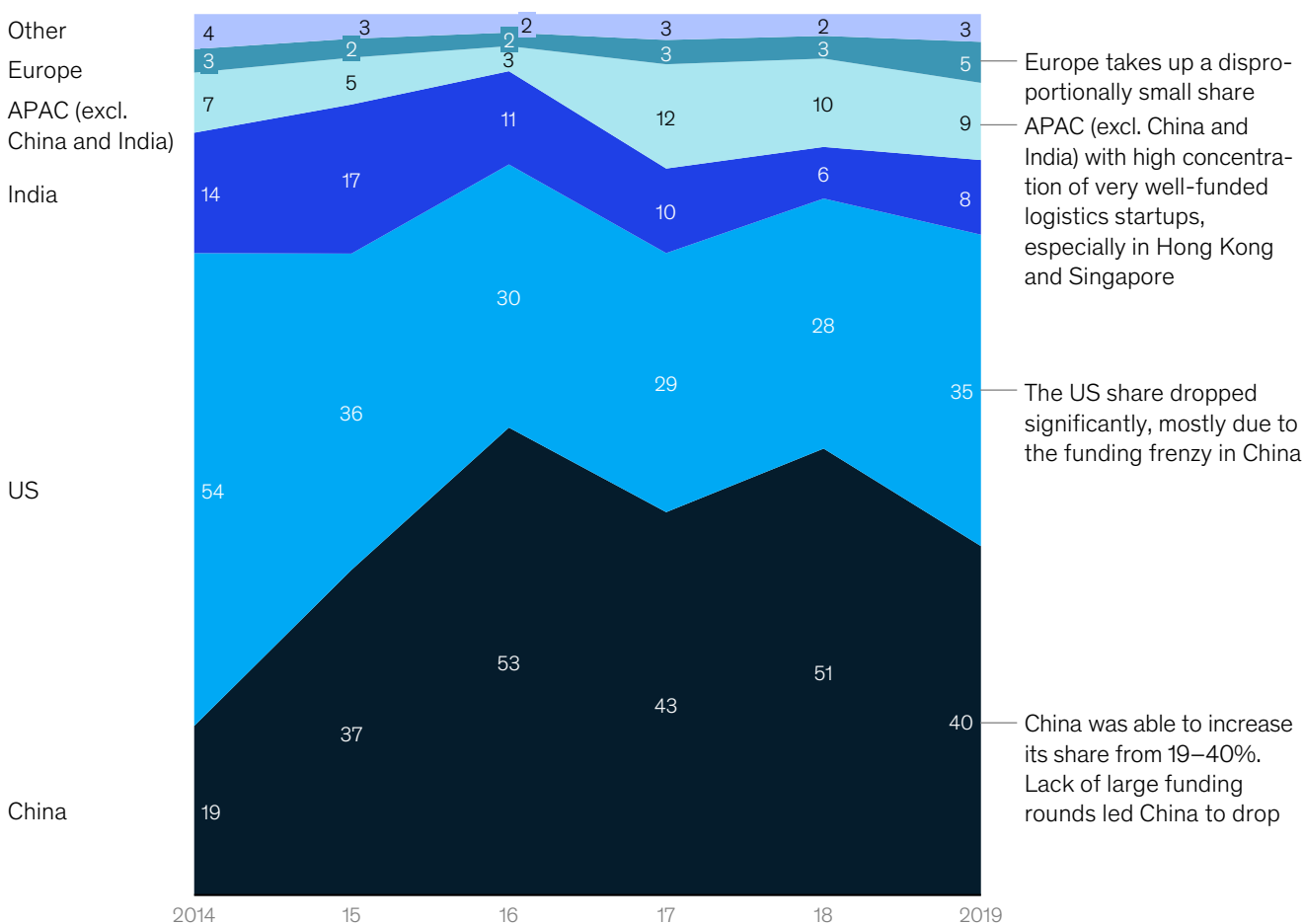
In recent years, funding has shifted from the US to China. While the US accounted for 54 percent of total funding back in 2014 and only 35 percent in 2019 (cumulative), China accounted for 40 percent in 2019 (cumulative) compared to just 19 percent in 2014. The startup landscape in China is characterized by a high concentration of very large funding rounds: a mere 20 Chinese logistics startups were able to collect more than USD 10 billion, while 61 of their US peers were able to collect about USD 9.8 billion (see Exhibit 8).

Exhibit 8

### The US received the largest amount of funding in 2014 — in 2019, Chinese startups dominated funding

#### Cumulative funding by region<sup>1</sup> over time

Percentage of total, 2014–19



1. Funding received by companies headquartered in the respective region.  
Source: CB Insights; Crunchbase; company websites

# 6 out of 10

best-funded logistics startups are from China

The concentration in China can also be illustrated this way: six of the top ten best-funded logistics startups are from China, the best-funded of which being the Manbang Group, an Uber-like platform for trucks formed by the merger of Yunmanman and Huochebang; it received USD 1.9 billion in an enormous private-equity round. Manbang has used the funding to acquire logistics talent and acquire its own assets via its integration of Zihong Logistics. Manbang's funding round constitutes the single largest funding round for a logistics startup and was led by SoftBank's Vision Fund as well as the China Reform Fund Management, with other investors, including Google's Capital G, Tencent Holdings, Sequoia Capital, and others.

China's dominance is driven by a tendency to innovate fast and a willingness to try out novel business models, accelerated by stronger overall economic growth. China has already become one of the greatest incubators of many disruptive digital innovators and is a leading global investor in disruptive technologies. One way to see how this manifests is the tremendous demand growth in e-commerce, which has long moved past tier-one cities.<sup>10</sup> The country thus seeks new, efficient, and convenient ways of delivering the ever-increasing number of goods ordered online. Previous research shows that the average citizen residing in tier-one cities orders more than 70 parcels per year, on average.<sup>11</sup>

The importance of the e-commerce sector for China is also reflected in Premier Li's "Internet Plus" initiative, which aims to "boost the integration of logistics and internet technology, lower the cost for enterprises, and make people's lives more convenient."<sup>12</sup>

E-commerce does a great deal for the convenience part, and thus last-mile

delivery providers have received lots of attention and funding. Another important part of the quote is that the cost for enterprises will be lowered. China has relatively high logistics costs (logistics account for approximately 13 percent of GDP, while developed countries average at approximately 8 percent), and the government has repeatedly expressed its interest in lowering these. The Reform Fund's stake in Manbang shows that supporting startups is one way they intend to do so.

Furthermore, local governments set up industrial parks and provide infrastructure and capital to create an ecosystem in which entrepreneurs can cooperate and flourish. The government expects this to spur economic growth, foster innovation, and generate tax revenue. The latter seems to be less of a priority; however, venture capital firms have enjoyed a deduction on taxable income by 70 percent of their investment in seed or early-stage high-tech startups since the beginning of 2019.<sup>13</sup> Small companies can also qualify for significant tax relief if their income does not exceed RMB 3 million (about USD 435,800).<sup>14</sup>

Aside from favorable demand growth and high government support, a third factor plays an important role in the success of China's logistics startups: the combination of tech and logistics expertise. This is best observed at the Manbang Group, which has hired hundreds of people previously employed by logistics players, such as Alibaba or logistics incumbents.

<sup>10</sup> For more information, see: <https://www.mckinsey.com/~media/mckinsey/featured%20insights/china/china%20digital%20consumer%20trends%20in%202019/china-digital-consumer-trends-in-2019.ashx>.

<sup>11</sup> For more information, see: <https://www.mckinsey.com/~media/McKinsey/Industries/Travel%20Transport%20and%20Logistics/Our%20Insights/The%20endgame%20for%20postal%20networks%20How%20to%20win%20in%20the%20age%20of%20e%20commerce/The-Endgame-for-Postal-Networks.ashx>.  
<sup>12</sup> [http://english.www.gov.cn/premier/news/2016/07/21/content\\_281475398667727.htm](http://english.www.gov.cn/premier/news/2016/07/21/content_281475398667727.htm).

<sup>13</sup> <http://www.chinatax.gov.cn/chinatax/n810341/n810765/n4182981/201901/c4184156/content.html>.

<sup>14</sup> <https://www.sjgrand.cn/sme-startup-china-guide-recent-tax-cuts/>.

## Indian market has seen several successful new entrants with traditional business models

### APAC – successful new entrants with traditional business models

APAC (excluding China) also has a high concentration of very well-funded logistics startups, especially in Hong Kong, Singapore, and India.

Startups in Hong Kong benefit from their proximity to large and fast-growing markets in China and Southeast Asia. For example, e-Shang Redwood, a logistics real estate developer, has a large portfolio of projects in China and has even expanded into Japan, South Korea, India, Singapore, and Australia. Similarly, 4PX Express, which was established in Hong Kong in 2004, already employs 1,500 people across 50 locations and provides China-focused cross-border e-commerce services to a large number of merchants. The Singapore Post and Shenzhen Capital Group, a government-owned venture capital and private-equity investment fund, are among the company's major investors.<sup>15</sup>

Last-mile startups entering the market with more traditional modes (scooters, vans, trucks) are most successful in Asia-Pacific, especially in India, where players, such as Delhivery and Xpressbees, have built a completely new parcel network and collected hundreds of millions in funding within a few years. This shows that the traditional parcel players' offerings have not sufficiently addressed these markets.

Delhivery managed to build a parcel network within a few years after its establishment in 2011 and has thus far collected around USD 935 million in funding. The company moved from providing quick food deliveries to e-commerce fulfillment and has delivered over 550 million shipments thus far. Besides operating an express parcel network, the company has 75 fulfillment centers (with more than 4 million square meters of space) across India, their own fleet offering less-than-truckload and full-truckload services, as well as a cross-border network of clearance agents and forwarders. Delhivery has also built its own tech capabilities, e.g., through its in-house transport management platform and its freight booking and management interfaces Optimus and Orio.

Xpressbees is another Indian delivery startup specializing in e-commerce and delivers over 60,000 shipments per day. The company focuses on same- and next-day delivery and has gathered more than USD 160 million in funding (including an investment from Alibaba) since their establishment in 2015.

Bangalore-based digital trucking platform Blackbuck has simplified India's trucking market and was able to raise USD 285 million since their founding in 2015. Their platform lists 300,000 trucks from 60,000 fleet owners, and the company recently announced a partnership with Maersk.<sup>16</sup>

<sup>15</sup> <http://en.4px.com/index.php/about-us.html>.

<sup>16</sup> <https://www.maersk.com/news/articles/2019/08/21/maersk-and-blackbuck-partner>.

# 5%

of the cumulative logistics startup funding is accounted for in Europe

## Europe – only a drop in the ocean

The money raised by their Asian and US peers has reached levels that European startups can only dream of. Europe's logistics startups are funded far less and only account for a 5 percent share of the cumulative logistics startup funding.

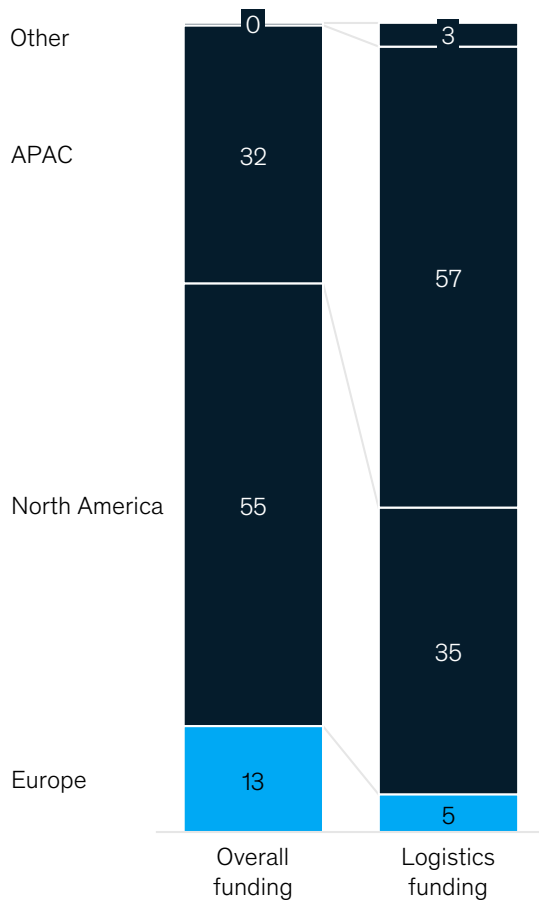
Despite Europe's strong presence in the traditional industry, with big names like Deutsche Post DHL, Kühne + Nagel, DSV, and Schenker, European logistics startups cannot keep up with the funding raised in other parts of the world. Europe contributes 26 percent to the global GDP, and European-based logistics companies take up almost half of the global top 50 logistics service providers' revenues, but the funding that European logistics startups receive is low compared to the US and China (see Exhibit 9).

Exhibit 9

### Funding for logistics startups in Europe lags when compared to the overall funding landscape

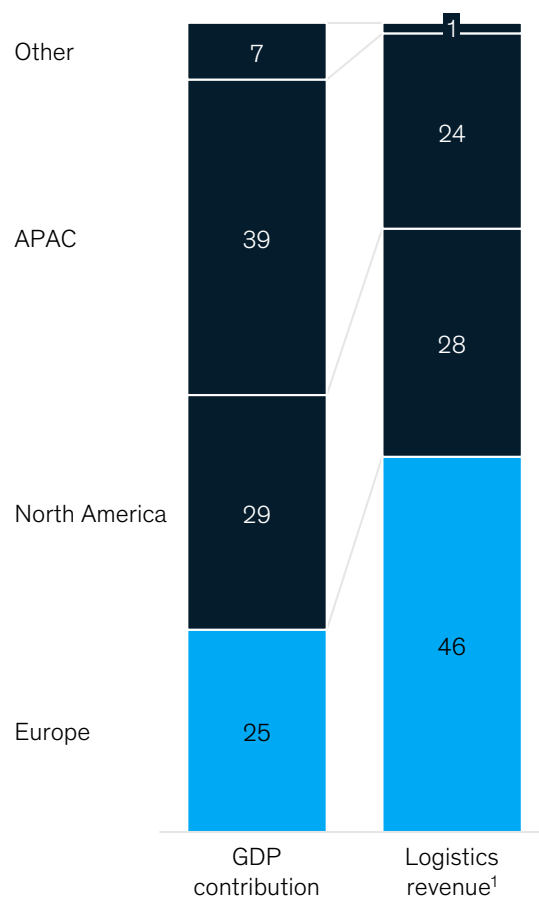
#### Funding in logistics vs. overall venture funding by region

Percentage of total, 2019



#### GDP contribution vs. logistics revenue contribution by region

Percentage of total, 2018–19



1. Determined by looking at global revenue of the top 50 LSPs from Armstrong & Associates. Source: Crunchbase; PitchBook; IMF; Armstrong & Associates



## Funding rounds in Europe are dwarfed by enormous rounds in US and APAC

Apparently, neither the local incumbents nor local investor communities believe in the opportunity of tech-enabled logistics startups to the extent that Chinese and US investors do. What is considered significant and makes headlines in Europe, such as last year's highlights, including Zencargo's USD 20 million round in April, FreightHub's USD 30 million in May, or even Sennder's USD 70 million in July, is dwarfed by rounds worth hundreds of millions in Asia and the US. One part of the explanation is that venture funding just isn't as common in Europe as it is in Silicon Valley or Shenzhen. However, the overall venture capital funding share of Europe (across all industries) was at about 15 percent in 2018, so the 5 percent share of the cumulative logistics startup funding still seems very small.

One significant barrier for the European logistics startups is the established shippers, such as traditional manufacturing companies, which have relied on incumbent services for decades. This makes them reluctant to use new services from unestablished companies, while younger, faster-growing Asian peers, who are not bound by decade-long relationships to their logistics partners, seem to be more open to using these new services.

While these European incumbents have not yet been seriously threatened by any new entrants in their home market (partially because these startups lack serious firepower and assets), with some of their volumes in foreign markets, especially India, Southeast Asia, and China are already being taken away by these well-funded startups. Compared to the US and China, European startups are also at a disadvantage when it comes to the size of their home countries, and to some extent, language barriers and national borders also pose restrictions on the growth of these new entrants. This fragmentation even takes place within

national borders. Logistics clusters and tech-startup clusters are seldom colocated, hindering cooperation and knowledge exchange among the two camps. Digital startups spawn and flourish in capital cities, such as Amsterdam and Berlin, but have very little contact with logistics hotspots like Hamburg or Rotterdam. This might also be a reason why last-mile is such a popular and well-funded segment. Urban tech talent is confronted with rapid urban e-commerce delivery more frequently than with the drier issues of warehouse process optimization or port and airport operations to process long-haul shipments, usually located outside of cities.

The analyzed funding is creating substantial opportunities for startups to drive innovation in the sector. It is enabling young companies to compete with incumbents and will challenge the status quo over the next decade.

In the following section, the implications for incumbents, startups, and investors are analyzed, and key hypotheses are presented.

## Disruption ahead, gradual evolution, or big bust?

### **Incumbents are here to stay – at least for now**

Although logistics incumbents are not going anywhere, the question remains: how disruptive will these startups turn out to be? Will they gradually eliminate traditional value pools and monopolize future ones (as seen in travel distribution, music, television, and communication)? Or will they converge with innovating incumbents competing for the same customers and profits in the same services?

The most mature startups from the sample have already realized their need for operational improvements and thus have turned to expanding logistics expertise by hiring staff from the incumbents (e.g., Uber Freight with headquarters in Chicago) or even by developing their own asset-based networks (e.g., Flexport built warehouses in Los Angeles, Hong Kong, and recently added one in Shenzhen). The company also chartered B747s for shipments from Hong Kong to Los Angeles, but recently replaced this dedicated service with more flexible blockspace agreements on freighters covering several origins in Asia.

The good news for the traditional logistics providers is that in the short term, the network, assets, and relationships of incumbents are not going to be disrupted, at least not in their major markets. As of now, no new entrant has enough control over its network to ensure a globally integrated, seamless transportation on behalf of a large shipper: a capability that Kühne + Nagel or DHL Global Forwarding consider their domain.

### **Startups are eating away at incumbents' growth prospects**

Despite the fact that incumbents are here to stay, startups have managed to tap into markets that incumbents have long ignored. They were therefore able to take a significant share of future growth potential away from incumbents. This is reflected in some of the lackluster capital market trading of incumbents today. For

example, in e-commerce, third-party logistics companies are increasingly losing shares to the growing captive logistics offering of e-commerce and tech leaders as well as startups that have tapped into market niches (e.g., seamless returns handling). Tech companies, such as Google and SAP, are investing in AI, machine learning, and analytics capabilities focused on optimizing supply chains and logistics expenditures, while leading online retailers, such as Amazon and Alibaba, are investing in startups directly innovating in last-mile delivery.

In addition, startups in fast-growing, emerging markets have successfully adopted more traditional business models in view of the lack of strong incumbents. Capturing the growth of these emerging markets will be significantly tougher once a local startup has created strong customer ties – another major opportunity lost for incumbents.

To prevent new entrants from capturing the second wave of growth segments again and keep other customers from insourcing, incumbents need to review their global presence and customer satisfaction across service segments and new customer requirements, such as increasing sustainability, and map it against the most promising growth segments.

Overarching partnerships will become increasingly important for succeeding in the future, especially since processes in the industry are so intertwined. Connecting startups with incumbents can unlock substantial opportunities for all stakeholders. Incumbents have the opportunity to learn from young companies and deploy digital capabilities to link their physical network with customers; startups get to improve their credibility and brand awareness as well as gain access to customers. Incumbents can benefit by learning how to become more agile, get new ideas, and improve how dynamic and digital their brand is perceived.

## **By 2030, e-forwarding or crowdsourced delivery will become the new normal**

### **Logistics in 2030 – a more balanced picture**

Logistics incumbents are likely not going anywhere – and for them, that's as much of a reason for concern as it is a relief – but startups are gaining momentum in their respective high-growth regions and niches. When these segments (e.g., same-day and in certain categories and cities, even instant delivery) become part of the new normal, frontrunning startups will become some of the largest logistics companies. Since the distribution of funding does not reflect the current revenue distribution of logistics companies but is actually in contrast to it (Exhibit 9), the well-funded frontrunners from the startup space will likely originate from emerging markets. In fact, as more funding goes to less-developed markets, the new wave of big logistics companies will likely come from those markets. Thus, in 2030, the revenues of logistics companies will become more evenly distributed between the major regions.

The number of corporate investments in startups will grow further: growth in China is booming, and incumbents are enjoying low interest rates (while eager to lead in e-commerce logistics innovations). This will not only include corporate investments; M&A activity will also dominate the headlines in the coming years. Incumbents are already eyeing targets to insource growth verticals (e.g., CEVA Logistics acquired a stake in e-commerce logistics company Wing) or regions (e.g., Kühne + Nagel has acquired Indonesian Wira Logistics).

Not only will the regional revenue split become more balanced, but also the capabilities: while increasing complexity of managing a large logistics business will push startups to own assets, incumbents are increasingly improving user experience and their IT front end.

Innovation will continue: by 2030, e-forwarding or crowdsourced delivery will become the new normal, and startups will build complementing services to these new segments of logistics. In 2030, retailers might leverage a control tower solution developed by a startup (that might not even exist yet) to manage Instacart and other delivery options.

The logistics industry in 2030 will have moved even closer to customers. E-commerce and B2C will become the new normal, and incumbents will have improved their processes to become more customer friendly. Logistics companies that did not exist ten years ago will join DHL, Maersk, and other global heavyweights on the list of the largest logistics companies.

## Actions to make the journey to 2030 a success

### Incumbents

- **Map offering against market growth.** Startups have conquered markets where incumbents had a weak offering. To prevent new entrants from capturing the second wave of growth segments again and keep other customers from insourcing, incumbents need to review their global presence and customer satisfaction across service segments and map it against the most promising growth segments. The offering is likely to have more gaps than expected!
- **Outsource IT.** Just as logistics providers convince shippers to outsource activities that are not core to their business, namely logistics, logistics incumbents should avoid building complex proprietary IT solutions, even more so when these have to be layered on top of inflexible legacy systems. Unless you have exceptionally strong tech capabilities internally, use readily available solutions for the back end of operations (e.g., TMS, WMS, ERP) and focus on a seamless IT integration and a user-friendly front end. The money is most likely better invested in advanced data analytics and interpretation expertise than in hardware and non-differentiating software assets.
- **Put your money where your mouth is and digitize.** There are not a lot of options in choosing how to go about this – four to be exact:
  1. Self-digitize internal processes
  2. Establish own startups
  3. Acquire digital startups
  4. Cooperate with digital startups

However, successful digitization for incumbents requires investment and committed leadership. Incumbents need to let the incubated startup operate fully independently, but should provide connections, financial resources, and operational expertise. Maersk has successfully created an e-forwarder by building a truly independent entity and ultimately letting the new organization compete with the existing business. DHL realized that its asset-light brokerage platform was not suited for the Indian market and thus acquired its own assets. Its SmarTrucking business has already reached industry-leading performance KPIs (e.g., 95 percent on-time delivery) and aims for a rapid expansion of its fleet: 10,000 trucks within ten years compared to the 745 it has now.<sup>17</sup> UPS already developed a private-equity arm back in 1997. What is now known as UPS Ventures has invested hundreds of millions in companies, such as trucking platform TuSimple, crowdsourced delivery service Deliv, inventory/return management company Optoro, and more. In addition to launching FreightNet, Kühne + Nagel partnered with the Berlin-based “Startupbootcamp Smart Transportation & Energy” in 2016 and recently launched Reefknot Investments with Singaporean investment giant Temasek. This USD 50 million venture capital fund is looking to support growth stage businesses that have advanced tech capabilities or disruptive business models. On October 30, 2019, Reefknot made its first investment in Powler.io, an AI platform facilitating decision making. Reefknot’s investment was part of Powler’s Series B worth USD 24 million, which also included investors, such as Singapore’s SGIInnovate. Other successful examples of bold investments and leadership dedication include SF Express’ investments in HiveBox and the associated parcel locker infrastructure, Hellmann’s rollout of Freightos’ AcceleRate rate management and auto quote system, and DB Schenker’s investment and partnership with uShip.

<sup>17</sup> <https://www.dhlsmartrucking.com/press-room-details/dhl-to-add-10-000-trucks>.

## Startups

- **Gain some muscles.** To fill venture capital inflows and growth prospects with actual volumes, startups need to expand their scale, deliver operational excellence, and have a compelling sales process. This perhaps does not require ownership but at least privileged access to and control of selected tangible network assets (think cross-docks and consolidation facilities) as well as experienced logistics talent. Operational expertise is a key requirement as complex supply chains are always prone to errors and external disruptions that require on the ground resolutions – which cannot be provided by a pure software solution. So far, the industry was spared a fundamental disruption – something many were worried about only a few years back. While it makes for a compelling deal story, it's not enough to look at an interesting market, identify a certain problem, and figure out how it could be improved. Startups need serious operational expertise and a holistic understanding of the entire market and the relationship between each element. Otherwise, you might end up solving a certain problem in an impressive fashion but not being able to attract customers, or other processes could be involved in the flow of goods that might not be supported by the platform. You might have a good product that serves a certain purpose, but you're not going to be a game changer.
- **Showcase profitability.** In 2019, several startups entering the stock markets through an IPO found themselves in the middle of a disaster. The business models that failed their IPO had similarities to those in logistics: disruptors in an asset-based, network business experienced significant losses but high growth. Business model slogans like “Uberization of Freight” or “Airbnb for Warehouses” might look compelling at first glance, but the comparison only works on a

superficial level. In addition, recent public offerings have led investors and the industry to question how sustainable the economics of some of these new entrants really are. Therefore, investors will become more cautious when assessing the investment grade of logistics startups and look out for startups that showcase profitability on a unit basis or on a submarket level.

- **Stay flexible.** In an industry with strong network effects and economies of scale, of course not all startups in this sample will prove to be successful. Staying flexible will help, as demonstrated by a number of young companies that successfully changed their business model. Examples include Uber's step into logistics: while Uber's first logistics business, the instant-delivery platform Uber Rush, was terminated after a few years of losses, its second platform, Uber Freight, is already a sizeable business and is still growing. The startup Kontainers started as an e-forwarder and has successfully transformed into a back-end solution provider for logistics incumbents.

## Investors

- **Look out for the most analog steps in the value chain.** While last-mile delivery models and freight platforms have already acquired billions in funding, the next industries ready for disruption and massive startup funding could be within connectivity of ocean and surface-based transportation. Containers still wait between five and seven days on average to be picked up. In a world where the industry has come to expect instant delivery, this is an opportunity for startups to step in. Another interesting segment is logistics real estate: with increasing demand for warehousing space close to end consumers, innovative solutions like store , micro-, or crowd-sourced fulfillment might increasingly attract the attention of investors. There are several segments

in logistics that have not yet fully benefitted from digitization and still cause friction in the supply chain.

- **Foster overarching partnerships.** Investors can use their network to connect startups with incumbents. This can unlock substantial opportunities for all stakeholders. Startups get to improve their credibility and brand awareness as well as gain access to customers. Incumbents can benefit by learning how to become more agile, get new ideas, and improve how dynamic and digital their brand is perceived. Additionally, investors can connect with startups from related industries. Since processes are so intertwined, most established players are not pure play, meaning they combine capabilities from different segments. Warburg Pincus merged its warehousing service provider e-Shang with logistics property investor The Redwood Group to create e-Shang Redwood. After suspending its IPO in Hong Kong in June last year, due to unfavorable market conditions, the group is now looking to revive its offering.<sup>18</sup>

Another example of an investor bringing together startups from related industries is Insight Partners: their roll-up (acquisition and merger) of E2Open, INTTRA, and Amber Road is increasingly creating a network of information exchange spanning the entire value chain.

Other interesting opportunities could bring together logistics startups with startups in autonomous driving or electrified transportation, or synergies could be created by teaming up a digital freight forwarder with a visibility provider. Investors should build their portfolio wisely to bridge the gaps in startups' offerings and unlock major potential, either through extensive partnerships or even roll-ups.

<sup>18</sup> <https://www.ft.com/content/a61d4c2e-d5d3-11e9-8367-807ebd53ab77>.

## **The ultimate winners are end customers and shippers benefitting from increasing competition and increased customer centricity**

Incumbents have the opportunity to learn from young companies and deploy digital capabilities to link their physical network with customers; startups are in the spotlight of incumbents and investors, and can study the mistakes of the sector's unicorns; investors can select from a growing number of companies spanning all steps of the value chain and different levels of maturity.

Despite these opportunities for players in the logistics industry, the ultimate winners are end customers and shippers benefitting from increasing competition and increased customer centricity. The logistics sector has exciting times ahead.

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