AUTOMOTIVE & MOBILITY INVESTMENT 2017 - 2018

Exclusively prepared for PLUG AND PLAY | Ventures

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stats

The following deals are included in this analysis:

2,855
global deals

2,294
global companies

$236.63 billion
global investment

40
deal types

from automotive & mobility industry in 2017 and 2018

All deal information comes from Pitchbook

stats

Chart 1.1 Annual funding ($ M) and deal number

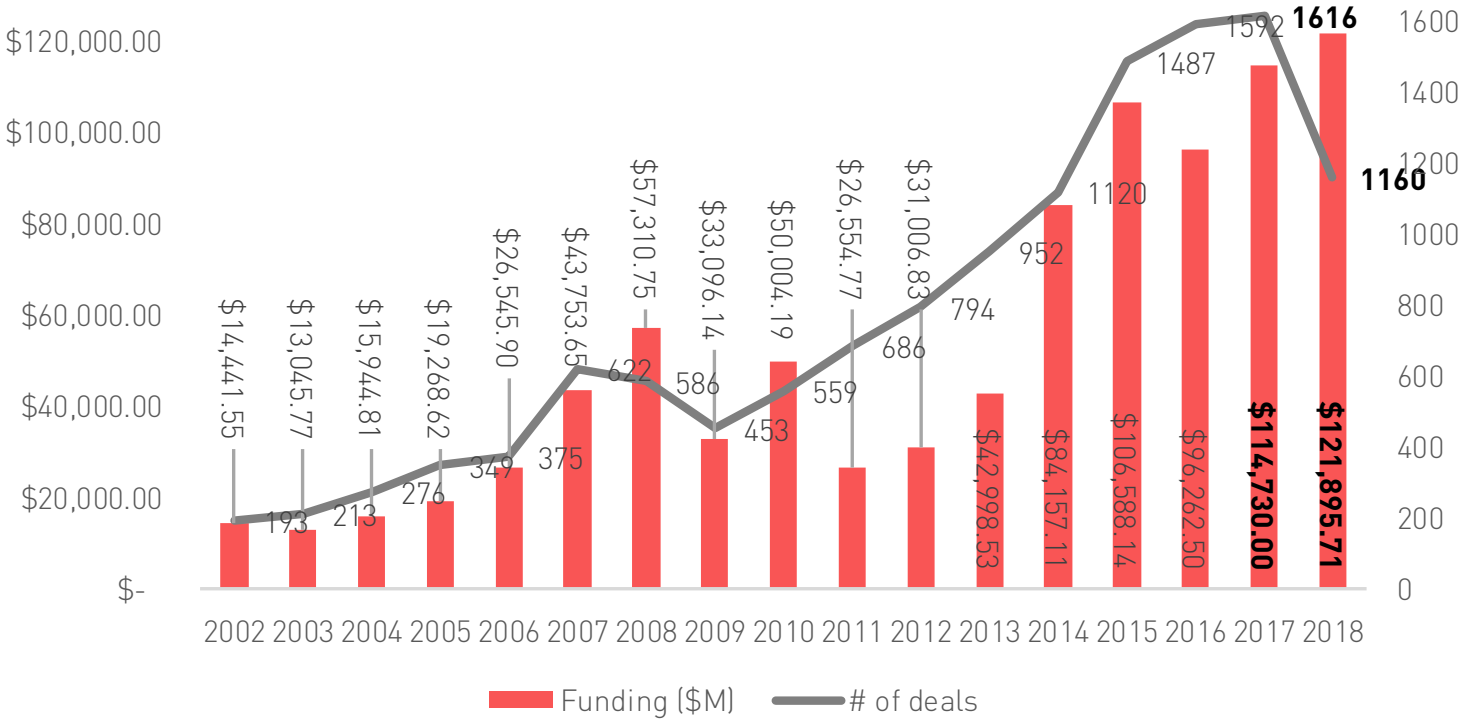
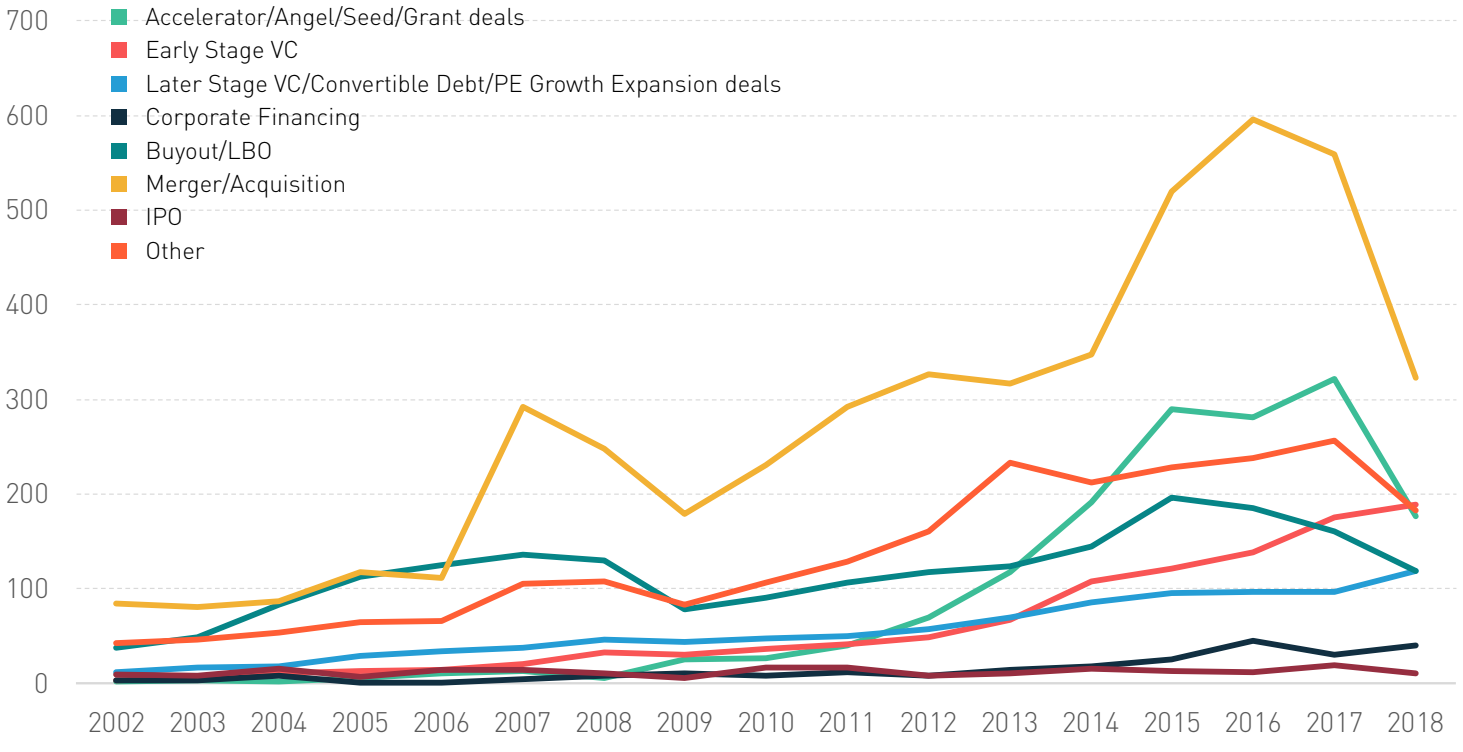


Chart 1.2 Deal number by stages



definition

Auto Parts/Accessories Manufacturer/Distributor
Definition: Suppliers of traditional and basic auto parts/accessories
Typical customers: OEMs, vehicle owners
Examples of products/services: brake, tire, wheel

Automobile Manufacturer
Definition: Manufacturers of cars, trucks, buses, and other types of vehicles
Typical customers: consumers, fleet owners
Examples of products/services: passenger car, commercial vehicle

Motorcycle/Bicycle Manufacturer/Distributor
Definition: Manufacturers/Distributors of motorcycles, scooters, and bicycles
Typical customers: consumers, fleet owners
Examples of products/services: motorcycle, scooter, bicycle

Advanced Feature Developer
Definition: Developers of software/hardware that provides add-on features for vehicles
Typical customers: OEMs, autonomous driving vehicle developers
Examples of products/services: connected car system, cybersecurity software/hardware

Full-stack Mobility Solution Developer
Definition: Full-stack developers of autonomous driving solution
Typical customers: OEMs, ride-sharing platforms, car rental comapnies, shippers, logistics companies
Examples of products/services: L4 autonomous driving system

Embedded Software Developer
Definition: Developers of software that are essential for developing autonomous driving
Typical customers: OEMs, autonomous driving vehicle developers
Examples of products/services: perception, mapping, route planning module

Embedded Hardware Developer
Definition: Developers of hardware that are essential for developing autonomous driving
Typical customers: OEMs, autonomous driving vehicle developers
Examples of products/services: LiDAR, radar, camera

Transportation Service Platform Operator/Developer
Definition: Developers or operators of transportation service platforms that provide services directly to passengers or connect service suppliers and passengers
Typical customers: consumers, shippers, logistics companies
Examples of products/services: ride-sharing platform, car-sharing platform

definition

Vehicle Service Provider

Definition: Providers of vehicle services on purchasing, operating, and maintaining, and supplies/technologies that enable these services
Typical customers: fleet owners, vehicle owners, car rental companies
Examples of products/services: E-commerce for auto parts, car repair, car wash, used-car trading platform, car insurance, fleet management system

Mobility-related Product/Service Provider

Definition: Providers of services/products for drivers or passengers to improve their mobility experiences
Typical customers: consumers (drivers, passengers)
Examples of products/services: navigation app, parking space marketplace, dashcam

Industry Technology/Service Provider

Definition: Providers of technologies/services to manufacturers/service operators to improve efficiency, safety.
Typical customers: OEMs, auto parts manufacturers, transportation/vehicle service providers
Examples of products/services: data management system, battery simulation software

Alternative Mobility Solution Developer

Definition: Developers of new mobility solutions other than autonomous driving ground transportation
Typical customers: consumers, fleet owners, public transit authorities
Examples of products/services: hyperloop, drone

Other

Definition: Companies that do not belong to any of the above categories
Typical customers: N/A
Examples of products/services: traffic management system, smart road system

quick takeaways

Verticals to Watch	Products	Reasons
Autonomous Truck Solution Developer 	L4 autonomous truck solution	Huge total addressable market (TAM) No dominant yet Less competition than the passenger car space Lower technical barriers than passenger cars B2B business with fewer public concerns Strong demand from shippers/logistics companies Closer to commercialization than passenger cars
Autonomous Delivery Vehicle Developer 	Autonomous delivery vehicles/robots	Huge total addressable market (TAM) No dominant yet B2B business with fewer public concerns Strong demand from shippers/logistics companies
Transportation Service Platform Developer 	Routing, scheduling, dispatching, tracking, matching technologies	Huge total addressable market (TAM) Below-leverage level competition
Perception Hardware Developer 	LiDAR and LiDAR-like products Radar Camera Other sensors	Key to autonomous driving Strong pain point of the industry (e.g. high cost, short detection range, low resolution, short life in production env. etc.) Huge Total addressable market (TAM)
Smart Dashcam 	Dashcam with AI/ML capabilities	Huge total addressable market (TAM) High value of collected data Quick commercialization
Cybersecurity Cloud Service Developer/Operator 	Cloud service that monitors vehicle cybersecurity	Huge total addressable market (TAM) Key pain point in the connected car age No dominant yet
Cybersecurity Hardware Developer 	Hardware that enhances vehicle cybersecurity or manufacturing	Huge total addressable market (TAM) Key pain point in the connected car age No dominant yet
Alternative Mobility Solution Developer 	Flying car Hyperloop Drone Underwater vehicle	Huge total addressable market (TAM) High potentials for new businesses

Companies (Early-stage Companies Highlighted)	Market Barriers to build
Kache.ai (US, founded by Otto co-founder) Kodiak (US, founded by Otto co-founder) Ike Locomation (US, $5.1M raised) Einride (EU, $9.1M raised, designs and manufactures autonomous trucks) FABU (CN) Mars Auto (KR, $3.69K raised) Gatik AI (US, autonomous trucks for urban logistics)	- Advanced AV technology (from perception to control) - Excellent perception solution (longer sight range) - High fuel efficiency - Higher level of productization (more use cases, less down time, less driver intervention) - First-mover advantage (commercial trials, pilot fleets) - Good partnerships / supply chain - Heavy investment
Boxbot (US, $9M raised with a $22.50M Post-val) Udelv (US, $9.35M raised with a $48M Post-val) **Nuro** (US, $92M raised with a $250M Post-val)	- Advanced AV technology (from perception to control) - Advanced product design (e.g. storing space) - First-mover advantage (commercial trials, pilot fleets) - Good product strategy - Good partnerships / supply chain - Heavy investment
AutoFleet (IL, early stage) Flit Technologies (EU, 1000+ clients) **Via** (US, $1B Post-val in Oct 2017) **Optibus** (IL, $54.50M raised) **Ridecell** (US, $60 in Sep 2018 with $260M Post-val.)	- Advanced algorithms - Strong business development capabilities (B2B) - Strong government relations (B2G)
Hertzwell (SG, $18.9K raised with $236.25K Post-val, 3D imaging radars) Zendar (US, $120K raised with $1.71M Post-val, high-definition radar) TriEye (IL, short wave infrared products) WaveSense (US, $3M raised with $12M Post-val, ground penetrating radar) Lunewave (US, $5.1M raised with $14M Post-val, sensor consists of custom-made Luneburg lens antennas in various sizes) Abax Sensing (CN, LiDAR) Mirada Technologies (US, $224.96K raised, LiDAR) Opsys Technologies (IL, LiDAR) Nodar (US, $447K raised, LiDAR) **Blackmore Sensors and Analytics** (US, $25.5M raised with $67.85M Post-val, LiDAR) **Cepton Technologies** (US, $18M raised with $50M Post-val, LiDAR) **Hesai** (CN, $18M raised, LiDAR) **Innoviz Technologies** (IL, $82M raised, LiDAR) **Outster** (US, $30M raised with $212M Post-val, high performance LiDAR) **Arbe Robotics** (IL, $21.5M raised, imaging synthetic aperture radar) **Prophesee** (FR, $34.84M raised, biologically-inspired computer vision sensors) **Echodyne** (US, $44M raised with $94M Post-val, meta materials-based radar)	- Advanced technologies (team) - Good partnerships / supply chain - Strong industry knowledge - Strong business development capabilities (B2B)
Nexar (IL, $44.76M raised with $112.50 Post-val) **Nauto** (US, $174.20 raised)	- Advanced AI/ML technologies - Good partnerships / supply chain - Strong business development capabilities (B2B)
Olympus Sky (PO, Plug&Play Winter 2017 Mobility Batch 3 member) Perseus (KR, $591.08K raised, DDoS protection for AVs) Upstream (IL, $11M raised, security cloud for AVs)	- Advanced AI/ML technologies - Strong marketing and user growth capabilities (for B2C products) - Good partnerships - Strong business development capabilities (B2B) - Strong industry knowledge
Cycuro (IL, $120K raised with $330K Post-val, OEM security protection) Cybellum (IL, $2.5M raised, OEM security protection) Dellfer (US, $2.53M raised with $10.53M Post-val, OEM security protection) GuardKnox (IL, vehicle security protection hardware) Regulus Cyber (IL, $7.6M raised, security sensors) **Argus Cyber Security** (IL, acquired by Continental for $430M, OEM security protection) **Karamba Security** (US, $27M raised, ECU protection)	- Advanced AI/ML technologies - Good partnerships / supply chain - Strong business development capabilities (B2B) - Strong industry knowledge
Nxtft (IL, flying cars) Flytrex (IL, autonomous delivery drones)	Huge TAM High potentials for new businesses

key findings

1

Investors are taking fewer risks, and it is more difficult to exit.

This is the overall investment trend in the automotive & mobility industry in 2018. Investors are becoming very careful when investing in early-stage companies, while investors will still write a big check if a company proves its value. For the later-stage companies in this industry, investors poured more capital to help companies develop products (e.g. L4 autonomous driving systems) and expand to increase market share (e.g. Didi Chuxing). However, with a significant drop in buyout/LBO, M&A, and IPO deals and a big increase in the "price", it is more and more difficult for investors to find the buyers to exit.

The deal size is getting much larger. The total funding increased slightly from $114.73 billion in 2017 to $121.90 billion in 2018. However, the number of deals dropped about 1/3 from 1,616 to 1,160. The average deal size, therefore, increased dramatically from $157.81 million to $214.98 million. This growth comes primarily from the super-early-stage companies that raised accelerator/angel/seed/grant fundings and the established companies that received later-stage VC/corporate fundings.

Accelerator/angel/seed/grant funding gets doubled in 2018. In 2018, there was about $1.05 billion invested in super-early-stage companies, while there was only about $0.54 billion in 2017. Notably, the number of deals decreased about half from 321 deals in 2017 to 177 deals in 2018, resulting in a much higher average deal size of $8.78 million ($2.56 million in 2017).

There were fewer exits, and the M&A deal size almost doubled. The number of buyout/LBO deals dropped about 25% from 160 in 2017 to 119 in 2018, the number of M&A deals fell nearly 43% from 559 in 2017 to 323 in 2018, and the number of IPOs also fell nearly half from 19 in 2017 to 11 in 2018. With the average M&A deal size almost doubled from $261.35 million to $491.50 million, it is reasonable to believe it is more difficult to find buyers for the established companies.

2

Autonomous driving developers need much more funding, autonomous truck becomes the hype, and there is little room for new entrants.

Six times more capital was invested into autonomous driving developers in 2018 ($7.82 billion) than in 2017 ($1.17 billion). About half of the funding was spent on later-stage VC deals ($3.39 billion), and the average deal size grew dramatically from $48.14 million to $1.69 billion. On the other hand, the accelerator/angel/seed stage deals dropped half from 33 deals to 18 deals with a similar deal size. This trend indicates that there is little room for new entrants, while more funding will be needed to support the late-stage companies to develop a practical product.

key findings

3

Perception is the key domain that attracts the most embedded software/hardware developers, and no one dominates yet.

Among the 85 deals for embedded software developers, 36 deals were closed for companies working on perception in 2017 and 2018. Following that, 17 deals were completed by companies working on mapping, and 14 for companies working on localization. Most of the perception solution developers are still in its early stage. 31 of the 36 deals from the past two years were early-stage deals (seed/angel/accelerator/grant/early-stage VC) with a total funding of $172.80 million and an average deal size of $8.85 million. For the embedded hardware developers, 39 out of the 50 deals were closed for companies working on sensors that help to improve perception with 28 deals closed for companies developing LiDAR. The LiDAR developers have raised $712.72 million in funding, and the average deal size for LiDAR developers was about $40.71 million in 2018.

4

The battle among transportation service platforms has not ended yet.

This segment has attracted the most significant portion (28.39%, $34.61 billion) of the total funding into the industry. Though the market has already been dominated by some large players such as Uber, Lyft, Didi Chuxing, Hertz, Avis, two times more funding has been invested in this segment. The established companies raised funding to get more market share, while new companies raised funding to steal share and grow the market by targeting specific customer segments such as commuters. The average deal size doubled from $97.87 million to $252.65 million.

For the ride-sharing platforms, to expand or not is a question. According to Lyft, only 1% of the vehicle miles travelled (VMTs) in the US was made by ride-sharing platforms. This means a huge market to grow. However, expanding the existing market could also mean fewer resources allocated to autonomous driving: Uber exited several international markets and the autonomous truck market and tries hard to focus on autonomous cars, while Didi Chuxing tries hard to expand internationally and has been left behind in developing autonomous vehicles.

5

Scooter-sharing becomes a hype, but it will just stop there.

In 2017 and 2018, $595.73 million from 36 deals were invested into 21 scooter-sharing platforms. 7 companies received 79.56% of the total funding, and integration has already started. There will be little room for new entrants. On the other hand, given the low market barrier, the profitability of scooter-sharing business has long been questioned. Seeing the "failure" of the two largest bike-sharing platforms, investors may worry about the future of scooter-sharing platforms.

key findings

6

With a low entry barrier, the mobility-related service market is already saturated.

The total number and deals dropped half in this segment, while the total funding cut 57%. From information platforms for traffic, road, weather conditions to marketplaces for driver booking, parking services, and roadside assistance services, companies have been making finding information and services much easier than before. However, the market barrier is very low, the competition is intense, and the market is getting saturated in some domains. Investors only made 2 deals into the new companies, while they closed 21 deals in 2017. For the early-stage established companies, investors also cut their funding by half.

7

The vehicle service providers are growing and competing heavily.

This sector has attracted the fourth most substantial portion (14.57%, $17.76 billion) of total funding. Companies are improving traditional services (e.g. cleaning, maintenance, repair, dealership) by digitalizing (e.g. E-commerce for new cars and used cars) and using different models (e.g. O2O repair, mobile fuel-adding). Companies are also providing new services (e.g. vehicle charging service, connected car cloud, remote assistance, cyber-security monitoring/protection platform, real-time vehicle condition monitoring) to cater the new needs of fleet owners and vehicle owners.

8

Automotive manufacturing is shrinking with limited innovation and a high volume of M&A activities.

In the auto parts manufacturing/distribution segment, 374 out of the 592 deals were M&A or buyout/LBO deals. In the automobile manufacturing segment, about half of the deals (85 deals) were closed by traditional non-EV manufacturers with 33 deals being M&A or buyout/LBO deals. Therefore, the average deal size was very high in automobile manufacturing ($318.95/$712.00 million in 2017/2018) and auto parts manufacturing ($315.50/$320.50 million in 2017/2018). Furthermore, most of the innovations in these two segments were not disruptive and would not bring dramatic changes to the industry.

instruction

Information source: all the deal information are obtained from Pitchbook by searching "automotive" industry and deals/companies containing related keywords (e.g. "autonomous driving", "autonomous vehicles", "autonomous cars")

Deals excluded: "Bankruptcy" and "Out of Business" deals are not included. Since VC firms care most about what to invest and how to exit, the report does not cover the deals about bankruptcies.

Time span: The report covers deals that happened between Jan 1, 2002 and Dec 31, 2018. However, only the deals happened between Jan 1, 2017 and Dec 31, 2018 are categorized and examined in detail.

Categories that are not fully covered: for the categories "Advanced Feature Developer", "Industry Technology/Service Provider", "Alternative Mobility Solution Developer", some deals may not be covered since those companies are not in the automotive industry. Therefore, the numbers may not reflect the trends in these three segments accurately. Please refer to other reports on these topics for further information.

Categorization: in some cases, a deal can be categorized into one or another segment. Therefore, there is not a clear line between some categories. The report has tried to categorize all deals as accurate as possible.

Data availability: for some segments/verticals, the average deal size could be inaccurate due to a small sample size. In some cases, the average deal size can be different from the result of total funding divided by total deal number. The reason is that some deals do not have funding information, and the "average deal size" will only take those deals with funding information into consideration.

January 10, 2019

Disclaimer

index

02 Stats
04 Definition
06 Quick takeaways
08 Key findings
11 Instruction

13 Trends

14 Transportation Service Platform Operator/Developer
20 Full-stack Mobility Solution Developer
23 Embedded Software Developer
25 Embedded Hardware Developer
27 Vehicle Service Provider
29 Mobility-related Product/Service Provider
28 Automobile Manufacturer
32 Auto Parts/Accessories Manufacturer/Distributor
33 Motorcycle/Bicycle Manufacturer/Distributor
35 Advanced Feature Developer
36 Industry Technology/Service Provider
37 Alternative Mobility Solution Developer

39 Data

trends

Transportation Service Platform Operator/Developer trends+

Transportation service platforms are attracting the largest portion of funding in the industry in 2018. In 2018, the segment received $34.61 billion (28.39% of total) funding, almost tripling from $13.60 billion (11.86% of total) in 2017.

Most of the funding went into later stage deals. Most of the industry growth came from the later-stage VC deals: there were 12 later stage VC deals ($1.83 billion) in 2017, while there were 34 deals ($15.60 billion) in 2018. Meanwhile, corporate financing also doubled from $0.56 billion in 2017 to $1.14 billion in 2018.

Ride-sharing: established ride-sharing platforms are still facing fierce competition and low profitability.

Established platforms still need a lot of money due to the fierce competition. 116 out of the 494 deals in 2017-2018 were about ride-sharing platforms. These platforms raised $38.90 billion, which was 80.68% of the total $48.22 billion funding into the transportation service platform segment. Uber, Didi Chuxing, Lyft, Grab, and Ucar five companies alone have raised $34.69 billion (89.18% of the $38.90 billion into ride-sharing platforms) through 18 deals. The average deal size was $1.93 billion.

With a low market entry barrier, the ride-sharing businesses have very low profitability. According to Bloomberg, Didi Chuxing lost $585 million in the first six months of 2018 with a 1.6 percent gross margin. However, these established platforms need to compete locally with new local platforms and internationally with the other big players. Therefore, they need more capital to win the battle before they can generate profit themselves.

Integration is still on. In September 2017, Daimler acquired German P2P carpooling startup Flinc. In January 2018, Didi Chuxing acquired 99 Taxi for $1 billion to compete with Uber in the LATAM market. In February 2018, Bosch acquired B2B rideshare startup SPLT. In March 2018, Grab purchased Uber's Southeast Asia business. In April 2018, French ride-sharing giant BlaBlaCar acquired Less, a Paris-headquartered carpooling app that launched in beta just four months ago.

Higher safety/service quality is demanded, and car ownership is the key. Back to its early days, Didi Chuxing, the largest ride-sharing platform in the world, was almost competing with public transit with its low fare. Today, a price war would not help either party but hurt all, and consumers demand higher safety/service quality after many accidents/disputes happened. Many premium ride-sharing platforms grew up to meet this demand. However, it is eventually the car ownership that matters: by owning the cars, platforms can have more

flexibility to meet the dynamic demand, have better control of the drivers and in-car experience, and charge a higher price for the better service provided. On the flip side, owning cars is also dangerous due to the high upfront investment and low scalability.

Ride-sharing: to expand or not? It's a question.

According to Lyft, only 1% of the total vehicle miles traveled (VMT) in the US are made with ride-sharing platforms. This means a huge market growth potential. However, in the ride-sharing market, expansion and shrinking are happening simultaneously. By acquiring a local platform 99 Taxi, Didi Chuxing expanded its business to LATAM and plans to go further to Australia and New Zealand. While Uber's business has been shrinking due to the competition of local platforms: Uber exited Russian market in 2017 and Southeast Asia market in 2018.

The different directions reflect the companies' strategies. Uber has been allocating rich resources on autonomous driving and been a leader in this technology, while Didi Chuxing has been expanding its ride-sharing business and addressing safety challenges with little progress in autonomous driving. Lyft is leaning more towards the first direction: expanding slightly and putting massive resources on building the autonomous driving platform.

Ride-sharing: new platforms are targeting particular customer segments.

Ride-sharing platforms for commuters. There are many new platforms targeting commuters: Swvl, Urbvan, Busup, Carporate, OurBus, Youii, Scoop Technologies, Zify, Klaxit, VuLog, Shuttl, ZipGo. By offering a strategic network of routes with vans or shuttle buses, these platforms enable riders heading in the same direction to share a ride during rush hours, saving time and money for all.

Ride-sharing platforms for specific demographics. There are three platforms designed for kids/students: HopSkipDrive, Swifte, and Zum. Besides, See Jane Go is a ride-sharing platform exclusively for women passengers, and Zeelo is designed to serve people going to the same event.

Ride-sharing: platform technology developers are not facing much competition. Several ride-sharing technology developers that are selling their platforms to bus operators, taxi operators, and other mobility providers to help them digitalize. They are competing by offering more efficient route planning, dispatching, real-time routing algorithms. Given the large number of public transit operators waiting for digitalization in the world, the

competition in this segment is not strong. The active technology developers include Via, Optibus, Ridecell, Flit, Envoy (for communities), and QRoutes (route planning only).

Scooter-sharing: it becomes a hype. $595.73 million from 36 deals (out of 494 deals in this segment) in the past two years were about scooter-sharing platforms.

High concentration – 7 companies raised 79.56% of the total capital. Most of the scooter-sharing companies were early-stage companies except for Bird, Cooltra, and Scoot. Among the other companies, four companies closed large-size deals (>$10 million): Cityscoot ($49.44 million, Feb 2018), Tier Mobility ($31.46 million, Oct 2018), Voi ($50 million, Nov 2018), Wind Mobility ($22 million, Nov 2018). These seven companies together have raised 83.67% of the total funding into scooter-sharing platforms. For the other companies, the average size of deals was about $2.89 million.

Companies grow extremely fast. Bird raised its seed round of $3 million in June 2017, while the company raised 3 more rounds of $265 million in February, March, June 2018. Cooltra also closed two rounds with $17.83 million funding in the same year. Besides, Felyx, which operates scooter-sharing in Amsterdam, also raised three rounds with $4.33 million in 2018. Voi, which operates in multiple European countries, raised three rounds for $52.9 million funding in 2018.

M&A already begins. In November 2018, Ford acquired Spin for $100 million. Transitioning into a mobility leader, Ford has been acquiring start-ups from ride-sharing (Chariot), autonomous driving (Argo AI), to Spin. In China, Meituan Dianping, a food delivery and restaurant review company, acquired Mobike – the largest bike-sharing platform in the world, for $2.7 billion in April 2018. Didi Chuxing, the world's largest ride-sharing platform, has also been trying hard to acquire Ofo, another large bike-sharing platform in China.

Profitability is still a challenge. According to TechCrunch, a single Bird scooter costs about $400. If each Bird scooter has a lifetime of 300 rides at an average of 25 minutes apiece and consumers charge the scooters themselves 50% of the time (it costs the company $20 to charge a scooter vs. the $5 that Bird pays users for charging it themselves), Bird will break even on a single scooter after 220 rides. That's $147 of profit or a 10.3% profit margin. If a single scooter's lifetime is 500 rides with an average ride duration of 20 minutes, Bird could break even after 165 rides with an $813 profit per scooter, or a gross margin of nearly 41%.

However, similar to ride-sharing and bike-sharing, there is a low entry barrier for the scooter-sharing business. The scooter-sharing platforms will undoubt-

edly face fierce competition since new companies will join at any time. The price will drop, and the time before break-even will become longer due to the diluted market share.

The future of scooter-sharing is limited. The future of bike-sharing or scooter-sharing is much limited compared to the traditional ride-sharing business. The ride-sharing companies such as Uber, Lyft, and Didi Chuxing can reduce cost dramatically by leveraging autonomous driving technology and invent new revenue stream by providing in-car service or car-related services/products such as insurance and financing. However, bike-sharing or scooter-sharing cannot do any of these.

Based on the development of bike-sharing, we can predict that the most possible exit for scooter-sharing platforms will be an acquisition from **(1) mobility companies that need a last-mile solution to connect users to cars/buses/trains; (2) other platform companies that need to connect users to their shops/restaurants/offices, etc.**

Bike-sharing: it comes to its end. Having not found a sustainable business model after three years, Mobike and Ofo, the two largest bike-sharing platforms in the world, almost failed in 2018. Mobike was acquired for $2.7 billion in April 2018 by Meituan Dianping, a Chinese food delivery and restaurant review company. Ofo is facing 10 million users waiting to get their deposit back. People believe that bike-sharing can be a supplementary service to help companies connect people to their places/services, while bike-sharing itself cannot become a sustainable business.

Car rental: the market is crowded and experiencing integration. Car rental is not a new business, and the market has long been dominated by several large national and international players with millions of local players.

New companies are entering this market. Except for the capital barrier, the market entry barrier is low. There are 117 deals for the car rental market, which is higher than any other segment. Among the 117 deals about car rental companies, there are 15 accelerator/angel/seed/grant deals and 6 early-stage VC deals, and the percentage of early-stage deals are also higher than average.

New business models are being invented. Besides offering a wider selection of models or meeting special needs (e.g. wheelchair accessible vehicles, recreational vehicles, limousines, trucks), new companies are also trying to invent new business models to differentiate themselves. Some interesting business

models include:

Car rental subscription: users can switch to any car on the platform at any time. (Carma Car, Cluno, Drover)
Car-renting as a financial product: users pay a deposit to rent a car for free. (Freecars)
Autonomous electric car rental: the company provides autonomous electric car for city tours. (Live Electric Tours)
Tesla-only car rental (White Car)

The segment is experiencing a high volume of M&A. Among the 117 deals for car rental companies, there are 49 M&A and 7 buyout/LBO deals. Larger companies acquire smaller companies to increase market share, enter the mobility industry (e.g. Daimler buys Car2Go) and provide more rental options or related services. The average size for M&A deals was about $150.02 million in 2018 and $122.53 million in 2017.

Car sharing: it is still in the early stage, and no company dominates the market. Comparing to car rental, car sharing focuses on shorter trips and mobile service. Users can rent and return the car at any time and any place. 30 out of the 49 deals in this segment in 2017/2018 were early-stage deals (seed/angel/accelerator/grant/early-stage VC).

P2P car sharing is rising. Many new platforms are using a P2P model to enable car sharing instead of purchasing the cars themselves. Companies using this model include Car & Away, ForestCar, FriendyCar, Evee, Carhood, HyreCar, RideLink, Drivezy, Car Next Door, TravelCar, Cars Hare Ventures, BeeRides, Yago.

Notably, three of these companies (Car & Away, TravelCar, and BeeRides) are helping people to save parking fees at airports by renting out their cars.

Besides, it is interesting to see Hyrecar's fast growth: it raised its angel funding of $1.65 million in November 2017, then raised its PE growth funding of $4.47 million in April 2018, and the company went public in NASDAQ and raised $12.6 million in its IPO in June 2018.

Early-stage companies are raising money to expand. Early-stage companies that have been established for two or three years are actively raising money to grow the market and increase market share. Beijing TOGO raised $63.81 million in four rounds during the past two years. Like Chuxing and MyDadao raised two rounds in 6 months in 2018.

Transportation Service Platform Operator/Developer

OEMs are acquiring companies. With the ambition to transition into mobility companies, OEMs are actively buying companies in all mobility-related verticals. Hyundai put money into Car Next Door. Daimler sold its Croove and bought DriveNow from BMW.

Transportation service provider: new companies cater niche demands. Among the 105 deals related to transportation service providers in 2017 and 2018, only 21 deals were early-stage deals (seed/angel/accelerator/grant/early-stage VC), and 69 deals are M&A, buyout/LBO or IPO. This market is already saturated, while new entrants are trying to succeed by catering niche demands. For example, four companies (ESahai, Prime Care Transportation, RoundTrip, SafeRide) are developing on-demand medical transportation platform, Cabin is offering overnight travel experience with private sleeping cabins, Tesloop is offering inter-city travel service with Tesla vehicles, and Line changes the bus into an event space (e.g. showroom).

Early-stage company watchlist

P2P car sharing platforms: Car & Away, ForestCar, FriendyCar, Evee, Carhood, HyreCar, RideLink, Drivezy, Car Next Door, TravelCar, Cars Hare Ventures, BeeRides, Yago
Subscription model for car rentals: Carma Car, Cluno, Drover
Car rental for free: Freecars

Full-stack Mobility Solution Developer

trends+

The competition gets into the middle stage, and it may be late for new entrants. The total funding went into this segment in 2018 ($7.82 billion) was six times larger than it was in 2017 ($1.17 billion). Developing autonomous driving technology is capital intensive, and companies may require much more fundings in the future before the technology is fully commercialized. Therefore, it is almost late for a new entrant (excluding new companies founded by veterans in this segment) to get into the market, since **(1) investors want to concentrate their capitals and (2) the competition is time sensitive.**

There were 18 super-early-stage (accelerator/angel/seed/grant) deals with $85.22 million funding flowing into the vertical in 2018, while there were 33 deals with $124.64 million in 2017.

In 2018, on the contrary, there were $4.58 billion flowing into the established companies, both early-stage and late-stage, representing a 1,500% and 100% growth from the numbers in 2017.

New players can enter the market by borrowing technology. Though it is late for new entrants to get into the market, new companies can still shorten the development process by licensing technologies from the established companies. For example, to get itself on the road, the new autonomous truck company Ike is licensing the basic technology from Nuro, an autonomous delivery vehicle developer, instead of building its own autonomous vehicle software stack. According to Wired, Ike estimates the license will save Ike about two years (and 50 to 60 employees' worth) of work.

Exit can be difficult for investors. There were only 3 M&A/Buyout/LBO/IPO deals out of 47 deals in this segment in 2018 and 4 out of 66 in 2017. There are several reasons for the small number of exit deals: **(1) OEMs have already completed a round of M&As two years ago; (2) the M&A deal size will be big and require a lot of capitals; (3) there is too much uncertainty for the autonomous driving development, which requires even more capital after the acquisition.** Therefore, investors should be ready for holding the company for 5 to 10 years when they decide to invest.

The deal size is much larger than before. In 2018, the average size for early-stage VC deals ($74.66 million) was more than three times of that in 2017 ($21.14 million), and the average size for later-stage VC deals ($192.54 million) was four times of the number in 2017 ($48.14 million). The rapid growing deal size indicates that autonomous driving technology developers may require much more funding than investors believed. Therefore, given the capitals needed and the difficulty for an exit in the short run, investors should think twice before investing in this segment.

Full-stack Mobility Solution Developer

Autonomous truck becomes the hype. With an extremely huge trucking market, the autonomous truck becomes the hype in 2017 and 2018 with 17 out of 19 deals being early-stage deals (seed/angel/accelerator/grant/early-stage VC). Uber (Otto) exited this market in mid-2018, and a handful of new companies founded by Otto alums entered this market: Kache.ai founded by Anthony Levandowski (Otto's co-founder); A stealth-mode company founded by Nancy Sun (Otto's engineer); Kodiak founded by Don Burnette (Otto's co-founder).

Other new companies (or companies raised their early funding) include Ike, Locomation, Einride, FABU, Inceptio Technology, Mars Auto, and Gatik AI. The established companies that raised funding in the past two years include Embark, TuSimple, Starsky Robotics, Tsintel Technology, and Idriverplus.

It is not difficult to understand why autonomous truck becomes an investment and entrepreneurship hype: **(1) the total addressable market is enormous; (2) there is more room left for new entrants compared to the passenger car market: the autonomous driving technology for trucks is quite different from that used for autonomous passenger cars (the vehicle, the content transported, and the operating environment are different), while most of the large players from Google, Uber, to GM Cruise are primarily focusing on passenger cars; (3) the technology is expected to be commercialized much earlier than the autonomous passenger cars since its use-case will be less complicated; (4) there might be less concerns from the general public since the autonomous trucks will be primarily used by industry users – shippers (e.g. Amazon, Walmart, BestBuy) and logistics companies (e.g. Martin Brower, Ryder) – to save logistics cost.**

Autonomous delivery vehicle market has not been saturated yet. With a big total addressable market (e.g. total # of food delivery orders per day * delivery cost), this market has only four active players: Nuro, Udelv, Starship Technologies, and Boxbot. Particularly, each of these four companies is not competing directly: Nuro is focusing on middle-range food delivery, Udelv focuses on middle-range grocery delivery, while Starship is targeting short-range food delivery (Boxbot has not released its product or demo yet).

In 2017, Nuro raised $92 million in a combination of Series A and Series A-1 venture funding, putting the company's pre-money valuation at an estimated $158 million.

Udelv is reportedly seeking $8 million of Seed 3 funding as of November 13, 2018, putting the pre-money valuation at $40 million. Earlier, the company raised $3 million of bridge funding on September 9, 2018, and $5 million of seed funding on April 10, 2018.

Starship raised $25 million of seed funding on June 7, 2018 and has raised $42 million in total funding to date.

Full-stack Mobility Solution Developer

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Boxbot raised $7.5 million of seed funding on June 4, 2018 and has raised more than $9 million in total funding to date.

Autonomous shuttle/bus is tricky. Several companies are developing autonomous shuttle/bus that will be operated in fixed routes in an open/closed area. This product is tricky since **(1) the technology required is similar to that used in passenger cars, and there are already a lot of developers in the passenger car vertical; (2) the total addressable market for shuttle/bus is much smaller than that for passenger cars.**

That being said, an autonomous passenger car developer can quickly adopt their technology onto shuttle/bus. For example, Baidu helps Kinglong, a Chinese manufacturer, to build autonomous bus very quickly with Baidu's Apollo platform and already puts it into volume production and commercial trials in several Chinese cities.

Therefore, it may not be an attractive idea to develop a sophisticated L4 autonomous driving system exclusively for shuttle/bus.

There are only 9 deals in the past two years with total known funding of $32.99 million. Companies have raised money in 2017 and 2018 include SB Drive (Softbank's autonomous driving subsidiary), May Mobility, Auro, aiPod, EasyMile.

Autonomous driving industry vehicles are not attractive to investors. With only 6 deals in two years, this vertical is not as hot as people once expected. Two years ago, some people viewed this as a good investment opportunity since the technical obstacles for mining vehicles, inspection robots, and other industry vehicles were much fewer than those for passenger cars or trucks. However, the market was also much smaller, which makes this vertical unattractive.

Early-stage company watchlist

Autonomous delivery vehicle developers: Udelv, Boxbot
Autonomous truck companies: Ike, Locomation, Einride, FABU, Inceptio Technology, Mars Auto, Gatik AI

The funding went into this segment in 2018 increased slightly from $291.53 million (2017) to $295.24 million. However, the number of deals dropped about 30% from 50 (2017) to 35 (2018).

Fewer early-stage deals mean lower attractiveness and confidence. In 2018, the number of super-early-stage (Accelerator/Angel/Seed/Grant) deals dropped more than 50% from 27 (2017) to 12 (2018). This drop indicates that investors are not as interested in this segment as before. The primary reasons may include: **(1) there are double risks since embedded software developers are suppliers to full-stack solution developers, which have high uncertainty themselves; (2) the potential exit is limited**: it is unlikely that OEMs would be very interested in acquiring the embedded software developers, and these companies might only be attractive to full-stack solution developers, which are early-stage start-ups themselves.

Perception is the key pain point. Among the 85 deals, 36 deals were closed for companies working on perception in 2017 and 2018. Following that, 17 deals were completed by companies working on mapping, and 14 for companies working on localization.

Since perception is the starting stage of the whole autonomous driving process (perception, localization, route planning, and vehicle control), the perception data quality will largely decide how difficult it would be for the other components to work. By integrating sensors differently, processing image with different algorithms, and using different fusion algorithms, these perception solution developers can help the full-stack solution developers save cost and increase development efficiency.

Most of the perception solution developers are still in its early stage. 31 of the 36 deals from the past two years were early-stage deals (seed/angel/accelerator/grant/early-stage VC) with a total funding of $172.80 million and an average deal size of $8.85 million.

Interestingly, the 31 deals were closed by 19 companies, and many companies raised multiple rounds in the past two years. This further proves that investors are stopping investing in new embedded software developers but keep supporting the existing ones. The companies raised multiple rounds include Algolux, CANVAS Technology, DeepScale, Machines With Vision, Momenta (it develops perception, mapping, and route planning solutions), OURS Technology, PerceptIn, Vayavision, and Zongmu (it develops perception and localization solutions).

New opportunities are being found but wait to be validated by the market. With the slow development of full-stack solutions, people realize that full-stack developers have some other pain points. For example, the full-stack developers do not have enough resource to

annotate the collected road images to train their algorithms. For another example, the full-stack developers could not predict human behavior and increase safety. Therefore, some new companies were created to address these pain points.

These companies include:

Data annotation: Understand.ai, Deepen AI, Scale Labs
Autonomous driving framework/operating system: Apex.AI
Human behavior/risk prediction: Humanising Autonomy, Perceptive Automata, Predina
Simulation and software validation: Parallel Domain, Latent Logic, Cognata, Applied Intuition, Metamoto, Cognata, RightHook

Early-stage company watchlist

Perception: Vayavision, PerceptIn, Calmcar, Lirhot, Intesight
Data annotation: Understand.ai, Deepen AI
Human behavior/risk prediction: Humanising Autonomy, Perceptive Automata, Predina
Simulation and software validation: Parallel Domain, Latent Logic, Cognata, Applied Intuition, Metamoto, Cognata, RightHook
Algorithm training platform: Mighty AI

Embedded Hardware Developer

There are 50 deals in this segment in the past two years with total funding of $891.68 million. Overall, the number of deals decreased slightly, while the average deal size grew. Most of the companies in this segment are in their very early stage. Particularly, 39 out of the 50 deals were closed for companies working on sensors that help to improve perception.

Perception is the key pain point again. Similar to the embedded software developers, most of the developers in this segment are working on improve perception. The full-stack solution developers are facing challenges when using the existing sensors. For example, the existing LiDAR products have several disadvantages such as the short detection range (<150m in a production environment) and high cost. For example, the existing sensors cannot work well in difficult driving conditions including darkness, rain, mist, and dust. Therefore, the embedded hardware developers invent new types of LiDAR, radar, camera, and other sensors to improve the data accuracy and capture efficiency.

Among the 50 deals, 28 deals were closed for companies developing LiDAR. This is not surprising since Velodyne, the biggest LiDAR supplier, has not provided a perfect solution for commercial use yet. The LiDAR developers have raised $325.67 million in 2018, and the average deal size for LiDAR developers was about $40.71 million.

A list of active early-stage LiDAR (or LiDAR-like product) developers includes Aeva, Abax Sensing, Blackmore Sensors and Analytics, Blickfeld, Cepton Technologies, Hesai, Innoviz Technologies, Innovusion, Mirada Technologies, Opsys Technologies, Nodar, and Ouster.

Besides LiDAR, other sensors such as radar, camera are also being developed by many companies. For example, Lunewave claims its radars can detect more objects in a wider field of view and at greater distances than existing products thanks to the unique properties of the Luneburg antenna and can work in poor weather conditions. Arbe Robotics says its synthetic aperture radar (SAR) system provides automotive real-time full 4D mapping and the ability to detect obstacle distance, velocity, and direction within a range of 300 meters in high resolution. TriEye is developing short-wave infra-red (SWIR) sensors that can have perfect sight under any lighting and weather conditions. WaveSense, is developing a ground-penetrating radar that helps autonomous vehicles stay in lane by utilizing data below the ground.

A list of early-stage non-LiDAR perception sensor developers includes Prophesee, Arbe Robotics, Echodyne, Lunewave, Hertzwell, WaveSense, Zendar, and TriEye.

Early-stage company watchlist

LiDAR (or LiDAR-like product) developers: Aeva, Abax Sensing, Blackmore Sensors and Analytics, Blickfeld, Cepton Technologies, Hesai, Innoviz Technologies, Innovusion, Mirada Technologies, Opsys Technologies, Nodar, and Ouster
Non-LiDAR sensor developers: Prophesee, Arbe Robotics, Echodyne, Lunewave, Hertzwell, WaveSense, Zendar, and TriEye

Vehicle Service Provider

There are 820 deals in this segment in the past two years. 294 deals were about car dealers, 222 deals were about car repair/maintenance/restoration/preparation/wash, 147 deals were about E-commerce platforms or online marketplaces for vehicles, auto parts, and maintenance services, and the other deals were about vehicle customization, vehicle condition tracking, connected car platforms, and other services such as cybersecurity protection platform.

Car dealers attracted the most funding, but there is no new entrant. The total known funding went into car dealership was about $7.94 billion with an average deal size of $152.71 million. Among the 294 deals, no deal was early-stage deals (seed/angel/accelerator/grant/early-stage VC) as this vertical has been established for many years.

E-commerce platforms and marketplaces are crowded, particularly in China. Different from traditional car dealers, the e-commerce platforms and marketplaces completed 147 deals with 78 early-stage deals (seed/angel/accelerator/grant/early-stage VC). There is a fierce competition in this vertical since the market entry barrier is relatively low while the market can be huge. Within the 78 early-stage deals, 10 were closed for auto parts E-commerce/marketplaces, 4 were raised for car repair/maintenance services marketplaces, while the rest 64 were closed for E-commerce/marketplaces of vehicles including cars, trucks, commercial vehicles.

As one of the world's largest auto markets, China has closed 29 deals, most of which were late-stage deals, for 18 companies. The total known funding went into these Chinese companies was about $6.10 billion with an average deal size of $217.92 million, while the total funding into this segment was about $11.82 billion with an average deal size of $103.72 million. Therefore, the next early-stage opportunity in this segment is not in China.

Traditional services are moving online. 28 deals were closed for other types of online service platforms from car information platforms to even petrol delivery platform. It is not surprising to see the digitalization of traditional car-related services: car financing/insurance are becoming fully online and paperless, while services such as car maintenance that cannot be completed online are adopting the O2O model. The new online service companies are competing by offering richer product features, lower fees, higher convenience, and higher service qualities. There is litter secret in this vertical, and it is difficult to build a high market barrier.

Electricity-related products/services are rising. With the growth of electric vehicles, there is a higher demand for electricity-related products/services. Companies offering

these products/services include charging network developers, charging station information platforms, and charging system developers. Total funding of $432.79 million was put into this vertical through 26 deals with an average deal size of $27.05 million. Among the 26 deals, 13 deals were early-stage deals (seed/angel/accelerator/grant/early-stage VC). Some interesting early-stage companies include:

EverCharge: helps to install charging stations in multi-tenant buildings
Fast Cities: develops an ultrafast electric vehicle charging network
Fermata Energy: develops vehicle-to-grid bi-directional chargers designed to enable electric vehicles to earn revenue while parked
ConnectMyEV: develops a smart charging system that eliminates the need for precise vehicle positioning and charges dynamically according to energy price
Engenie: develops a rapid charging system that can charge a car in less than 30 minutes. The company closed four deals in the past two years with total known funding of $9.06 million.
Driivz: develops a charging network management software
Fastned: operates a fast charging station that charges a car within 20 minutes

Connected car platforms and cybersecurity protection platforms are growing. In 2017 and 2018, there were 23 deals for connected car platforms and 6 deals for cybersecurity protection platforms. In the age of autonomous driving, there is no doubt that all cars will be connected to the cloud. Cars will be connected to send data about its condition, receive information, and get controlled by remote users. Given the high security requirement for V2X communication, it is crucial to address the cybersecurity challenges.

16 out of the 23 deals were early-stage deals with a total known funding of $41.63 million and an average deal size of $3.35 million. Since the demand is already there, it will not be difficult for investors of these companies to find an exit (e.g. acquired by OEMs, tier-1s, autonomous driving car developers, or IPO by the company itself) if the company has advanced technology.

All the companies in this vertical worth a look.

Early-stage company watchlist

Electricity-related products/services developers: EverCharge, Fast Cities, Fermata Energy, ConnectMyEV, Engenie, Driivz, Fastned
Connected car/cybersecurity protection platforms: Automatic, Autonet Mobile, Bright Box, CarBlock, CarForce, Connected Signals, Excelfore, Grupo Detector, Mojio, Olympus Sky, Perseus, TrueMotion, Upstream, Veturilo.

Mobility-related Product/Service Provider

72 deals were closed for companies in this segment during the past two years with 40 deals being the early-stage deals (seed/angel/accelerator/grant/early-stage VC). Most of the products/services developed by these companies are consumer-facing – for drivers and passengers.

Products/services are very diverse but have low market entry barriers. There are many types of products/services offered in this segment to improve drivers' and passengers' mobile experience. However, the technology involved in these products are generally low, and therefore the market entry barrier is not high. It is foreseeable that there will be fierce competition in a domain once it is proved to be promising. That being said, a first-mover advantage will be very important, and the economies of scale will matter a lot here (e.g. for marketplaces).

The major current development domains include: **(1) dashcams/head-up displays/other in-car monitoring devices; (2) information platforms for traffic, road, weather conditions; (3) marketplaces for driver booking, energy services, parking services, roadside assistance service, and valet services; (4) parking spaces; (5) voice control software; (6) on-demand refueling services.**

Notably, smart dashcam with AI/ML abilities to detect and prevent driver misbehaviors or accidents is attractive to many stakeholders (e.g. OEM, ride-sharing platforms, full-stake solution developers) since it can help collect road data and driver behavior data that could be valuable for other businesses. With only a few deals in the past two years, this vertical might be a good investment opportunity.

Early-stage company watchlist

WayRay: develops an AR-based navigation system
Nexar: develops dashcams designed to detect driving hazards and help prevent car accidents
Nauto: develops dashcams designed to detect driving hazards and help prevent car accidents
German Autolabs: develops a voice assistant for drivers
BraiQ: develops an AI platform that analyzes biometric information about passenger comfort as the vehicle travels, based on acceleration, braking, steering, to adjust autonomous driving style to improve the passenger experience

Automobile Manufacturer

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About half of the deals and funding were made into electric/hydrogen-powered vehicle manufacturers. Unsurprisingly, 87 out of 173 deals in this segment were closed for companies manufacturing vehicles using sustainable energy. The electric/hydrogen-powered vehicle manufacturers received $21.19 billion from the investors, while the other manufacturers got about $27.85 billion.

New companies enter the market regardless of the high capital barrier. Though there is an extremely high capital barrier of manufacturing automobile, 10 seed/angel/accelerator funding were closed in 2017, and another 10 seed/angel/accelerator deals happened in 2018.

With a vast customer base, the Chinese market generated the most early-stage deals for sustainable energy vehicle manufacturers. Among the 36 seed/angel/accelerator/early-stage VC deals for electric/hydrogen-powered vehicles, 14 deals were closed by 9 companies from China, 10 deals were closed by 9 companies from the US, 9 deals were closed by 8 companies from EU, and the rest came from 2 Indian companies and 1 Japanese company.

New entrants are targeting specific customer segments. To increase their chance of success, new sustainable energy vehicle manufacturers are positioning themselves strategically. They differentiate their products by offering new designs (e.g. small vehicles for one or two people), targeting different needs (e.g. delivery, safari, public transit, trucking), and providing new features (e.g. hybrid sustainable fuel system, solar-powered batteries, self-driving system, hydrogen-powered system, IoT connected platform).

The established companies require much more funding to develop a generally acceptable electric vehicle. In 2018, Nio, one of the earliest and largest electric car developers in China, got listed on New York Exchange. It raised $1 billion through its IPO. However, according to the feedback from the company's customers, Nio's product is not competitive with its ~250KM range.

Without solving the primary challenges, electric vehicle developers will still primarily compete in fuel technologies in the short run. Though new entrants are trying to target different needs and segments, the basic challenges remain the same: short commuting range and lack of charging facilities. Developers in this domain will primarily compete to solve the fundamental challenges.

Few new companies enter into traditional vehicle manufacturing. Among the 85 deals in 2017/18 for traditional vehicle manufacturing, there was only three seed/angel/accelerator/grant/early-stage VC deals: one was closed by Site Seven, which is a camper van

developer, and the other is closed by TAXA Outdoors, which is developing outdoor campers. Most of the other deals are debts or secondary transactions, and 33 of the 85 deals are buyout/LBO or M&As. Undoubtedly, the industry has matured for a long time, and it's shrinking through M&As.

Early-stage company watchlist

Lightyear: solar-powered family cars
Sono Motors: solar-powered family cars
Uniti: affordable electric city cars for 1-2 person
Riversimple: Hydrogen-powered cars

Auto Parts/Accessories Manufacturer/Distributor

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Investors are not bringing much new money into this segment. In 2018, the number of deals dropped 43.39% from 378 to 214, and the total funding raised dropped 41% from $41.33 billion to $24.36 billion. Particularly, most of the deals in this segment were M&A deals, which indicates a shrinking of the segment.

This segment is experiencing a high volume of M&A activities. 374 (63.18%) out of the 592 deals were M&A or buyout/LBO deals. The high amount of M&A and buyout/LBO activities indicates that the segment is shrinking and lack of growth.

There were few new entrants in this segment. Out of the 592 deals from 2017 and 2018, there are only 28 seed/angel/accelerator/grant/early-stage VC deals. Most of the new entrants are using new materials or unique designs to improve the performance of the existing auto parts. Most of the improvement was not revolutionary, and the innovation in this segment was therefore very limited.

Innovation in this segment is limited. Similar to the automotive manufacturing segment, this segment has limited innovation, which is not disruptive at all. Some innovation examples include smart tire (e.g. IntelliTire), auto parts e-commerce platforms (e.g. Oscaro.com), connected car devices (e.g. Nonda, Apollo, Oocar), and home-use charging units (e.g. Chargemaster).

Opportunities in this segment may come from the battery manufacturers. Given the high growth of electric vehicle manufacturing, it is reasonable to believe there will be a similar growth for battery manufacturers.

Early-stage company watchlist

IntelliTire: smart tires
Hyliion: electrify class 8 tractor/trailers to save fuel cost

Motorcycle/Bicycle Manufacturer/Distributor

The investment in this segment increased, but the total volume is small. The capital invested in motorcycle/bicycle manufacturing increased about 80% to $178.68 million in 2018. Most of the funding still went to the traditional motorcycle/bicycle manufacturers.

Scooter manufacturing is no longer atrractive. The number of scooter manufacturing deals dropped half in 2018. In 2018, 6 scooter manufacturers raised 7 rounds of funding, most of which were angel or early-stage VC funding, while 11 companies raised 12 rounds of funding in 2017.

New entrants are competing by offering unique features such as long commuting range, LED lights, and mobile applications.

Scooter manufacturing might have become saturated. Since the new features did not fundamentally change the scooters' functionalities, the new entrants will face fierce competition in this market.

Only three companies raised multiple rounds among the 15 companies raising funds in 2017/18. Given the capital-intensive feature of the manufacturing industry, it is necessary for the manufacturers to raise multiple rounds to develop and scale up. Unu has raised three rounds (the last round was a $12 million Series-B funding), while Scooterson and Cycleboard raised two small angel/product crowdfunding rounds each.

Electric bicycles/motorcycles became an investment hype in 2018. With 7 deals in 2017 and 16 deals in 2018, this domain was getting heated in the last year.

Both early-stage companies (e.g. Emflux and eMovements) and late-stage companies (e.g. Zero Motorcycles) are raising funding actively.

New companies are competing by adding unique features such as GPS, SOS service, theft protection, long commuting range, mobile application, IoT/cloud connectivity, and smart rear.

This vertical can be very competitive: Alta Motors died in 2018 after raising $33.26 million in February.

Companies providing services for electric bicycles/motorcycles are rising. For example, Swiftmile is offering a Personal Electronic Transporter (PET) sharing systems designed to make and deploy charging stations for electric scooters and electric bikes.

Motorcycle/Bicycle Manufacturer/Distributor

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The business model of last-mile mobility (e.g. scooter/bicycle) is uncertain. With the two largest bike-sharing businesses failed/acquired in China, people have not figured out a sustainable business model for last-mile mobility. The pain point does exist, while it's unclear whether consumers' willingness to pay (WTP) can be high enough to support a sustainable and independent business, given the high manufacturing cost of scooters/bicycles. Some investors believe the last-mile mobility could only be supplementary to the major mobility platforms and will not be profitable by itself. In some cases, last-mile mobility solutions can also be integrated into other businesses (e.g. O2O platforms) to attract traffic.

Early-stage company watchlist

None

Advanced Feature Developer

With 54 deals and total funding of $808.12 million (excluding **Mobileye**'s $15.3 billion acquisition deal), this segment is not as popular and crowded as some others. 27 deals were the early-stage deals (seed/angel/accelerator/grant/early-stage VC) with most of the early-stage companies focusing on ADAS, V2X system, and cybersecurity hardware/software for vehicles and sensors (excluding cybersecurity cloud platforms).

Early-stage company watchlist

Minieye: develops a driver assistance system
Derq: provides V2X communication technologies, ADAS, and driver behavior modeling
GuardKnox: develops cybersecurity hardware to detect and eliminate cyber threats in vehicles without any external connectivity nor updates
Regulus Cyber: develops hardware/software to protect cybersecurity of sensors

Industry Technology/Service Provider

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This is not a new and popular segment. Most of the companies in this segment are leveraging AI/ML/big data to help industry players improve efficiency or reduce cost. It is possible that some of the companies can find a big market. However, some technologies in this segment may not be as disruptive and valuable as those from the other segments, indicating a relatively low market barrier. Investments into this segment should be reviewed case by case.

Early-stage company watchlist

None

Alternative Mobility Solution Developer

Except for autonomous driving vehicles, people are also exploring alternative mobility solutions from drones, aerial vehicles, underwater vehicles, and hyperloop. It is difficult to predict the future of these alternative mobility solutions at this stage, given the early-stage status of the technologies and the high complexities of the infrastructure system. Before investing in these companies, it is essential to consider the low chance of short-term exit, the high probability of failure, and the high upfront investment these projects may require.

With a high uncertainty, this segment experienced a significant drop in 2018 in terms of total funding received and total deals closed. (Notice: it is possible that some deals are not covered in this dataset since it is focusing on automotive and ground mobility.)

Early-stage company watchlist

Arrivo: develops a super urban network (Hyperloop)
Corvus Robotics: develops in-door drones for warehouse inventory management
H2Drone: develops in-door drones for warehouse inventory management

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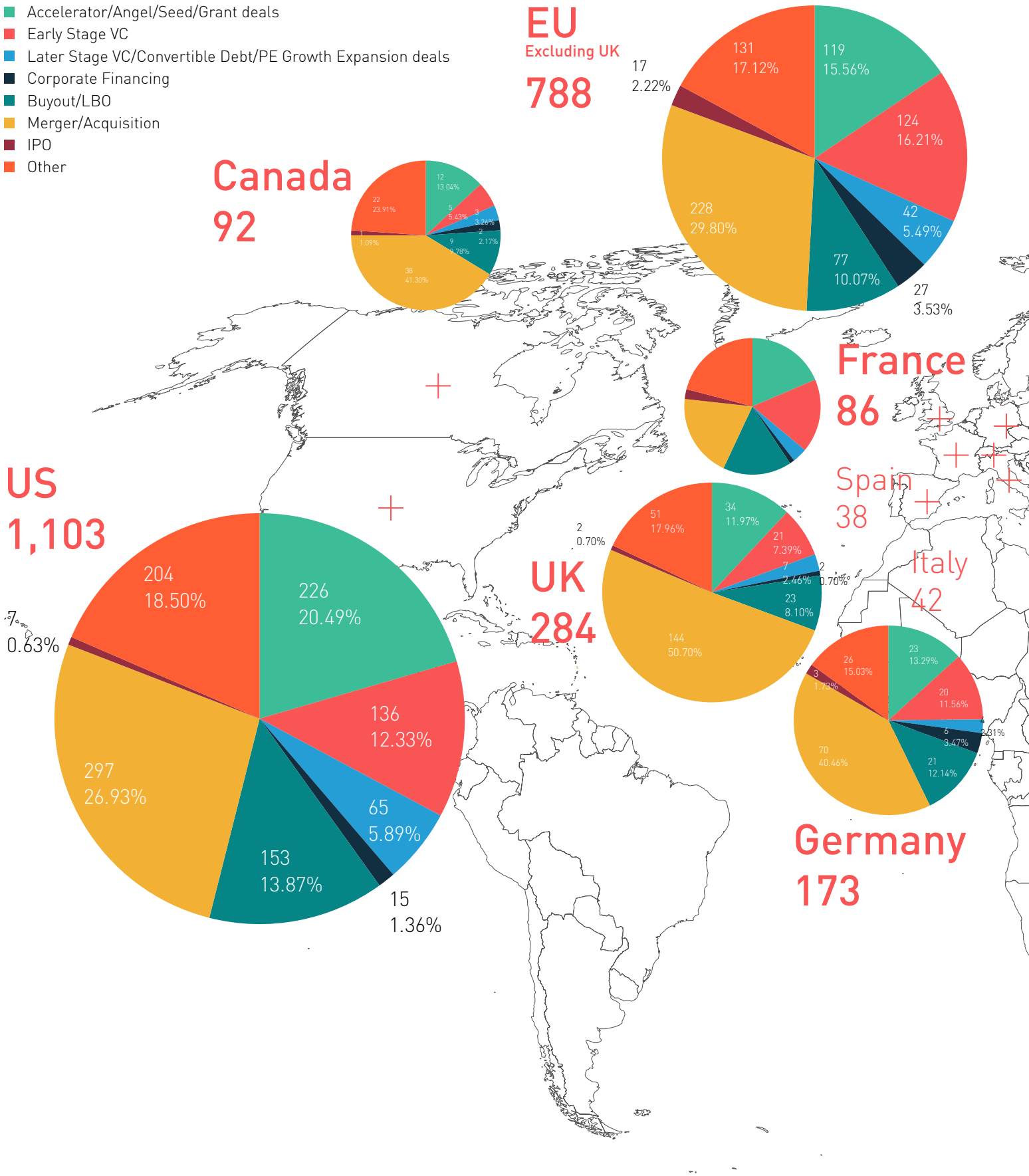
data

data

- Accelerator/Angel/Seed/Grant deals
- Early Stage VC
- Later Stage VC/Convertible Debt/PE Growth Expansion deals
- Corporate Financing
- Buyout/LBO
- Merger/Acquisition
- IPO
- Other



data

- Accelerator/Angel/Seed/Grant deals
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- Later Stage VC/Convertible Debt/PE Growth Expansion deals
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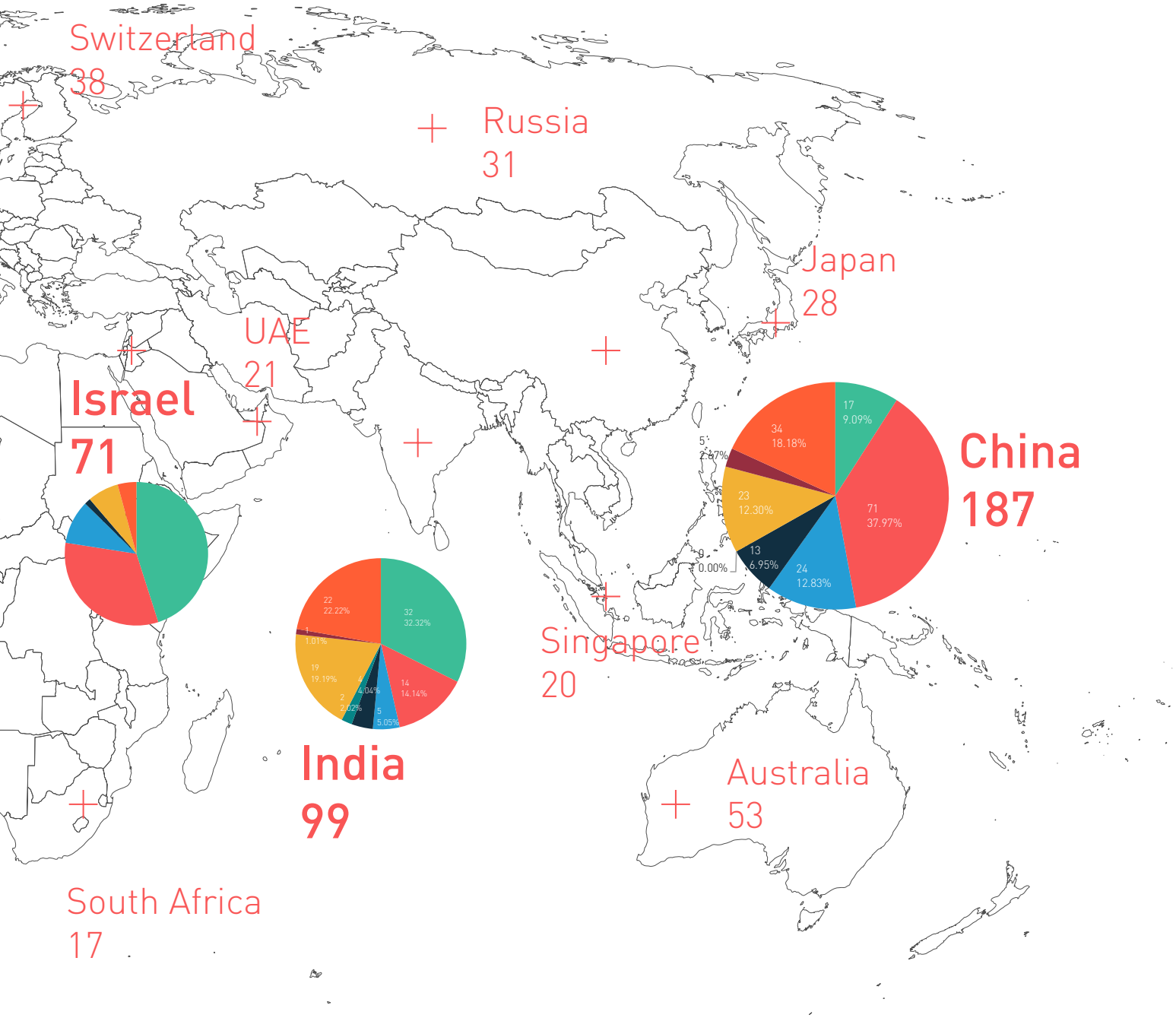
- IPO
- Other



data

- Accelerator/Angel/Seed/Grant deals
- Early Stage VC
- Later Stage VC/Convertible Debt/PE Growth Expansion deals
- Corporate Financing
- Buyout/LBO
- Merger/Acquisition
- IPO
- Other

2017 | 2018

Chart 1.3 Annual deals by stages

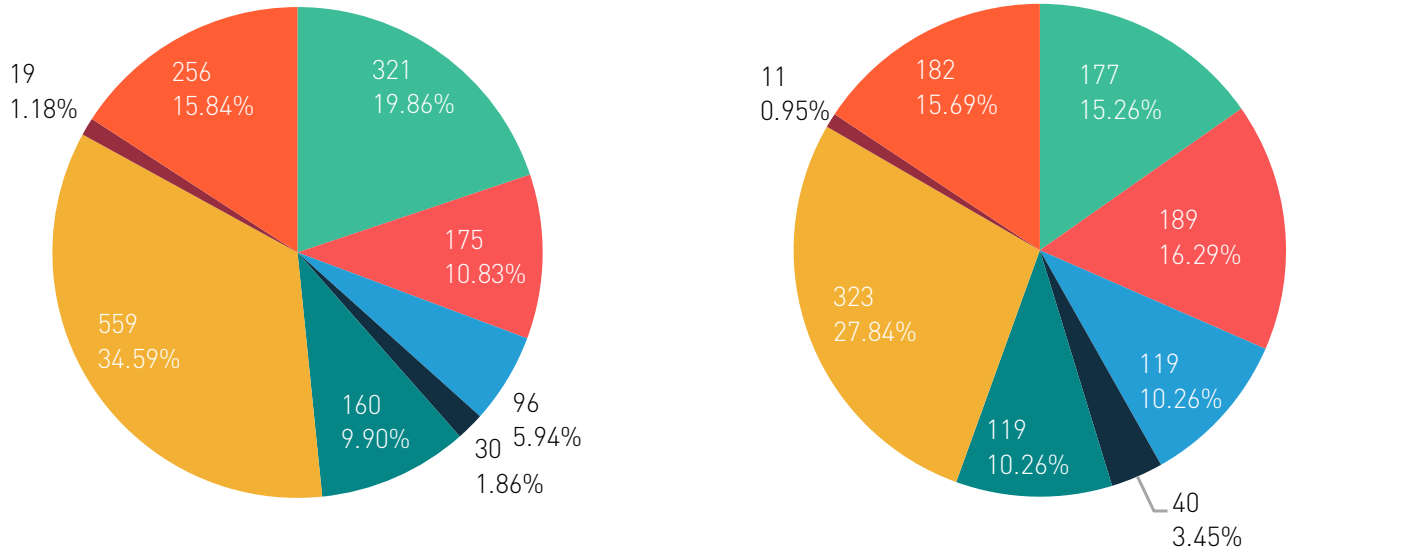
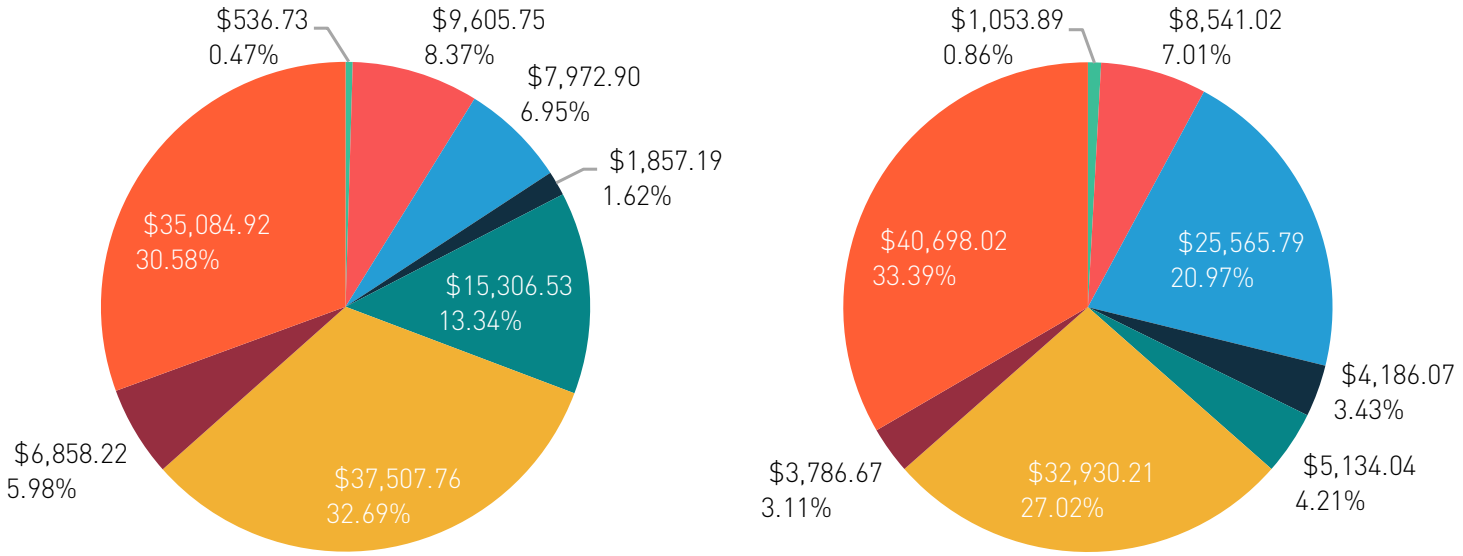


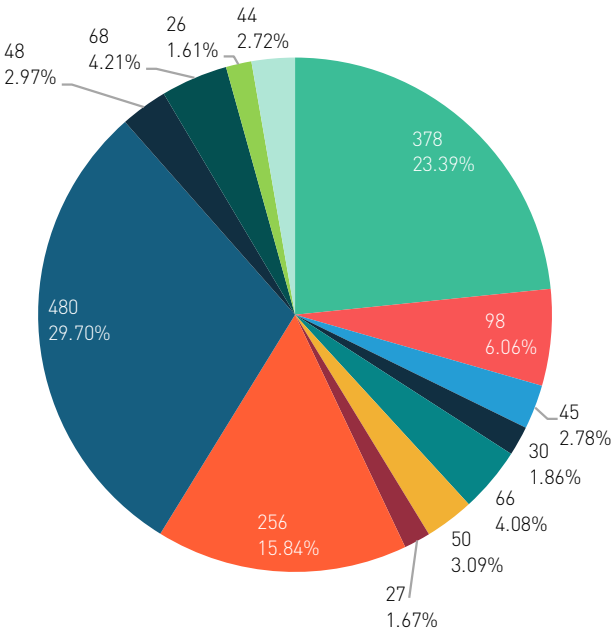
Chart 1.4 Annual funding by stages



- Auto Parts/Accessories Manufacturer/Distributor
- Automobile Manufacturer
- Motorcycle/Bicycle Manufacturer/Distributor
- Advanced Feature Developer
- Full-stack Mobility Solution Developer
- Embedded Software Developer
- Embedded Hardware Developer
- Transportation Service Platform Operator/Developer
- Vehicle Service Provider
- Mobility-related Product/Service Provider
- Industry Technology/Service Provider
- Alternative Mobility Solution Developer
- Other

2017 | 2018

Chart 1.5 Annual deals by categories



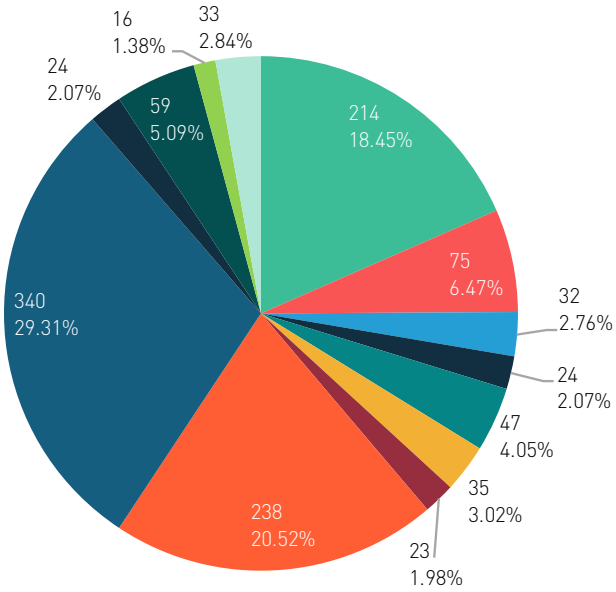
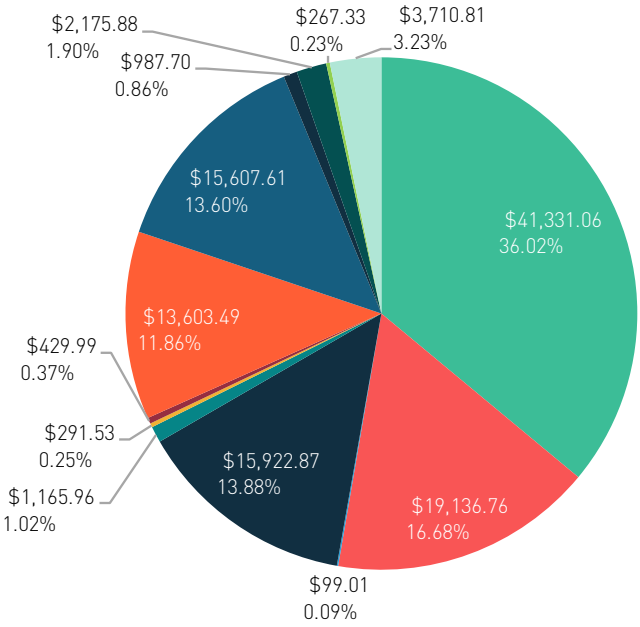
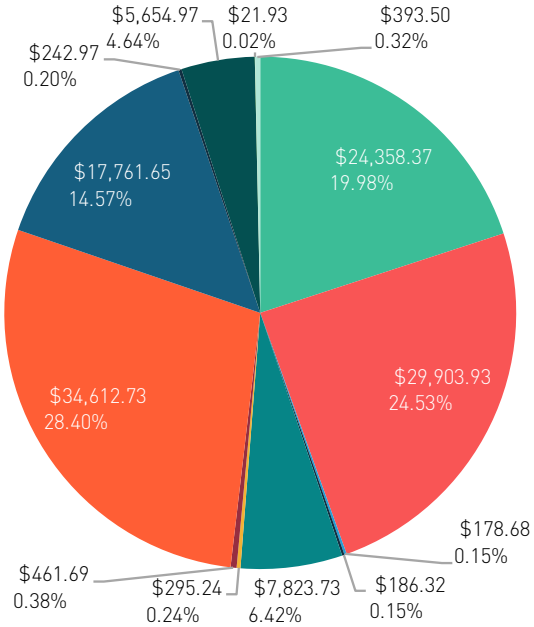


Chart 1.6 Annual funding by categories





Transportation Service Platform Operator/Developer

data+

Transportation Service Platform Operator/Developer

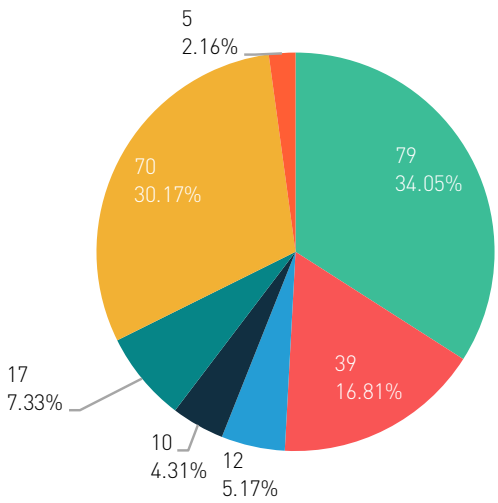
Definition: Developers or operators of transportation service platforms that provide services directly to passengers or connect service suppliers and passengers
Typical customers: consumers, shippers, logistics companies
Examples of products/services: ride-sharing platform, car-sharing platform

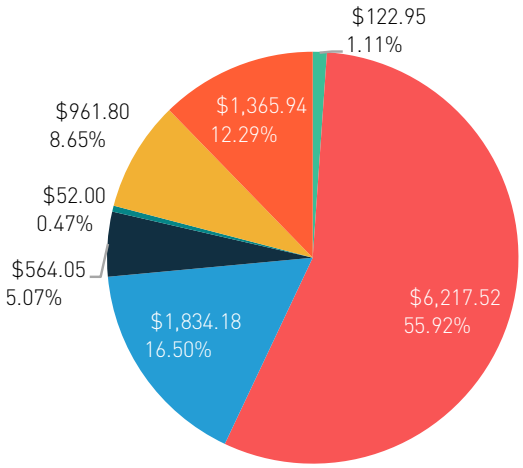
- Accelerator/Angel/Seed/Grant deals
- Early Stage VC
- Later Stage VC/Convertible Debt/PE Growth Expansion deals
- Corporate Financing
- Buyout/LBO
- Merger/Acquisition
- IPO

Deal distribution[1]

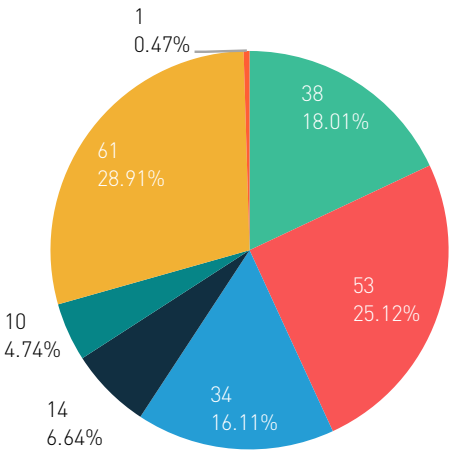
Funding distribution[2]

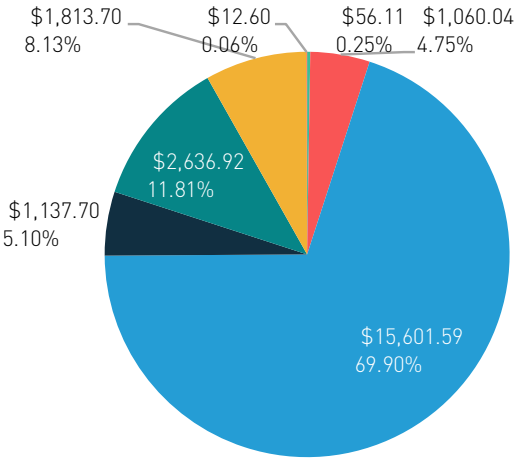
2017





2018





[1][2] deals not belonging to these categores are not included.

+data

Transportation Service Platform Operator/Developer

	2017	2018
$ Total capital raised (M)	**$13,603.49**	**$34,612.73**
# of deals	**256**	**238**
$ Average deal size (M)	**$97.87**	**$252.65**
Deal stats by type		
Accelerator/Angel/Seed/Grant		
# of deals	79	38
$ of deals (M)	$122.95	$56.11
$ Average deal size (M)	$2.20	$2.44
Early Stage VC		
# of deals	39	53
$ of deals (M)	$6,217.52	$1,060.04
$ Average deal size (M)	$182.87	$24.65
Later Stage VC/Convertible Debt/PE Growth Expansion		
# of deals	12	34
$ of deals (M)	$1,834.18	$15,601.59
$ Average deal size (M)	$152.85	$520.05
Corporate Financing		
# of deals	10	14
$ of deals (M)	$564.05	$1,137.70
$ Average deal size (M)	$112.81	$142.21
Buyout/LBO		
# of deals	17	10
$ of deals (M)	$52.00	$2,636.92
$ Average deal size (M)	$26.00	$659.23
Merger/Acquisition		
# of deals	70	61
$ of deals (M)	$961.80	$1,813.70
$ Average deal size (M)	$64.12	$139.52
IPO		
# of deals	5	1
$ of deals (M)	$1,365.94	$12.60
$ Average deal size (M)	$341.49	$12.60

Transportation Service Platform Operator/Developer

data+

verticals

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Transportation Service Platform Operator/Developer

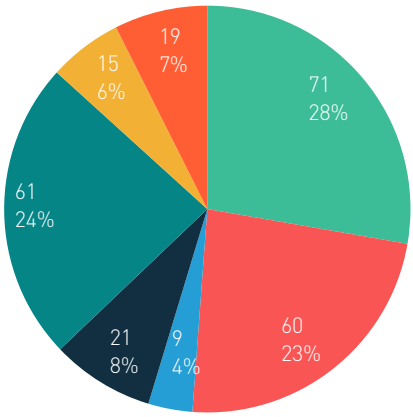
Transportation Service Platform Operator/Developer

Definition: Developers or operators of transportation service platforms that provide services directly to passengers or connect service suppliers and passengers
Typical customers: consumers, shippers, logistics companies
Examples of products/services: ride-sharing platform, car-sharing platform

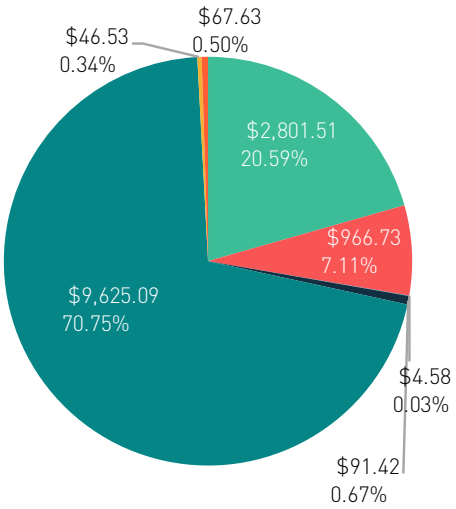
- Car rentals
- Transportation service provider
- Taxi-booking
- Car-sharing
- Ride-sharing
- Scooter-sharing
- Other

2017

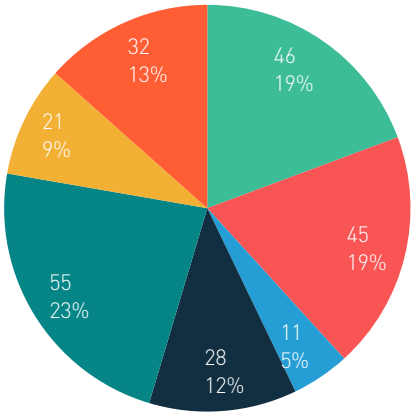
Deal distribution[1] by vertical

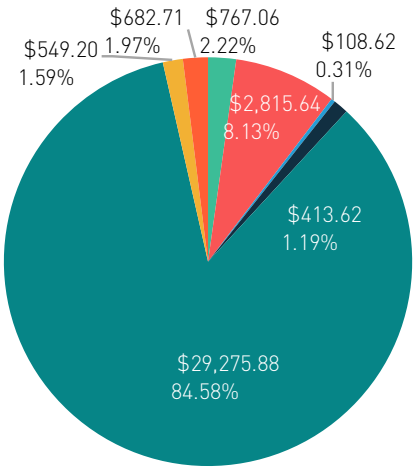


Funding distribution[2] by vertical



2018





[1][2] deals not belonging to these categores are not included.

Transportation Service Platform Operator/Developer

data+

Vertical		Car rentals	Transportation service provider	Taxi-booking	Car-sharing
$ Total Capital Raised (M) 2018		$767.06	$2,815.64	$108.62	$413.62
$ Total Capital Raised (M) 2017		$2,801.51	$966.73	$4.58	$91.42
# of Deals 2018		46	45	11	28
# of Deals 2017		71	60	9	21
$ Average Deal Size (M) 2018		$40.37	$134.08	$21.72	$25.85
$ Average Deal Size (M) 2017		$84.89	$40.28	$2.29	$5.38
Accelerator/Angel/Seed/ Grant	# of deals 2018	3	8	0	4
	# of deals 2017	17	7	3	10
	$ (M) 2018	$0.13	$2.46	$-	$8.72
	$ (M) 2017	$86.00	$9.09	$0.07	$5.21
	$ Average (M) 2018	$0.13	$0.41	$-	$2.91
	$ Average (M) 2017	$5.73	$1.52	$0.07	$0.58
Early Stage VC	# of deals 2018	6	4	1	11
	# of deals 2017	6	2	0	5
	$ (M) 2018	$46.05	$84.65	$0.30	$103.78
	$ (M) 2017	$94.60	$2.81	$-	$54.65
	$ Average (M) 2018	$9.21	$28.22	$0.30	$12.97
	$ Average (M) 2017	$18.92	$1.41	$-	$10.93
Later Stage VC/Convertible Debt/PE Growth Expansion	# of deals 2018	7	2	1	1
	# of deals 2017	0	1	1	1
	$ (M) 2018	$238.30	$23.90	$17.00	$4.47
	$ (M) 2017	$-	$4.95	$4.51	$11.22
	$ Average (M) 2018	$47.66	$11.95	$17.00	$4.47
	$ Average (M) 2017	$-	$4.95	$4.51	$11.22
Corporate Financing	# of deals 2018	3	1	2	2
	# of deals 2017	3	0	0	2
	$ (M) 2018	$1.81	$-	$89.63	$3.04
	$ (M) 2017	$450.00	$-	$-	$20.34
	$ Average (M) 2018	$0.91	$-	$44.82	$3.04
	$ Average (M) 2017	$450.00	$-	$-	$10.17
Buyout/LBO	# of deals 2018	3	5	0	1
	# of deals 2017	4	12	1	0
	$ (M) 2018	$187.13	$2,400.00	$-	$23.37
	$ (M) 2017	$-	$52.00	$-	$-
	$ Average (M) 2018	$187.13	$2,400.00	$-	$23.37
	$ Average (M) 2017	$-	$26.00	$-	$-
Merger/Acquisition	# of deals 2018	18	21	6	4
	# of deals 2017	31	28	2	3
	$ (M) 2018	$150.02	$304.35	$1.69	$257.64
	$ (M) 2017	$857.74	$88.03	$-	$-
	$ Average (M) 2018	$150.02	$38.04	$1.69	$257.64
	$ Average (M) 2017	$122.53	$12.58	$-	$-
IPO	# of deals 2018	0	0	0	1
	# of deals 2017	2	3	0	0
	$ (M) 2018	$-	$-	$-	$12.60
	$ (M) 2017	$1,306.22	$59.72	$-	$-
	$ Average (M) 2018	$-	$-	$-	$12.60
	$ Average (M) 2017	$653.11	$29.86	$-	$-

+data

Transportation Service Platform Operator/Developer

Vertical		Ride-sharing	Scooter-sharing	Other	All
$ Total Capital Raised (M) 2018		$29,275.88	$549.20	$682.71	$34,612.73
$ Total Capital Raised (M) 2017		$9,625.09	$46.53	$67.63	$13,603.49
# of Deals 2018		55	21	32	238
# of Deals 2017		61	15	19	256
$ Average Deal Size (M) 2018		$731.90	$34.33	$-	$252.65
$ Average Deal Size (M) 2017		$229.17	$4.65	$-	$97.87
Accelerator/Angel/Seed/ Grant	# of deals 2018	8	8	7	38
	# of deals 2017	23	10	9	79
	$ (M) 2018	$3.99	$28.47	$12.34	$56.11
	$ (M) 2017	$12.77	$6.95	$2.86	$122.95
	$ Average (M) 2018	$1.00	$4.75	$-	$2.44
	$ Average (M) 2017	$0.98	$0.99	$-	$2.20
Early Stage VC	# of deals 2018	14	7	10	53
	# of deals 2017	18	2	6	39
	$ (M) 2018	$303.56	$252.90	$268.80	$1,060.04
	$ (M) 2017	$5,992.69	$8.00	$64.77	$6,217.52
	$ Average (M) 2018	$27.60	$42.15	$-	$24.65
	$ Average (M) 2017	$399.51	$8.00	$-	$182.87
Later Stage VC/Convertible Debt/PE Growth Expansion	# of deals 2018	17	2	4	34
	# of deals 2017	8	1	0	12
	$ (M) 2018	$14,798.64	$156.18	$363.10	$15,601.59
	$ (M) 2017	$1,782.00	$31.50	$0.00	$1,834.18
	$ Average (M) 2018	$986.58	$78.09	$-	$520.05
	$ Average (M) 2017	$222.75	$31.50	$-	$152.85
Corporate Financing	# of deals 2018	5	0	1	14
	# of deals 2017	5	0	0	10
	$ (M) 2018	$1,043.22	$-	$0.00	$1,137.70
	$ (M) 2017	$93.71	$-	$-	$564.05
	$ Average (M) 2018	$347.74	$-	$-	$142.21
	$ Average (M) 2017	$46.86	$-	$-	$112.81
Buyout/LBO	# of deals 2018	1	0	0	10
	# of deals 2017	0	0	0	17
	$ (M) 2018	$26.42	$-	$-	$2,636.92
	$ (M) 2017	$-	$-	$-	$52.00
	$ Average (M) 2018	$26.42	$-	$-	$659.23
	$ Average (M) 2017	$-	$-	$-	$26.00
Merger/Acquisition	# of deals 2018	5	2	5	61
	# of deals 2017	2	0	4	70
	$ (M) 2018	$1,000.00	$100.00	$(0.00)	$1,813.70
	$ (M) 2017	$16.03	$-	$-	$961.80
	$ Average (M) 2018	$1,000.00	$100.00	$-	$139.52
	$ Average (M) 2017	$16.03	$-	$-	$64.12
IPO	# of deals 2018	0	0	0	1
	# of deals 2017	0	0	0	5
	$ (M) 2018	$-	$-	$-	$12.60
	$ (M) 2017	$-	$-	$-	$1,365.94
	$ Average (M) 2018	$-	$-	$-	$12.60
	$ Average (M) 2017	$-	$-	$-	$341.49

Full-stack Mobility Solution Developer

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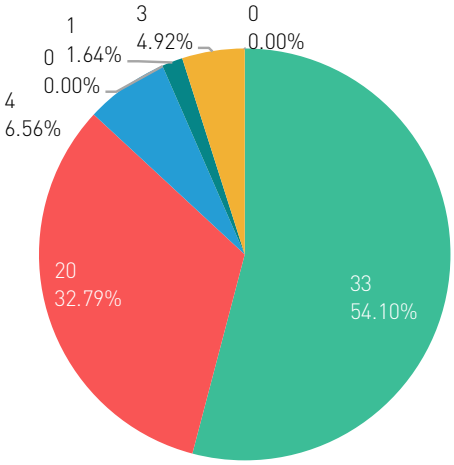
Full-stack Mobility Solution Developer
Definition: Full-stack developers of autonomous driving solution
Typical customers: OEMs, ride-sharing platforms, car rental comapnies, shippers, logistics companies
Examples of products/services: L4 autonomous driving system

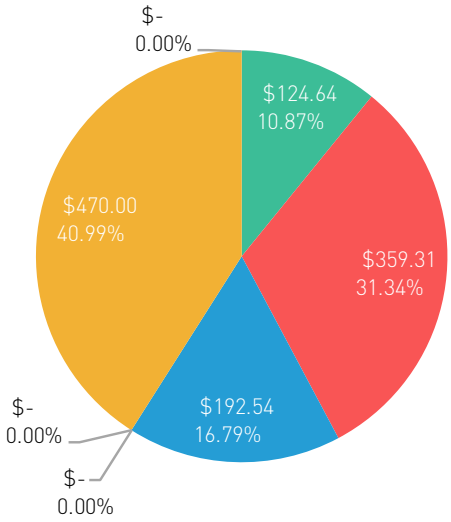
- Accelerator/Angel/Seed/Grant deals
- Early Stage VC
- Later Stage VC/Convertible Debt/PE Growth Expansion deals
- Corporate Financing
- Buyout/LBO
- Merger/Acquisition
- IPO

Deal distribution[1]

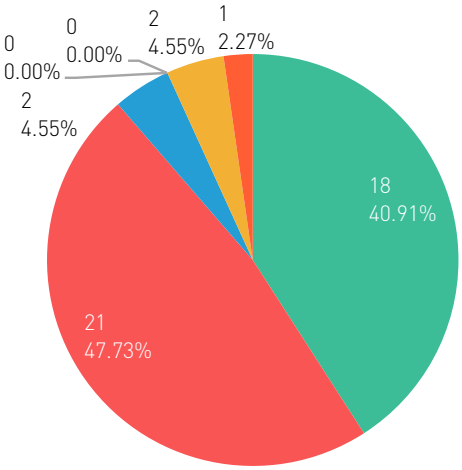
Funding distribution[2]

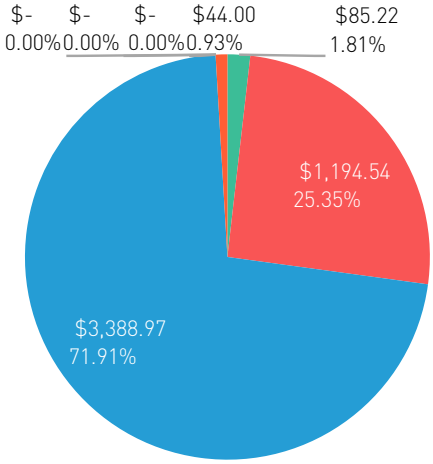
2017





2018





[1][2] deals not belonging to these categores are not included.

+data

Full-stack Mobility Solution Developer

	2017	2018
$ Total capital raised (M)	**$1,165.96**	**$7,823.73**
# of deals	**66**	**47**
$ Average deal size (M)	**$26.50**	**$223.54**
Deal stats by type		
Accelerator/Angel/Seed/Grant		
# of deals	33	18
$ of deals (M)	$124.64	$85.22
$ Average deal size (M)	$6.56	$5.68
Early Stage VC		
# of deals	20	21
$ of deals (M)	$359.31	$1,194.54
$ Average deal size (M)	$21.14	$74.66
Later Stage VC/Convertible Debt/PE Growth Expansion		
# of deals	4	2
$ of deals (M)	$192.54	$3,388.97
$ Average deal size (M)	$48.14	$1,694.49
Corporate Financing		
# of deals	0	0
$ of deals (M)	$-	$-
$ Average deal size (M)	$-	$-
Buyout/LBO		
# of deals	1	0
$ of deals (M)	$-	$-
$ Average deal size (M)	$-	$-
Merger/Acquisition		
# of deals	3	2
$ of deals (M)	$470.00	$-
$ Average deal size (M)	$235.00	$-
IPO		
# of deals	0	1
$ of deals (M)	$-	$44.00
$ Average deal size (M)	$-	$44.00

Full-stack Mobility
Solution Developer

data+

verticals

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Full-stack Mobility Solution Developer

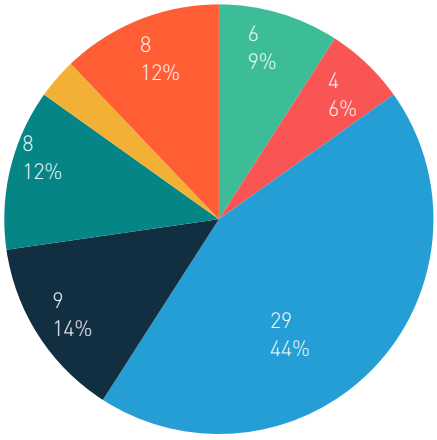
Full-stack Mobility Solution Developer
Definition: Full-stack developers of autonomous driving solution
Typical customers: OEMs, ride-sharing platforms, car rental comapnies, shippers, logistics companies
Examples of products/services: L4 autonomous driving system

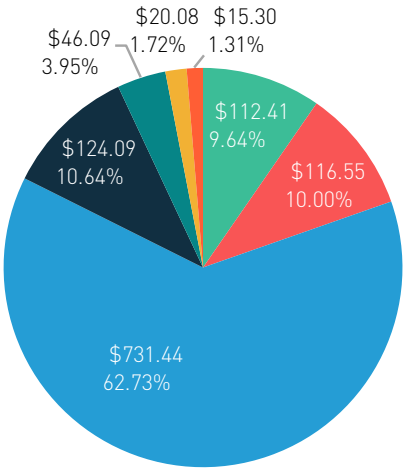
- Delivery vehicles
- Industry robots
- Passenger cars
- Trucks
- Shuttle/Bus
- After-market self-driving solution
- Other

Deal distribution[1] by vertical

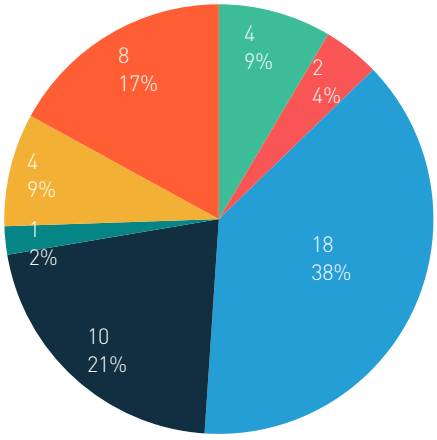
Funding distribution[2] by vertical

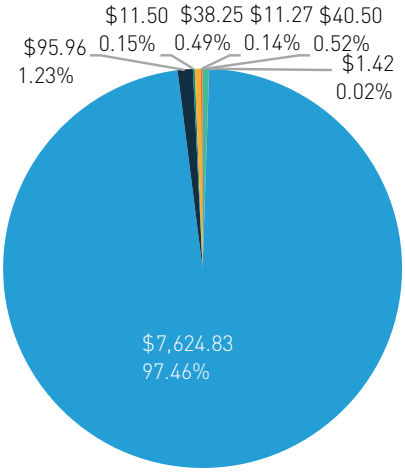
2017





2018





[1][2] deals not belonging to these categores are not included.

Full-stack Mobility Solution Developer

data+

Vertical		Delivery vehicles	Industry robots	Passenger cars	Trucks
$ Total Capital Raised (M) 2018		$40.50	$1.42	$7,624.83	$95.96
$ Total Capital Raised (M) 2017		$112.41	$116.55	$731.44	$124.09
# of Deals 2018		4	2	18	10
# of Deals 2017		6	4	29	9
$ Average Deal Size (M) 2018		$10.13	$1.42	$448.52	$19.19
$ Average Deal Size (M) 2017		$18.74	$38.85	$40.64	$17.73
Accelerator/Angel/Seed/ Grant	# of deals 2018	3	1	4	2
	# of deals 2017	5	3	12	2
	$ (M) 2018	$37.50	$1.42	$14.07	$9.46
	$ (M) 2017	$20.41	$2.55	$83.90	$0.01
	$ Average (M) 2018	$12.50	$1.42	$3.52	$4.73
	$ Average (M) 2017	$4.08	$1.28	$13.98	$0.01
Early Stage VC	# of deals 2018	1	0	10	7
	# of deals 2017	1	0	11	6
	$ (M) 2018	$3.00	$-	$1,066.79	$86.50
	$ (M) 2017	$92.00	$-	$174.00	$69.08
	$ Average (M) 2018	$3.00	$-	$118.53	$28.83
	$ Average (M) 2017	$92.00	$-	$19.33	$13.82
Later Stage VC/Convertible Debt/PE Growth Expansion	# of deals 2018	0	0	2	0
	# of deals 2017	0	1	2	1
	$ (M) 2018	$-	$-	$3,388.97	$-
	$ (M) 2017	$-	$114.00	$23.54	$55.00
	$ Average (M) 2018	$-	$-	$1,694.49	$-
	$ Average (M) 2017	$-	$114.00	$11.77	$55.00
Corporate Financing	# of deals 2018	0	0	0	0
	# of deals 2017	0	0	0	0
	$ (M) 2018	$-	$-	$-	$-
	$ (M) 2017	$-	$-	$-	$-
	$ Average (M) 2018	$-	$-	$-	$-
	$ Average (M) 2017	$-	$-	$-	$-
Buyout/LBO	# of deals 2018	0	0	0	0
	# of deals 2017	0	0	0	0
	$ (M) 2018	$-	$-	$-	$-
	$ (M) 2017	$-	$-	$-	$-
	$ Average (M) 2018	$-	$-	$-	$-
	$ Average (M) 2017	$-	$-	$-	$-
Merger/Acquisition	# of deals 2018	0	1	0	0
	# of deals 2017	0	0	2	0
	$ (M) 2018	$-	$-	$-	$-
	$ (M) 2017	$-	$-	$450.00	$-
	$ Average (M) 2018	$-	$-	$-	$-
	$ Average (M) 2017	$-	$-	$450.00	$-
IPO	# of deals 2018	0	0	1	0
	# of deals 2017	0	0	0	0
	$ (M) 2018	$-	$-	$44.00	$-
	$ (M) 2017	$-	$-	$-	$-
	$ Average (M) 2018	$-	$-	$44.00	$-
	$ Average (M) 2017	$-	$-	$-	$-

Full-stack Mobility Solution Developer

Vertical		Shuttle/Bus	After-market self-driving solution	Other	All
$ Total Capital Raised (M) 2018		$11.50	$38.25	$11.27	$7,823.73
$ Total Capital Raised (M) 2017		$46.09	$20.08	$15.30	$1,165.96
# of Deals 2018		1	4	8	47
# of Deals 2017		8	2	8	66
$ Average Deal Size (M) 2018		$11.50	$12.75	$-	$223.54
$ Average Deal Size (M) 2017		$7.68	$10.04	$-	$26.50
Accelerator/Angel/Seed/ Grant	# of deals 2018	1	0	7	18
	# of deals 2017	4	1	6	33
	$ (M) 2018	$11.50	$-	$11.27	$85.22
	$ (M) 2017	$6.62	$10.85	$0.30	$124.64
	$ Average (M) 2018	$11.50	$-	$-	$5.68
	$ Average (M) 2017	$2.21	$10.85	$-	$6.56
Early Stage VC	# of deals 2018	0	3	0	21
	# of deals 2017	0	1	1	20
	$ (M) 2018	$-	$38.25	$-	$1,194.54
	$ (M) 2017	$-	$9.23	$15.00	$359.31
	$ Average (M) 2018	$-	$12.75	$-	$74.66
	$ Average (M) 2017	$-	$9.23	$-	$21.14
Later Stage VC/Convertible Debt/PE Growth Expansion	# of deals 2018	0	0	0	2
	# of deals 2017	0	0	0	4
	$ (M) 2018	$-	$-	$-	$3,388.97
	$ (M) 2017	$-	$-	$-	$192.54
	$ Average (M) 2018	$-	$-	$-	$1,694.49
	$ Average (M) 2017	$-	$-	$-	$48.14
Corporate Financing	# of deals 2018	0	0	0	0
	# of deals 2017	0	0	0	0
	$ (M) 2018	$-	$-	$-	$-
	$ (M) 2017	$-	$-	$-	$-
	$ Average (M) 2018	$-	$-	$-	$-
	$ Average (M) 2017	$-	$-	$-	$-
Buyout/LBO	# of deals 2018	0	0	0	0
	# of deals 2017	0	0	1	1
	$ (M) 2018	$-	$-	$-	$-
	$ (M) 2017	$-	$-	$-	$-
	$ Average (M) 2018	$-	$-	$-	$-
	$ Average (M) 2017	$-	$-	$-	$-
Merger/Acquisition	# of deals 2018	0	1	0	2
	# of deals 2017	1	0	0	3
	$ (M) 2018	$-	$-	$-	$-
	$ (M) 2017	$20.00	$-	$-	$470.00
	$ Average (M) 2018	$-	$-	$-	$-
	$ Average (M) 2017	$20.00	$-	$-	$235.00
IPO	# of deals 2018	0	0	0	1
	# of deals 2017	0	0	0	0
	$ (M) 2018	$-	$-	$-	$44.00
	$ (M) 2017	$-	$-	$-	$-
	$ Average (M) 2018	$-	$-	$-	$44.00
	$ Average (M) 2017	$-	$-	$-	$-

Embedded Software Developer

data+

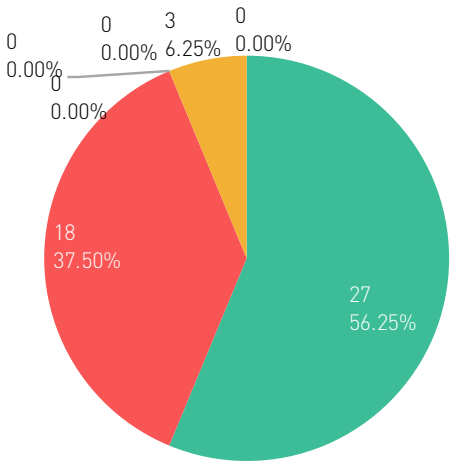
Embedded Software Developer

Definition: Developers of software that are essential for developing autonomous driving
Typical customers: OEMs, autonomous driving vehicle developers
Examples of products/services: perception, mapping, route planning module

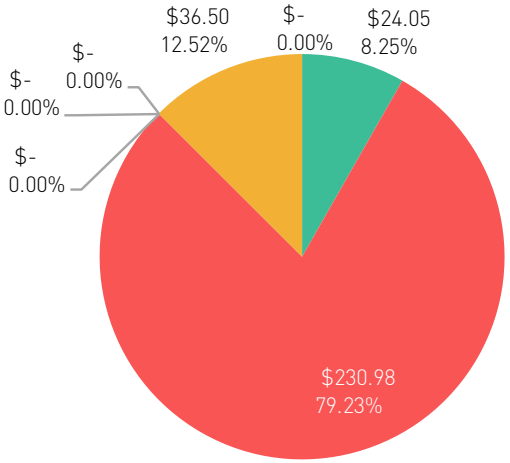
- Accelerator/Angel/Seed/Grant deals
- Early Stage VC
- Later Stage VC/Convertible Debt/PE Growth Expansion deals
- Corporate Financing
- Buyout/LBO
- Merger/Acquisition
- IPO

2017

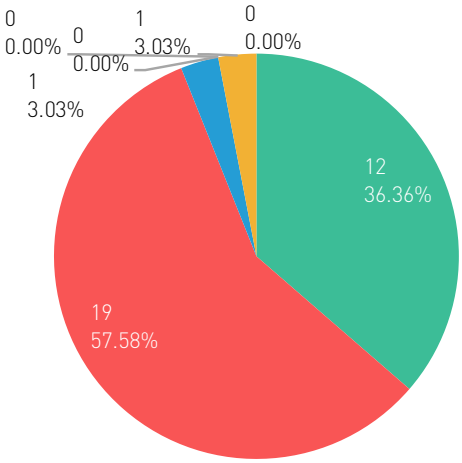
Deal distribution[1]

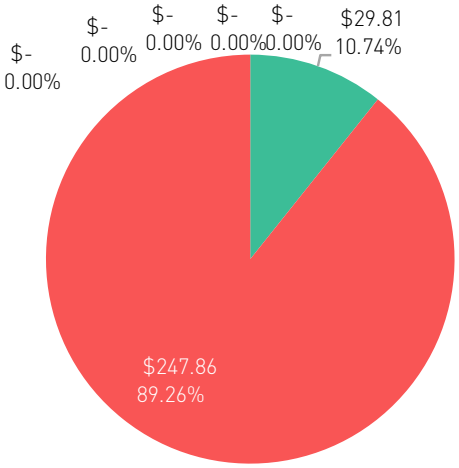


Funding distribution[2]



2018





[1][2] deals not belonging to these categores are not included.

+data

Embedded Software Developer

	2017	2018
$ Total capital raised (M)	**$291.53**	**$295.24**
# of deals	**50**	**35**
$ Average deal size (M)	**$8.10**	**$11.36**
Deal stats by type		
Accelerator/Angel/Seed/Grant		
# of deals	27	12
$ of deals (M)	$24.05	$29.81
$ Average deal size (M)	$1.34	$3.73
Early Stage VC		
# of deals	18	19
$ of deals (M)	$230.98	$247.86
$ Average deal size (M)	$13.59	$14.58
Later Stage VC/Convertible Debt/PE Growth Expansion		
# of deals	0	1
$ of deals (M)	$-	$-
$ Average deal size (M)	$-	$-
Corporate Financing		
# of deals	0	0
$ of deals (M)	$-	$-
$ Average deal size (M)	$-	$-
Buyout/LBO		
# of deals	0	0
$ of deals (M)	$-	$-
$ Average deal size (M)	$-	$-
Merger/Acquisition		
# of deals	3	1
$ of deals (M)	$36.50	$-
$ Average deal size (M)	$36.50	$-
IPO		
# of deals	0	0
$ of deals (M)	$-	$-
$ Average deal size (M)	$-	$-

Embedded Software Developer

data+

verticals

+data

Embedded Software Developer

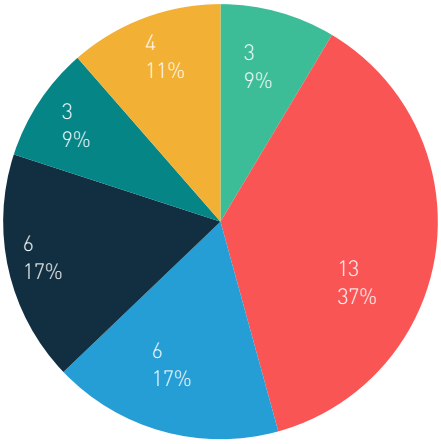
Embedded Software Developer
Definition: Developers of software that are essential for developing autonomous driving
Typical customers: OEMs, autonomous driving vehicle developers
Examples of products/services: perception, mapping, route planning module

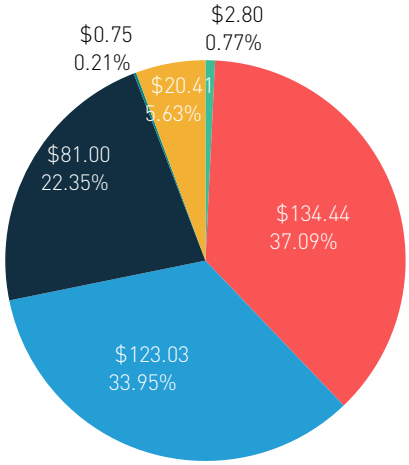
- Data annotation
- Perception
- Mapping
- Localization
- Human behavior prediction
- Simulation

Deal distribution[1]

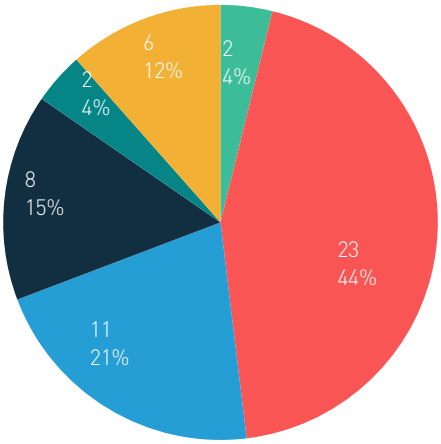
Funding distribution[2]

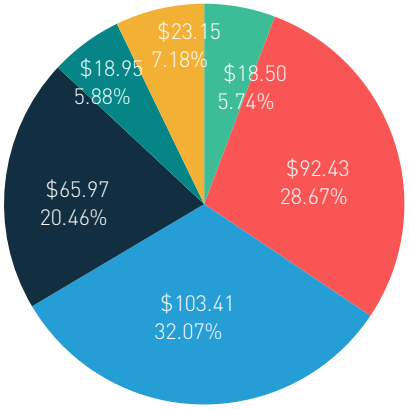
2017





2018





[1][2] deals not belonging to these categores are not included.

Embedded Software Developer

data+

Vertical		Data annotation	Perception	Mapping	Localization
$ Total Capital Raised (M) 2018		$18.50	$92.43	$103.41	$65.97
$ Total Capital Raised (M) 2017		$2.80	$134.44	$123.03	$81.00
# of Deals 2018		3	13	6	6
# of Deals 2017		2	23	11	8
$ Average Deal Size (M) 2018		$18.50	$9.24	$20.68	$21.99
$ Average Deal Size (M) 2017		$2.80	$8.40	$15.38	$11.57
Accelerator/Angel/Seed/ Grant	# of deals 2018	2	3	1	2
	# of deals 2017	2	11	5	4
	$ (M) 2018	$-	$15.61	$5.05	$-
	$ (M) 2017	$2.80	$6.25	$2.24	$8.00
	$ Average (M) 2018	$-	$5.20	$5.05	$-
	$ Average (M) 2017	$2.80	$1.04	$0.75	$2.00
Early Stage VC	# of deals 2018	1	7	5	3
	# of deals 2017	0	10	6	3
	$ (M) 2018	$18.50	$59.25	$98.36	$65.97
	$ (M) 2017	$-	$91.69	$120.79	$73.00
	$ Average (M) 2018	$18.50	$9.88	$24.59	$21.99
	$ Average (M) 2017	$-	$10.19	$24.16	$24.33
Later Stage VC/Convertible Debt/PE Growth Expansion	# of deals 2018	0	1	0	1
	# of deals 2017	0	0	0	0
	$ (M) 2018	$-	$-	$-	$-
	$ (M) 2017	$-	$-	$-	$-
	$ Average (M) 2018	$-	$-	$-	$-
	$ Average (M) 2017	$-	$-	$-	$-
Corporate Financing	# of deals 2018	0	0	0	0
	# of deals 2017	0	0	0	0
	$ (M) 2018	$-	$-	$-	$-
	$ (M) 2017	$-	$-	$-	$-
	$ Average (M) 2018	$-	$-	$-	$-
	$ Average (M) 2017	$-	$-	$-	$-
Buyout/LBO	# of deals 2018	0	0	0	0
	# of deals 2017	0	0	0	0
	$ (M) 2018	$-	$-	$-	$-
	$ (M) 2017	$-	$-	$-	$-
	$ Average (M) 2018	$-	$-	$-	$-
	$ Average (M) 2017	$-	$-	$-	$-
Merger/Acquisition	# of deals 2018	0	0	0	0
	# of deals 2017	0	2	0	0
	$ (M) 2018	$-	$-	$-	$-
	$ (M) 2017	$-	$36.50	$-	$-
	$ Average (M) 2018	$-	$-	$-	$-
	$ Average (M) 2017	$-	$36.50	$-	$-
IPO	# of deals 2018	0	0	0	0
	# of deals 2017	0	0	0	0
	$ (M) 2018	$-	$-	$-	$-
	$ (M) 2017	$-	$-	$-	$-
	$ Average (M) 2018	$-	$-	$-	$-
	$ Average (M) 2017	$-	$-	$-	$-

+data

Embedded Software Developer

Vertical		Human behavior prediction	Simulation	All
$ Total Capital Raised (M) 2018		$18.95	$23.15	$295.24
$ Total Capital Raised (M) 2017		$0.75	$20.41	$291.53
# of Deals 2018		3	4	35
# of Deals 2017		2	6	50
$ Average Deal Size (M) 2018		$9.48	$7.72	$11.36
$ Average Deal Size (M) 2017		$0.75	$5.10	$8.10
Accelerator/Angel/Seed/ Grant	# of deals 2018	1	2	12
	# of deals 2017	2	2	27
	$ (M) 2018	$3.00	$4.65	$29.81
	$ (M) 2017	$0.75	$3.91	$24.05
	$ Average (M) 2018	$3.00	$2.33	$3.73
	$ Average (M) 2017	$0.75	$1.96	$1.34
Early Stage VC	# of deals 2018	2	1	19
	# of deals 2017	0	2	18
	$ (M) 2018	$15.95	$18.50	$247.86
	$ (M) 2017	$-	$16.50	$230.98
	$ Average (M) 2018	$15.95	$18.50	$14.58
	$ Average (M) 2017	$-	$8.25	$13.59
Later Stage VC/Convertible Debt/PE Growth Expansion	# of deals 2018	0	0	1
	# of deals 2017	0	0	0
	$ (M) 2018	$-	$-	$-
	$ (M) 2017	$-	$-	$-
	$ Average (M) 2018	$-	$-	$-
	$ Average (M) 2017	$-	$-	$-
Corporate Financing	# of deals 2018	0	0	0
	# of deals 2017	0	0	0
	$ (M) 2018	$-	$-	$-
	$ (M) 2017	$-	$-	$-
	$ Average (M) 2018	$-	$-	$-
	$ Average (M) 2017	$-	$-	$-
Buyout/LBO	# of deals 2018	0	0	0
	# of deals 2017	0	0	0
	$ (M) 2018	$-	$-	$-
	$ (M) 2017	$-	$-	$-
	$ Average (M) 2018	$-	$-	$-
	$ Average (M) 2017	$-	$-	$-
Merger/Acquisition	# of deals 2018	0	1	1
	# of deals 2017	0	1	3
	$ (M) 2018	$-	$-	$-
	$ (M) 2017	$-	$-	$36.50
	$ Average (M) 2018	$-	$-	$-
	$ Average (M) 2017	$-	$-	$36.50
IPO	# of deals 2018	0	0	0
	# of deals 2017	0	0	0
	$ (M) 2018	$-	$-	$-
	$ (M) 2017	$-	$-	$-
	$ Average (M) 2018	$-	$-	$-
	$ Average (M) 2017	$-	$-	$-

Embedded Hardware Developer

data+

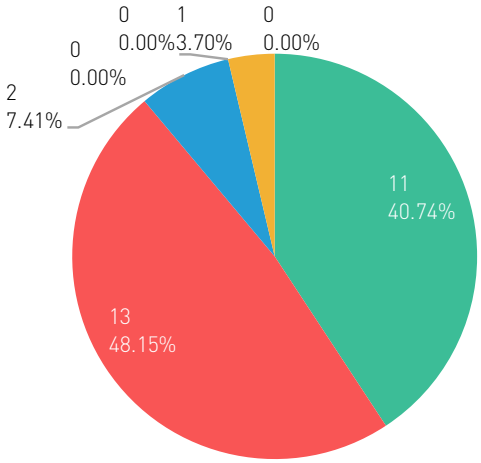
Embedded Hardware Developer
Definition: Developers of hardware that are essential for developing autonomous driving
Typical customers: OEMs, autonomous driving vehicle developers
Examples of products/services: LiDAR, radar, camera

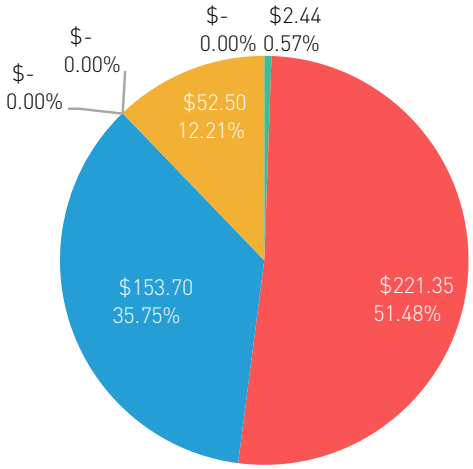
- Accelerator/Angel/Seed/Grant deals
- Early Stage VC
- Later Stage VC/Convertible Debt/PE Growth Expansion deals
- Corporate Financing
- Buyout/LBO
- Merger/Acquisition
- IPO

Deal distribution[1]

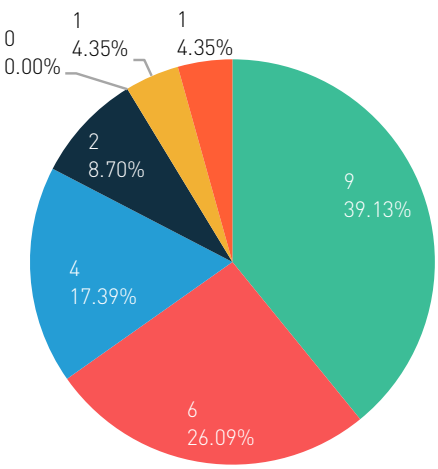
Funding distribution[2]

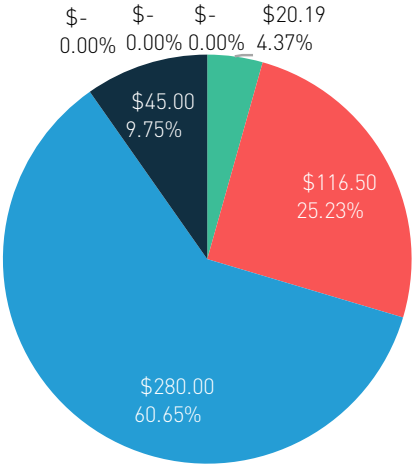
2017





2018





[1][2] deals not belonging to these categores are not included.

+data

Embedded Hardware Developer

	2017	2018
$ Total capital raised (M)	**$429.99**	**$461.69**
# of deals	**27**	**23**
$ Average deal size (M)	**$23.89**	**$27.16**
Deal stats by type		
Accelerator/Angel/Seed/Grant		
# of deals	11	9
$ of deals (M)	$2.44	$20.19
$ Average deal size (M)	$0.61	$2.88
Early Stage VC		
# of deals	13	6
$ of deals (M)	$221.35	$116.50
$ Average deal size (M)	$20.12	$23.30
Later Stage VC/Convertible Debt/PE Growth Expansion		
# of deals	2	4
$ of deals (M)	$153.70	$280.00
$ Average deal size (M)	$76.85	$93.33
Corporate Financing		
# of deals	0	2
$ of deals (M)	$-	$45.00
$ Average deal size (M)	$-	$22.50
Buyout/LBO		
# of deals	0	0
$ of deals (M)	$-	$-
$ Average deal size (M)	$-	$-
Merger/Acquisition		
# of deals	1	1
$ of deals (M)	$52.50	$-
$ Average deal size (M)	$52.50	$-
IPO		
# of deals	0	1
$ of deals (M)	$-	$-
$ Average deal size (M)	$-	$-

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verticals

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Embedded Hardware Developer

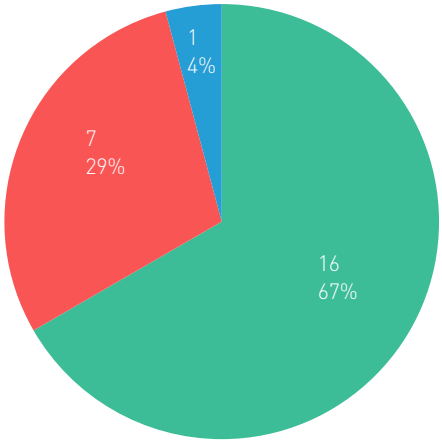
Embedded Hardware Developer
Definition: Developers of hardware that are essential for developing autonomous driving
Typical customers: OEMs, autonomous driving vehicle developers
Examples of products/services: LiDAR, radar, camera

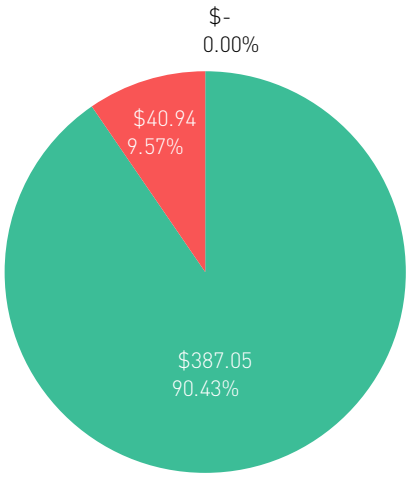
LiDAR
Radar
Camera

Deal distribution[1]

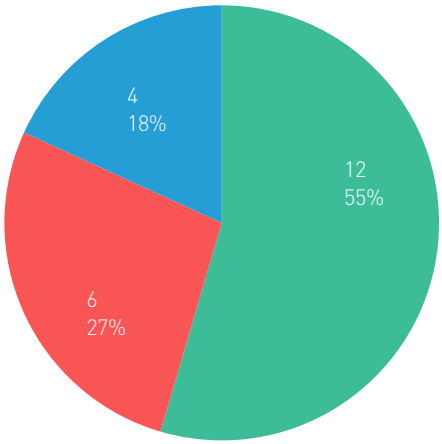
Funding distribution[2]

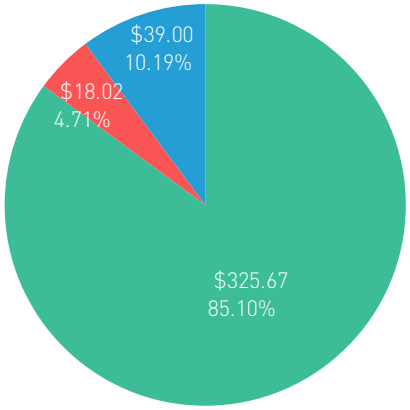
2017





2018





[1][2] deals not belonging to these categores are not included.

Embedded Hardware Developer

data+

Vertical		LiDAR	Radar	Camera	All
$ Total Capital Raised (M) 2018		$325.67	$18.02	$39.00	$461.69
$ Total Capital Raised (M) 2017		$387.05	$40.94	$-	$429.99
# of Deals 2018		12	6	4	23
# of Deals 2017		16	7	1	27
$ Average Deal Size (M) 2018		$40.71	$4.51	$19.50	$27.16
$ Average Deal Size (M) 2017		$35.19	$6.82	$-	$23.89
Accelerator/Angel/Seed/ Grant	# of deals 2018	3	3	0	9
	# of deals 2017	4	3	1	11
	$ (M) 2018	$10.67	$8.02	$-	$20.19
	$ (M) 2017	$-	$0.44	$-	$2.44
	$ Average (M) 2018	$3.56	$2.67	$-	$2.88
	$ Average (M) 2017	$-	$0.15	$-	$0.61
Early Stage VC	# of deals 2018	3	1	1	6
	# of deals 2017	9	4	0	13
	$ (M) 2018	$75.00	$10.00	$19.00	$116.50
	$ (M) 2017	$180.85	$40.50	$-	$221.35
	$ Average (M) 2018	$37.50	$10.00	$19.00	$23.30
	$ Average (M) 2017	$22.61	$13.50	$-	$20.12
Later Stage VC/Convertible Debt/PE Growth Expansion	# of deals 2018	3	0	0	4
	# of deals 2017	2	0	0	2
	$ (M) 2018	$215.00	$-	$-	$280.00
	$ (M) 2017	$153.70	$-	$-	$153.70
	$ Average (M) 2018	$107.50	$-	$-	$93.33
	$ Average (M) 2017	$76.85	$-	$-	$76.85
Corporate Financing	# of deals 2018	1	0	1	2
	# of deals 2017	0	0	0	0
	$ (M) 2018	$25.00	$-	$20.00	$45.00
	$ (M) 2017	$-	$-	$-	$-
	$ Average (M) 2018	$25.00	$-	$20.00	$22.50
	$ Average (M) 2017	$-	$-	$-	$-
Buyout/LBO	# of deals 2018	0	0	0	0
	# of deals 2017	0	0	0	0
	$ (M) 2018	$-	$-	$-	$-
	$ (M) 2017	$-	$-	$-	$-
	$ Average (M) 2018	$-	$-	$-	$-
	$ Average (M) 2017	$-	$-	$-	$-
Merger/Acquisition	# of deals 2018	1	1	1	1
	# of deals 2017	1	0	0	1
	$ (M) 2018	$-	$-	$-	$-
	$ (M) 2017	$52.50	$-	$-	$52.50
	$ Average (M) 2018	$-	$-	$-	$-
	$ Average (M) 2017	$52.50	$-	$-	$52.50
IPO	# of deals 2018	1	1	1	1
	# of deals 2017	0	0	0	0
	$ (M) 2018	$-	$-	$-	$-
	$ (M) 2017	$-	$-	$-	$-
	$ Average (M) 2018	$-	$-	$-	$-
	$ Average (M) 2017	$-	$-	$-	$-

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Vehicle Service Provider

data+

Vehicle Service Provider

Definition: Providers of vehicle services on purchasing, operating, and maintaining, and supplies/technologies that enable these services

Typical customers: fleet owners, vehicle owners, car rental companies

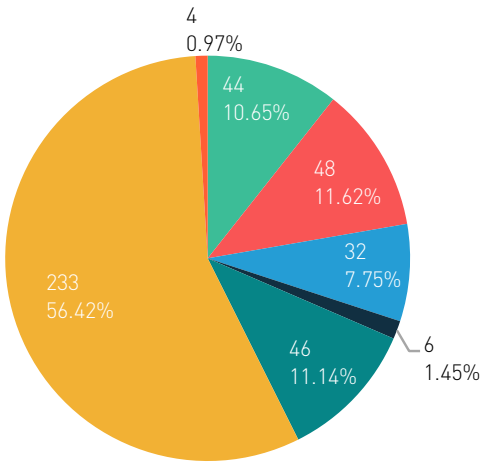
Examples of products/services: E-commerce for auto parts, car repair, car wash, used-car trading platform, car insurance, fleet management system

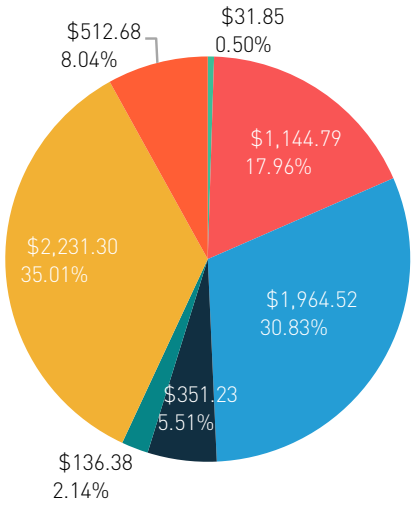
- Accelerator/Angel/Seed/Grant deals
- Early Stage VC
- Later Stage VC/Convertible Debt/PE Growth Expansion deals
- Corporate Financing
- Buyout/LBO
- Merger/Acquisition
- IPO

Deal distribution[1]

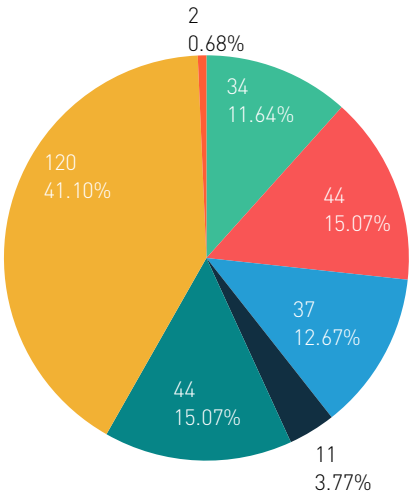
Funding distribution[2]

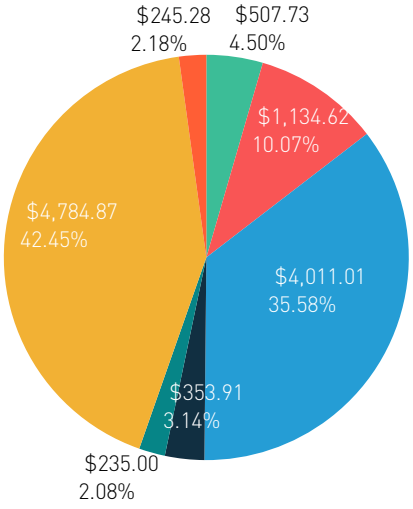
2017





2018





[1][2] deals not belonging to these categores are not included.

+data

Vehicle Service Provider

	2017	2018
$ Total capital raised (M)	**$15,607.61**	**$17,761.65**
# of deals	**480**	**340**
$ Average deal size (M)	**$94.59**	**$137.69**
Deal stats by type		
Accelerator/Angel/Seed/Grant		
# of deals	44	34
$ of deals (M)	$31.85	$507.73
$ Average deal size (M)	$1.00	$24.18
Early Stage VC		
# of deals	48	44
$ of deals (M)	$1,144.79	$1,134.62
$ Average deal size (M)	$26.62	$30.67
Later Stage VC/Convertible Debt/PE Growth Expansion		
# of deals	32	37
$ of deals (M)	$1,964.52	$4,011.01
$ Average deal size (M)	$89.30	$167.13
Corporate Financing		
# of deals	6	11
$ of deals (M)	$351.23	$353.91
$ Average deal size (M)	$87.81	$58.99
Buyout/LBO		
# of deals	46	44
$ of deals (M)	$136.38	$235.00
$ Average deal size (M)	$68.19	$117.50
Merger/Acquisition		
# of deals	233	120
$ of deals (M)	$2,231.30	$4,784.87
$ Average deal size (M)	$69.73	$265.83
IPO		
# of deals	4	2
$ of deals (M)	$512.68	$245.28
$ Average deal size (M)	$128.17	$122.64

data+

verticals

+data

Vehicle Service Provider

Vehicle Service Provider

Definition: Providers of vehicle services on purchasing, operating, and maintaining, and supplies/technologies that enable these services

Typical customers: fleet owners, vehicle owners, car rental companies

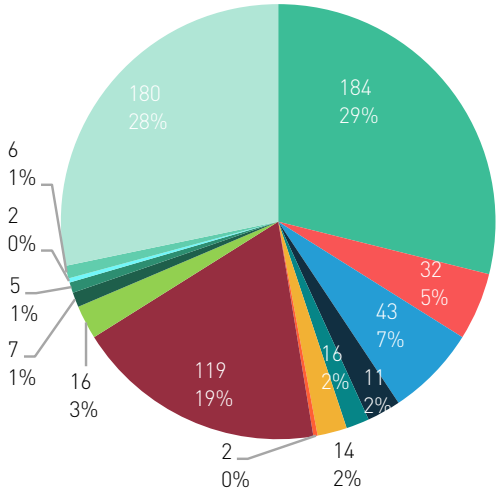
Examples of products/services: E-commerce for auto parts, car repair, car wash, used-car trading platform, car insurance, fleet management system

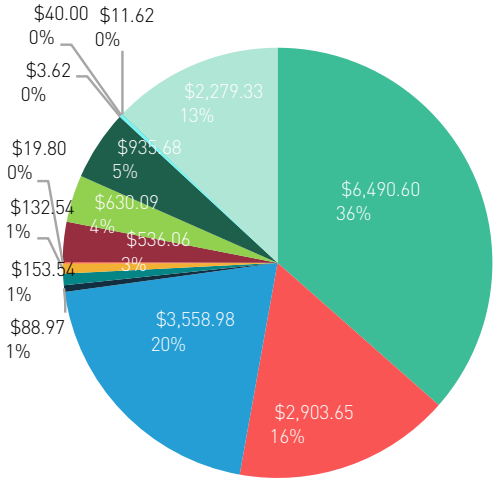
- Car dealership
- Marketplace
- E-commerce
- Fleet management
- Connected car platform
- Charging infrastructure
- Electric vehicle charging system
- Car repair/maintenance
- Car wash
- Car information platform
- Car inspection
- Insurance
- Cybersecurity protection
- Other

Deal distribution[1]

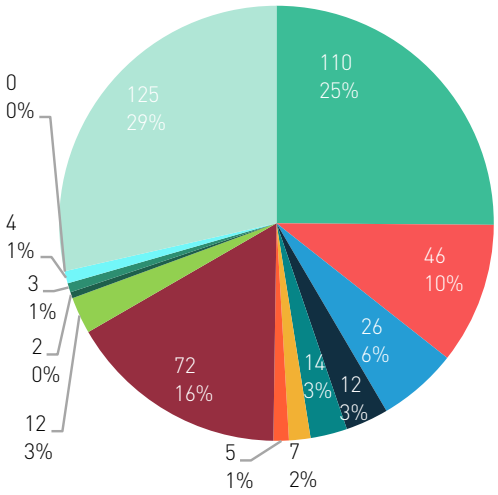
Funding distribution[2]

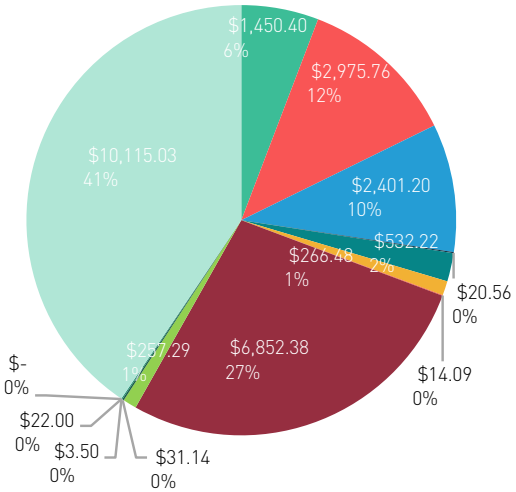
2017





2018





[1][2] deals not belonging to these categores are not included.

Vehicle Service Provider

data+

Vertical		Car dealership	Marketplace	E-commerce	Fleet management
$ Total Capital Raised (M) 2018		$1,450.40	$2,975.76	$2,401.20	$20.56
$ Total Capital Raised (M) 2017		$6,490.60	$2,903.65	$3,558.98	$88.97
# of Deals 2018		110	46	26	14
# of Deals 2017		184	32	43	16
$ Average Deal Size (M) 2018		$90.65	$82.66	$120.06	$6.85
$ Average Deal Size (M) 2017		$180.29	$100.13	$118.63	$9.89
Accelerator/Angel/Seed/ Grant	# of deals 2018	1	8	7	3
	# of deals 2017	0	7	10	4
	$ (M) 2018	$0.11	$11.48	$478.48	$3.00
	$ (M) 2017	$-	$1.74	$17.74	$0.33
	$ Average (M) 2018	$0.11	$2.87	$79.75	$3.00
	$ Average (M) 2017	$-	$0.29	$2.22	$0.11
Early Stage VC	# of deals 2018	0	16	8	2
	# of deals 2017	0	10	12	4
	$ (M) 2018	$-	$297.51	$750.33	$13.00
	$ (M) 2017	$-	$849.45	$134.39	$17.76
	$ Average (M) 2018	$-	$19.83	$93.79	$13.00
	$ Average (M) 2017	$-	$94.38	$12.22	$4.44
Later Stage VC/Convertible Debt/PE Growth Expansion	# of deals 2018	6	9	4	2
	# of deals 2017	5	7	1	1
	$ (M) 2018	$107.87	$2,092.17	$1,011.00	$4.56
	$ (M) 2017	$80.82	$1,661.60	$1.60	$-
	$ Average (M) 2018	$53.94	$261.52	$505.50	$4.56
	$ Average (M) 2017	$16.16	$237.37	$1.60	$-
Corporate Financing	# of deals 2018	1	4	3	0
	# of deals 2017	0	2	1	0
	$ (M) 2018	$-	$193.10	$160.81	$-
	$ (M) 2017	$-	$201.00	$150.00	$-
	$ Average (M) 2018	$-	$64.37	$53.60	$-
	$ Average (M) 2017	$-	$100.50	$150.00	$-
Buyout/LBO	# of deals 2018	7	1	2	3
	# of deals 2017	9	0	2	1
	$ (M) 2018	$41.00	$-	$-	$-
	$ (M) 2017	$-	$-	$-	$-
	$ Average (M) 2018	$41.00	$-	$-	$-
	$ Average (M) 2017	$-	$-	$-	$-
Merger/Acquisition	# of deals 2018	75	3	1	3
	# of deals 2017	138	2	10	6
	$ (M) 2018	$1,246.81	$103.75	$0.58	$-
	$ (M) 2017	$1,733.15	$4.98	$138.30	$70.88
	$ Average (M) 2018	$138.53	$51.88	$0.58	$-
	$ Average (M) 2017	$96.29	$4.98	$34.58	$35.44
IPO	# of deals 2018	0	2	0	0
	# of deals 2017	2	0	1	0
	$ (M) 2018	$-	$245.28	$-	$-
	$ (M) 2017	$137.28	$-	$225.00	$-
	$ Average (M) 2018	$-	$122.64	$-	$-
	$ Average (M) 2017	$68.64	$-	$225.00	$-

+data

Vehicle Service Provider

Vertical		Connected car platform	Charging infrastructure	Electric vehicle charging system	Car repair/maintenance
$ Total Capital Raised (M) 2018		$532.22	$266.48	$14.09	$6,852.38
$ Total Capital Raised (M) 2017		$153.54	$132.54	$19.80	$536.06
# of Deals 2018		12	7	5	72
# of Deals 2017		11	14	2	119
$ Average Deal Size (M) 2018		$88.70	$44.41	$7.05	$263.55
$ Average Deal Size (M) 2017		$25.59	$18.93	$9.90	$24.37
Accelerator/Angel/Seed/ Grant	# of deals 2018	2	0	1	6
	# of deals 2017	1	5	0	6
	$ (M) 2018	$-	$-	$-	$6.58
	$ (M) 2017	$-	$2.27	$-	$7.37
	$ Average (M) 2018	$-	$-	$-	$1.10
	$ Average (M) 2017	$-	$0.57	$-	$1.47
Early Stage VC	# of deals 2018	3	3	2	6
	# of deals 2017	4	3	0	7
	$ (M) 2018	$4.50	$15.54	$14.09	$34.11
	$ (M) 2017	$35.10	$5.27	$-	$62.26
	$ Average (M) 2018	$2.25	$5.18	$7.05	$8.53
	$ Average (M) 2017	$11.70	$2.64	$-	$10.38
Later Stage VC/Convertible Debt/PE Growth Expansion	# of deals 2018	5	2	1	5
	# of deals 2017	4	3	1	6
	$ (M) 2018	$527.72	$240.44	$-	$469.96
	$ (M) 2017	$3.44	$125.00	$11.16	$29.46
	$ Average (M) 2018	$131.93	$120.22	$-	$117.49
	$ Average (M) 2017	$1.72	$125.00	$11.16	$9.82
Corporate Financing	# of deals 2018	1	0	1	0
	# of deals 2017	0	1	0	2
	$ (M) 2018	$-	$-	$-	$-
	$ (M) 2017	$-	$-	$-	$0.23
	$ Average (M) 2018	$-	$-	$-	$-
	$ Average (M) 2017	$-	$-	$-	$0.23
Buyout/LBO	# of deals 2018	0	1	0	13
	# of deals 2017	0	0	0	17
	$ (M) 2018	$-	$-	$-	$194.00
	$ (M) 2017	$-	$-	$-	$23.75
	$ Average (M) 2018	$-	$-	$-	$194.00
	$ Average (M) 2017	$-	$-	$-	$23.75
Merger/Acquisition	# of deals 2018	1	0	0	26
	# of deals 2017	2	1	0	64
	$ (M) 2018	$-	$-	$-	$109.51
	$ (M) 2017	$115.00	$-	$-	$162.99
	$ Average (M) 2018	$-	$-	$-	$36.50
	$ Average (M) 2017	$115.00	$-	$-	$32.60
IPO	# of deals 2018	0	0	0	0
	# of deals 2017	0	0	0	0
	$ (M) 2018	$-	$-	$-	$-
	$ (M) 2017	$-	$-	$-	$-
	$ Average (M) 2018	$-	$-	$-	$-
	$ Average (M) 2017	$-	$-	$-	$-

Vehicle Service Provider

data+

Vertical		Car wash	Car information platform	Car inspection	Insurance
$ Total Capital Raised (M) 2018		$257.29	$31.14	$22.00	$3.50
$ Total Capital Raised (M) 2017		$630.09	$935.68	$3.62	$40.00
# of Deals 2018		12	2	3	4
# of Deals 2017		16	7	5	2
$ Average Deal Size (M) 2018		$85.76	$31.14	$22.00	$3.50
$ Average Deal Size (M) 2017		$210.03	$155.95	$1.21	$40.00
Accelerator/Angel/Seed/ Grant	# of deals 2018	0	0	0	0
	# of deals 2017	0	0	3	0
	$ (M) 2018	$-	$-	$-	$-
	$ (M) 2017	$-	$-	$0.06	$-
	$ Average (M) 2018	$-	$-	$-	$-
	$ Average (M) 2017	$-	$-	$0.03	$-
Early Stage VC	# of deals 2018	0	0	1	1
	# of deals 2017	0	1	1	1
	$ (M) 2018	$-	$-	$-	$3.50
	$ (M) 2017	$-	$5.34	$3.56	$40.00
	$ Average (M) 2018	$-	$-	$-	$3.50
	$ Average (M) 2017	$-	$5.34	$3.56	$40.00
Later Stage VC/Convertible Debt/PE Growth Expansion	# of deals 2018	1	0	0	0
	# of deals 2017	0	2	0	0
	$ (M) 2018	$-	$-	$-	$-
	$ (M) 2017	$-	$51.44	$-	$-
	$ Average (M) 2018	$-	$-	$-	$-
	$ Average (M) 2017	$-	$25.72	$-	$-
Corporate Financing	# of deals 2018	0	1	0	0
	# of deals 2017	0	0	0	0
	$ (M) 2018	$-	$-	$-	$-
	$ (M) 2017	$-	$-	$-	$-
	$ Average (M) 2018	$-	$-	$-	$-
	$ Average (M) 2017	$-	$-	$-	$-
Buyout/LBO	# of deals 2018	4	0	1	2
	# of deals 2017	13	0	0	0
	$ (M) 2018	$-	$-	$-	$-
	$ (M) 2017	$112.63	$-	$-	$-
	$ Average (M) 2018	$-	$-	$-	$-
	$ Average (M) 2017	$112.63	$-	$-	$-
Merger/Acquisition	# of deals 2018	4	0	1	1
	# of deals 2017	1	1	1	0
	$ (M) 2018	$-	$-	$22.00	$-
	$ (M) 2017	$-	$-	$-	$-
	$ Average (M) 2018	$-	$-	$22.00	$-
	$ Average (M) 2017	$-	$-	$-	$-
IPO	# of deals 2018	0	0	0	0
	# of deals 2017	0	1	0	0
	$ (M) 2018	$-	$-	$-	$-
	$ (M) 2017	$-	$150.40	$-	$-
	$ Average (M) 2018	$-	$-	$-	$-
	$ Average (M) 2017	$-	$150.40	$-	$-

+data

Vehicle Service Provider

Vertical		Cybersecurity protection	Other	All
$ Total Capital Raised (M) 2018		$-	$10,115.03	$17,761.65
$ Total Capital Raised (M) 2017		$11.62	$2,279.33	$15,607.61
# of Deals 2018		0	125	340
# of Deals 2017		6	180	480
$ Average Deal Size (M) 2018		$-	$-	$137.69
$ Average Deal Size (M) 2017		$2.91	$-	$94.59
Accelerator/Angel/Seed/ Grant	# of deals 2018	0	13	34
	# of deals 2017	4	17	44
	$ (M) 2018	$-	$14.66	$507.73
	$ (M) 2017	$2.03	$9.77	$31.85
	$ Average (M) 2018	$-	$-	$24.18
	$ Average (M) 2017	$1.02	$-	$1.00
Early Stage VC	# of deals 2018	0	12	44
	# of deals 2017	2	15	48
	$ (M) 2018	$-	$53.74	$1,134.62
	$ (M) 2017	$9.59	$102.82	$1,144.79
	$ Average (M) 2018	$-	$-	$30.67
	$ Average (M) 2017	$4.80	$-	$26.62
Later Stage VC/Convertible Debt/PE Growth Expansion	# of deals 2018	0	9	37
	# of deals 2017	0	11	32
	$ (M) 2018	$-	$27.25	$4,011.01
	$ (M) 2017	$-	$92.06	$1,964.52
	$ Average (M) 2018	$-	$-	$167.13
	$ Average (M) 2017	$-	$-	$89.30
Corporate Financing	# of deals 2018	0	2	11
	# of deals 2017	0	2	6
	$ (M) 2018	$-	$0.00	$353.91
	$ (M) 2017	$-	$0.23	$351.23
	$ Average (M) 2018	$-	$-	$58.99
	$ Average (M) 2017	$-	$-	$87.81
Buyout/LBO	# of deals 2018	0	30	44
	# of deals 2017	0	34	46
	$ (M) 2018	$-	$194.00	$235.00
	$ (M) 2017	$-	$136.38	$136.38
	$ Average (M) 2018	$-	$-	$117.50
	$ Average (M) 2017	$-	$-	$68.19
Merger/Acquisition	# of deals 2018	0	37	120
	# of deals 2017	0	74	233
	$ (M) 2018	$-	$3,433.73	$4,784.87
	$ (M) 2017	$-	$168.99	$2,231.30
	$ Average (M) 2018	$-	$-	$265.83
	$ Average (M) 2017	$-	$-	$69.73
IPO	# of deals 2018	0	0	2
	# of deals 2017	0	1	4
	$ (M) 2018	$-	$-	$245.28
	$ (M) 2017	$-	$150.40	$512.68
	$ Average (M) 2018	$-	$-	$122.64
	$ Average (M) 2017	$-	$-	$128.17

Mobility-related Product/Service Provider

data+

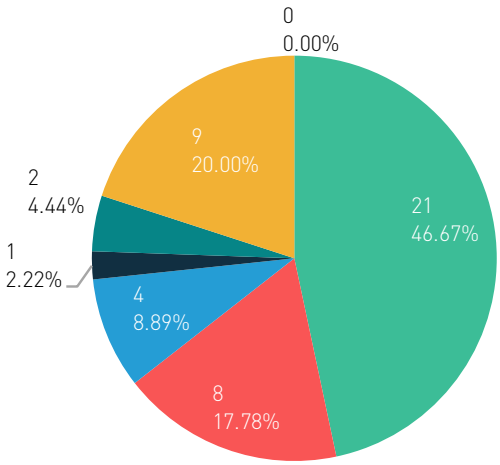
Mobility-related Product/Service Provider
Definition: Providers of services/products for drivers or passengers to improve their mobility experiences
Typical customers: consumers (drivers, passengers)
Examples of products/services: navigation app, parking space marketplace, dashcam

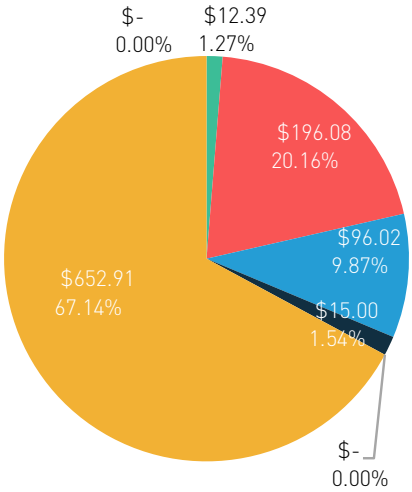
- Accelerator/Angel/Seed/Grant deals
- Early Stage VC
- Later Stage VC/Convertible Debt/PE Growth Expansion deals
- Corporate Financing
- Buyout/LBO
- Merger/Acquisition
- IPO

Deal distribution[1]

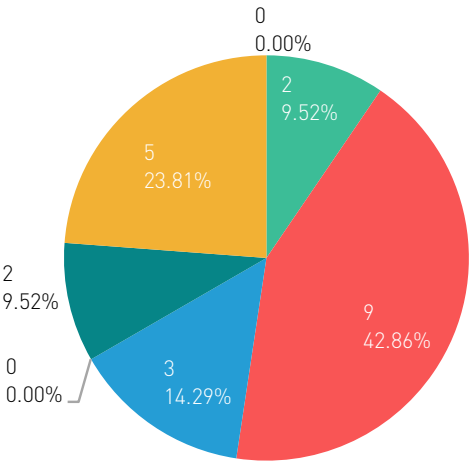
Funding distribution[2]

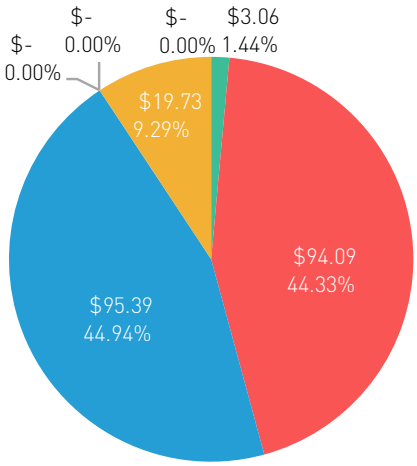
2017





2018





[1][2] deals not belonging to these categores are not included.

+data

Mobility-related Product/Service Provider

	2017	2018
$ Total capital raised (M)	**$987.70**	**$242.97**
# of deals	**48**	**24**
$ Average deal size (M)	**$35.28**	**$15.19**
Deal stats by type		
Accelerator/Angel/Seed/Grant		
# of deals	21	2
$ of deals (M)	$12.39	$3.06
$ Average deal size (M)	$1.03	$1.53
Early Stage VC		
# of deals	8	9
$ of deals (M)	$196.08	$94.09
$ Average deal size (M)	$28.01	$13.44
Later Stage VC/Convertible Debt/PE Growth Expansion		
# of deals	4	3
$ of deals (M)	$96.02	$95.39
$ Average deal size (M)	$24.01	$31.80
Corporate Financing		
# of deals	1	0
$ of deals (M)	$15.00	$-
$ Average deal size (M)	$15.00	$-
Buyout/LBO		
# of deals	2	2
$ of deals (M)	$-	$-
$ Average deal size (M)	$-	$-
Merger/Acquisition		
# of deals	9	5
$ of deals (M)	$652.91	$19.73
$ Average deal size (M)	$326.46	$6.58
IPO		
# of deals	0	0
$ of deals (M)	$-	$-
$ Average deal size (M)	$-	$-

Mobility-related Product/Service Provider

data+

verticals

+data

Mobility-related Product/Service Provider

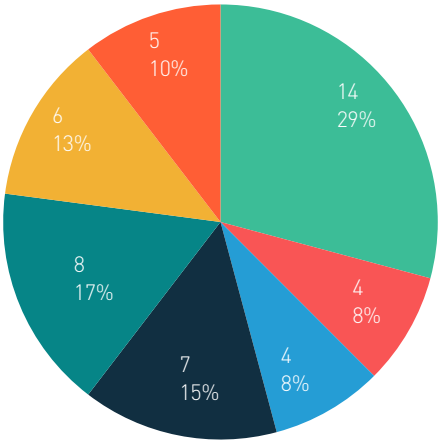
Mobility-related Product/Service Provider
Definition: Providers of services/products for drivers or passengers to improve their mobility experiences
Typical customers: consumers (drivers, passengers)
Examples of products/services: navigation app, parking space marketplace, dashcam

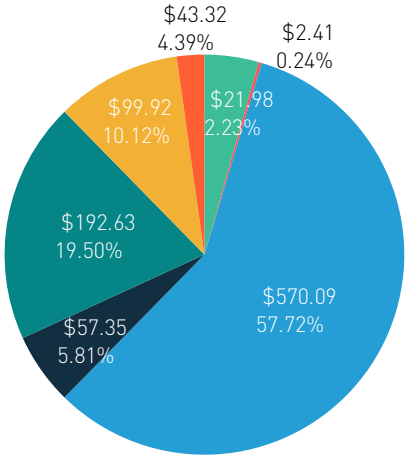
- Marketplace
- Information platform
- Parking service provider
- Voice control software
- Device
- Fuel-related
- Other

Deal distribution[1]

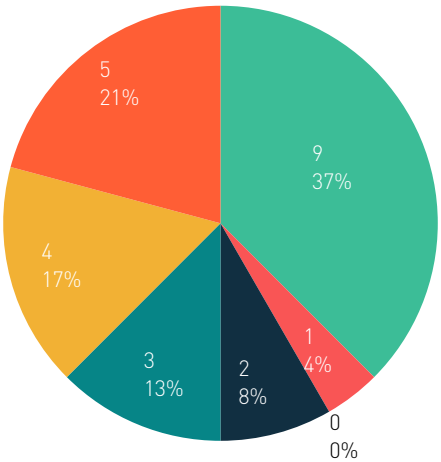
Funding distribution[2]

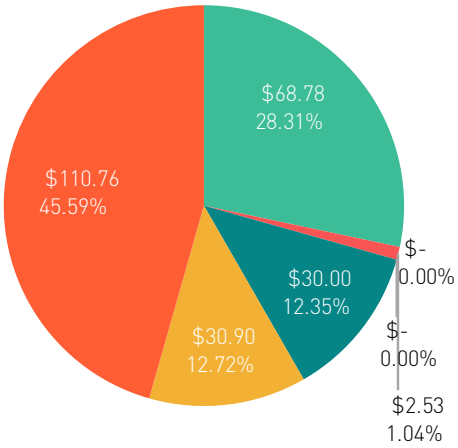
2017





2018





[1][2] deals not belonging to these categores are not included.

Mobility-related Product/Service Provider

data+

Vertical		Marketplace	Information platform	Parking service provider	Voice control software
$ Total Capital Raised (M) 2018		$68.78	$2.53	$-	$-
$ Total Capital Raised (M) 2017		$43.32	$2.41	$570.09	$57.35
# of Deals 2018		9	1	0	2
# of Deals 2017		14	4	4	7
$ Average Deal Size (M) 2018		$8.60	$2.53	$-	$-
$ Average Deal Size (M) 2017		$5.42	$1.21	$570.09	$11.47
Accelerator/Angel/Seed/ Grant	# of deals 2018	1	0	0	0
	# of deals 2017	7	3	0	2
	$ (M) 2018	$3.00	$-	$-	$-
	$ (M) 2017	$6.16	$2.41	$-	$1.41
	$ Average (M) 2018	$3.00	$-	$-	$-
	$ Average (M) 2017	$1.54	$1.21	$-	$1.41
Early Stage VC	# of deals 2018	5	0	0	2
	# of deals 2017	3	0	0	2
	$ (M) 2018	$50.39	$-	$-	$-
	$ (M) 2017	$5.95	$-	$-	$9.15
	$ Average (M) 2018	$10.08	$-	$-	$-
	$ Average (M) 2017	$1.98	$-	$-	$9.15
Later Stage VC/Convertible Debt/PE Growth Expansion	# of deals 2018	2	0	0	0
	# of deals 2017	1	0	0	1
	$ (M) 2018	$15.39	$-	$-	$-
	$ (M) 2017	$31.21	$-	$-	$31.49
	$ Average (M) 2018	$7.70	$-	$-	$-
	$ Average (M) 2017	$31.21	$-	$-	$31.49
Corporate Financing	# of deals 2018	0	0	0	0
	# of deals 2017	0	0	0	1
	$ (M) 2018	$-	$-	$-	$-
	$ (M) 2017	$-	$-	$-	$15.00
	$ Average (M) 2018	$-	$-	$-	$-
	$ Average (M) 2017	$-	$-	$-	$15.00
Buyout/LBO	# of deals 2018	0	0	0	0
	# of deals 2017	0	0	2	0
	$ (M) 2018	$-	$-	$-	$-
	$ (M) 2017	$-	$-	$-	$-
	$ Average (M) 2018	$-	$-	$-	$-
	$ Average (M) 2017	$-	$-	$-	$-
Merger/Acquisition	# of deals 2018	0	1	0	0
	# of deals 2017	3	1	2	0
	$ (M) 2018	$-	$2.53	$-	$-
	$ (M) 2017	$-	$-	$570.09	$-
	$ Average (M) 2018	$-	$2.53	$-	$-
	$ Average (M) 2017	$-	$-	$570.09	$-
IPO	# of deals 2018	0	0	0	0
	# of deals 2017	0	0	0	0
	$ (M) 2018	$-	$-	$-	$-
	$ (M) 2017	$-	$-	$-	$-
	$ Average (M) 2018	$-	$-	$-	$-
	$ Average (M) 2017	$-	$-	$-	$-

+data

Mobility-related Product/Service Provider

Vertical		Device	Fuel-related	Other	All
$ Total Capital Raised (M) 2018		$30.90	$110.76	$242.97	$7,823.73
$ Total Capital Raised (M) 2017		$99.92	$21.98	$987.70	$1,165.96
# of Deals 2018		4	5	24	47
# of Deals 2017		6	5	48	66
$ Average Deal Size (M) 2018		$10.30	$-	$15.19	$223.54
$ Average Deal Size (M) 2017		$33.31	$-	$35.28	$26.50
Accelerator/Angel/Seed/ Grant	# of deals 2018	0	1	2	18
	# of deals 2017	1	3	21	33
	$ (M) 2018	$-	$0.06	$3.06	$85.22
	$ (M) 2017	$2.10	$-	$12.39	$124.64
	$ Average (M) 2018	$-	$-	$1.53	$5.68
	$ Average (M) 2017	$2.10	$-	$1.03	$6.56
Early Stage VC	# of deals 2018	1	0	9	21
	# of deals 2017	0	2	8	20
	$ (M) 2018	$13.70	$-	$94.09	$1,194.54
	$ (M) 2017	$-	$21.98	$196.08	$359.31
	$ Average (M) 2018	$13.70	$-	$13.44	$74.66
	$ Average (M) 2017	$-	$-	$28.01	$21.14
Later Stage VC/Convertible Debt/PE Growth Expansion	# of deals 2018	0	1	3	2
	# of deals 2017	0	0	4	4
	$ (M) 2018	$-	$80.00	$95.39	$3,388.97
	$ (M) 2017	$-	$-	$96.02	$192.54
	$ Average (M) 2018	$-	$-	$31.80	$1,694.49
	$ Average (M) 2017	$-	$-	$24.01	$48.14
Corporate Financing	# of deals 2018	0	0	0	0
	# of deals 2017	0	0	1	0
	$ (M) 2018	$-	$-	$-	$-
	$ (M) 2017	$-	$-	$15.00	$-
	$ Average (M) 2018	$-	$-	$-	$-
	$ Average (M) 2017	$-	$-	$15.00	$-
Buyout/LBO	# of deals 2018	0	1	2	0
	# of deals 2017	0	0	2	1
	$ (M) 2018	$-	$-	$-	$-
	$ (M) 2017	$-	$-	$-	$-
	$ Average (M) 2018	$-	$-	$-	$-
	$ Average (M) 2017	$-	$-	$-	$-
Merger/Acquisition	# of deals 2018	3	1	5	2
	# of deals 2017	3	0	9	3
	$ (M) 2018	$17.20	$0.00	$19.73	$-
	$ (M) 2017	$82.82	$0.00	$652.91	$470.00
	$ Average (M) 2018	$8.60	$-	$6.58	$-
	$ Average (M) 2017	$82.82	$-	$326.46	$235.00
IPO	# of deals 2018	0	0	0	1
	# of deals 2017	0	0	0	0
	$ (M) 2018	$-	$-	$-	$44.00
	$ (M) 2017	$-	$-	$-	$-
	$ Average (M) 2018	$-	$-	$-	$44.00
	$ Average (M) 2017	$-	$-	$-	$-

Automobile Manufacturer

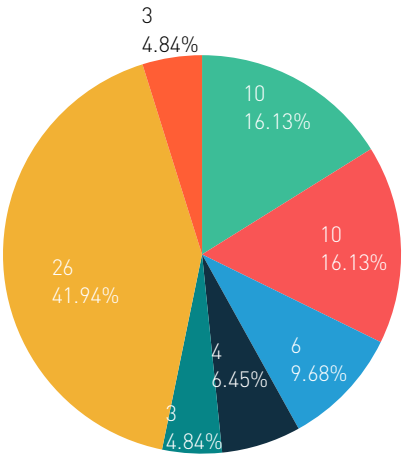
data+

Automobile Manufacturer
Definition: Manufacturers of cars, trucks, buses, and other types of vehicles
Typical customers: consumers, fleet owners
Examples of products/services: passenger car, commercial vehicle

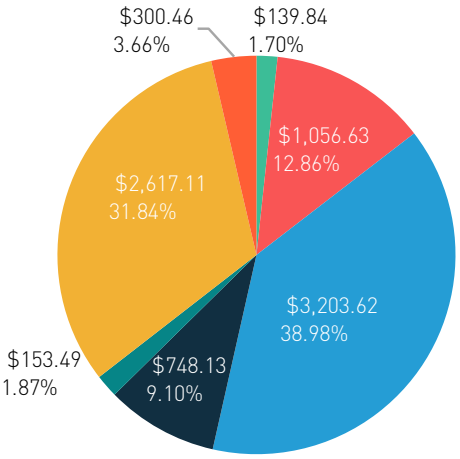
- Accelerator/Angel/Seed/Grant deals
- Early Stage VC
- Later Stage VC/Convertible Debt/PE Growth Expansion deals
- Corporate Financing
- Buyout/LBO
- Merger/Acquisition
- IPO

2017

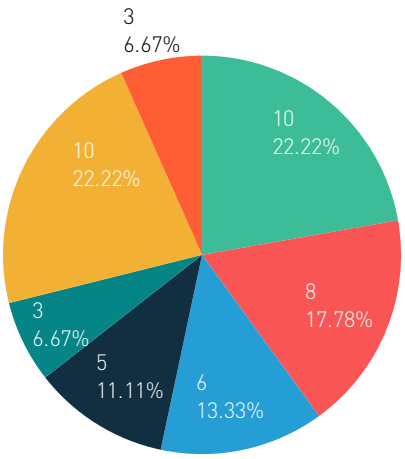
Deal distribution[1]

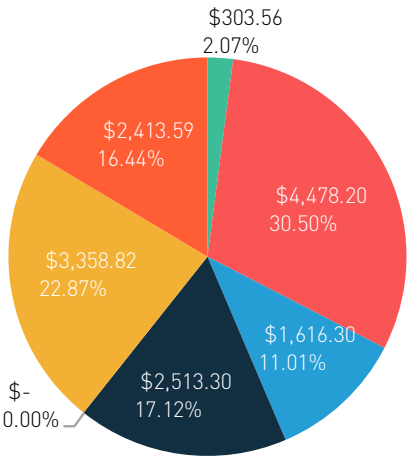


Funding distribution[2]



2018





[1][2] deals not belonging to these categores are not included.

+data

Automobile Manufacturer

	2017	2018
$ Total capital raised (M)	**$19,136.76**	**$29,903.93**
# of deals	**98**	**75**
$ Average deal size (M)	**$318.95**	**$712.00**
Deal stats by type		
Accelerator/Angel/Seed/Grant		
# of deals	10	10
$ of deals (M)	$139.84	$303.56
$ Average deal size (M)	$17.48	$60.71
Early Stage VC		
# of deals	10	8
$ of deals (M)	$1,056.63	$4,478.20
$ Average deal size (M)	$132.08	$895.64
Later Stage VC/Convertible Debt/PE Growth Expansion		
# of deals	6	6
$ of deals (M)	$3,203.62	$1,616.30
$ Average deal size (M)	$533.94	$404.08
Corporate Financing		
# of deals	4	5
$ of deals (M)	$748.13	$2,513.30
$ Average deal size (M)	$374.07	$837.77
Buyout/LBO		
# of deals	3	3
$ of deals (M)	$153.49	$-
$ Average deal size (M)	$153.49	$-
Merger/Acquisition		
# of deals	26	10
$ of deals (M)	$2,617.11	$3,358.82
$ Average deal size (M)	$201.32	$839.71
IPO		
# of deals	3	3
$ of deals (M)	$300.46	$2,413.59
$ Average deal size (M)	$100.15	$1,206.80

Auto Parts/Accessories Manufacturer/Distributor

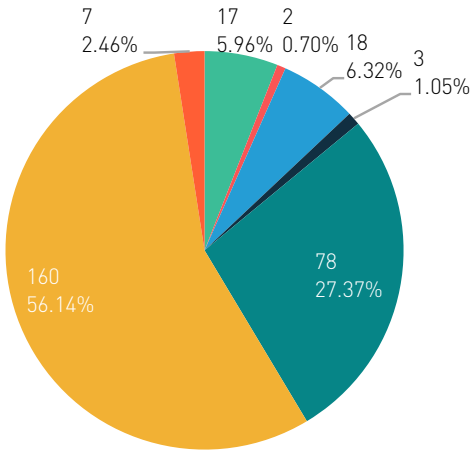
data+

Auto Parts/Accessories Manufacturer/Distributor
Definition: Suppliers of traditional and basic auto parts/accessories
Typical customers: OEMs, vehicle owners
Examples of products/services: brake, tire, wheel

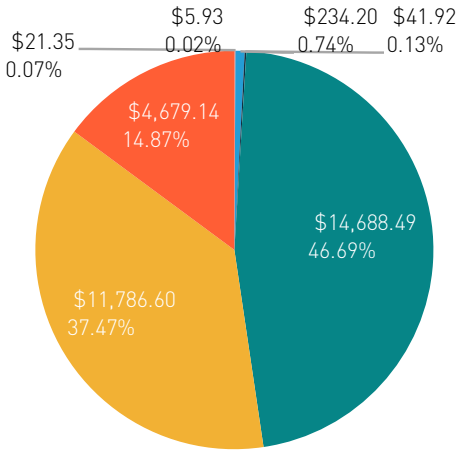
- Accelerator/Angel/Seed/Grant deals
- Early Stage VC
- Later Stage VC/Convertible Debt/PE Growth Expansion deals
- Corporate Financing
- Buyout/LBO
- Merger/Acquisition
- IPO

2017

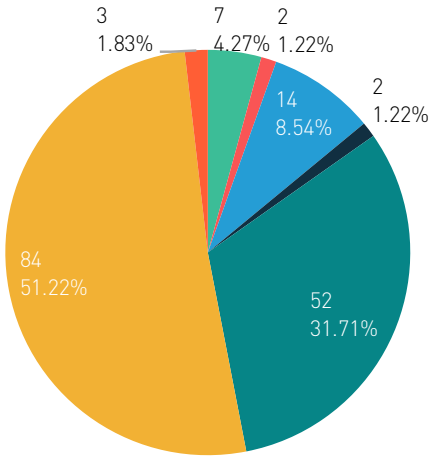
Deal distribution[1]

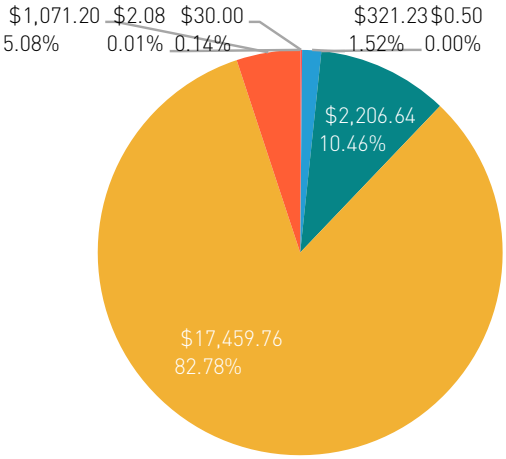


Funding distribution[2]



2018





[1][2] deals not belonging to these categores are not included.

+data

Auto Parts/Accessories Manufacturer/Distributor

	2017	2018
$ Total capital raised (M)	**$41,331.06**	**$24,358.37**
# of deals	**378**	**214**
$ Average deal size (M)	**$315.50**	**$320.50**
Deal stats by type		
Accelerator/Angel/Seed/Grant		
# of deals	17	7
$ of deals (M)	$5.93	$2.08
$ Average deal size (M)	$0.49	$0.30
Early Stage VC		
# of deals	2	2
$ of deals (M)	$21.35	$30.00
$ Average deal size (M)	$10.68	$30.00
Later Stage VC/Convertible Debt/PE Growth Expansion		
# of deals	18	14
$ of deals (M)	$234.20	$321.23
$ Average deal size (M)	$21.29	$40.15
Corporate Financing		
# of deals	3	2
$ of deals (M)	$41.92	$0.50
$ Average deal size (M)	$20.96	$0.50
Buyout/LBO		
# of deals	78	52
$ of deals (M)	$14,688.49	$2,206.64
$ Average deal size (M)	$1,224.04	$275.83
Merger/Acquisition		
# of deals	160	84
$ of deals (M)	$11,786.60	$17,459.76
$ Average deal size (M)	$261.92	$831.42
IPO		
# of deals	7	3
$ of deals (M)	$4,679.14	$1,071.20
$ Average deal size (M)	$779.86	$357.07

Motorcycle/Bicycle Manufacturer/Distributor

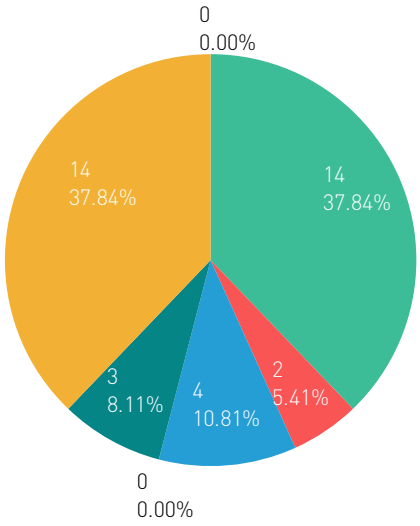
data+

Motorcycle/Bicycle Manufacturer/Distributor
Definition: Manufacturers/Distributors of motorcycles, scooters, and bicycles
Typical customers: consumers, fleet owners
Examples of products/services: motorcycle, scooter, bicycle

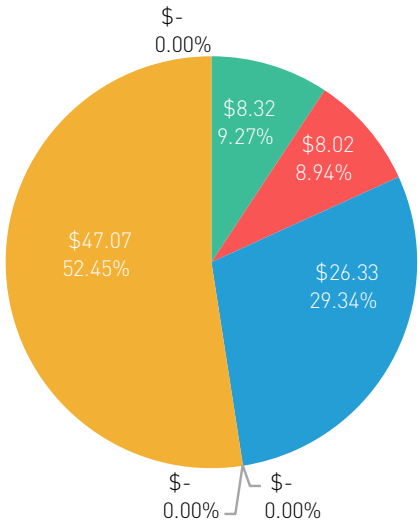
- Accelerator/Angel/Seed/Grant deals
- Early Stage VC
- Later Stage VC/Convertible Debt/PE Growth Expansion deals
- Corporate Financing
- Buyout/LBO
- Merger/Acquisition
- IPO

2017

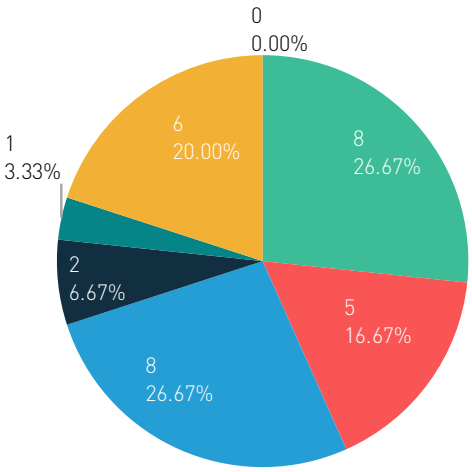
Deal distribution[1]

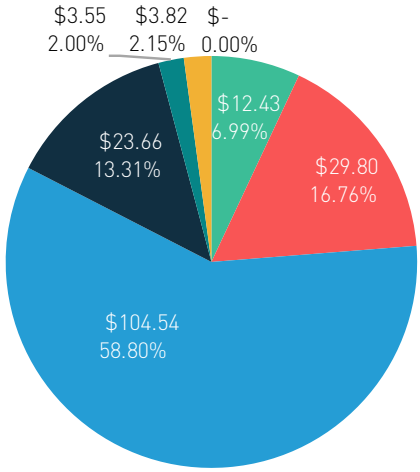


Funding distribution[2]



2018





[1][2] deals not belonging to these categores are not included.

+data

Motorcycle/Bicycle Manufacturer/Distributor

	2017	2018
$ Total capital raised (M)	**$99.01**	**$178.68**
# of deals	**45**	**32**
$ Average deal size (M)	**$4.71**	**$6.87**
Deal stats by type		
Accelerator/Angel/Seed/Grant		
# of deals	14	8
$ of deals (M)	$8.32	$12.43
$ Average deal size (M)	$0.92	$1.55
Early Stage VC		
# of deals	2	5
$ of deals (M)	$8.02	$29.80
$ Average deal size (M)	$8.02	$7.45
Later Stage VC/Convertible Debt/PE Growth Expansion		
# of deals	4	8
$ of deals (M)	$26.33	$104.54
$ Average deal size (M)	$8.78	$14.93
Corporate Financing		
# of deals	0	2
$ of deals (M)	$-	$23.66
$ Average deal size (M)	$-	$11.83
Buyout/LBO		
# of deals	3	1
$ of deals (M)	$-	$3.55
$ Average deal size (M)	$-	$3.55
Merger/Acquisition		
# of deals	14	6
$ of deals (M)	$47.07	$3.82
$ Average deal size (M)	$15.69	$1.91
IPO		
# of deals	0	0
$ of deals (M)	$-	$-
$ Average deal size (M)	$-	$-

Advanced Feature Developer

data+

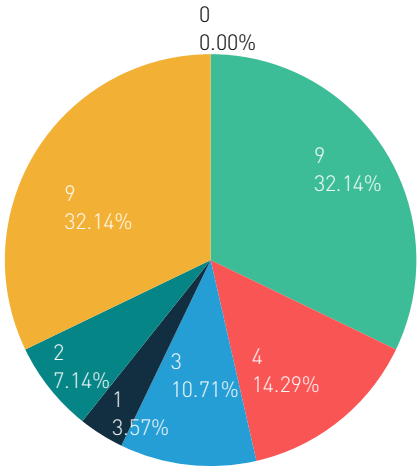
Advanced Feature Developer
Definition: Developers of software/hardware that provides add-on features for vehicles
Typical customers: OEMs, autonomous driving vehicle developers
Examples of products/services: connected car system, cybersecurity software/hardware

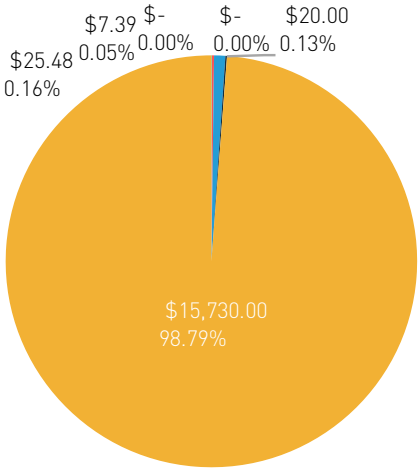
- Accelerator/Angel/Seed/Grant deals
- Early Stage VC
- Later Stage VC/Convertible Debt/PE Growth Expansion deals
- Corporate Financing
- Buyout/LBO
- Merger/Acquisition
- IPO

Deal distribution[1]

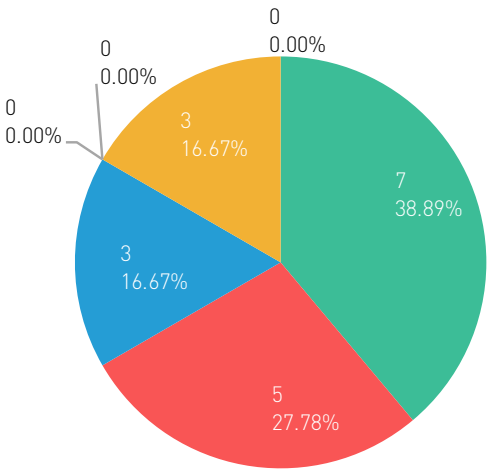
Funding distribution[2]

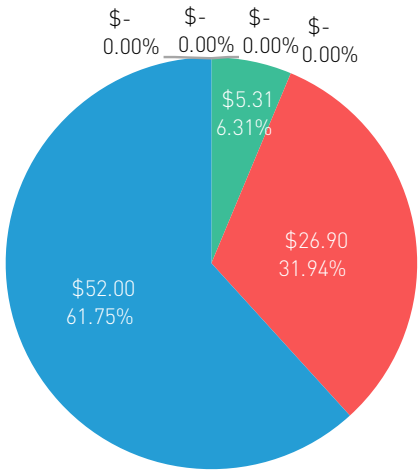
2017





2018





[1][2] deals not belonging to these categores are not included.

	2017	2018
$ Total capital raised (M)	**$15,922.87**	**$186.32**
# of deals	**30**	**24**
$ Average deal size (M)	**$1,224.84**	**$13.31**
Deal stats by type		
Accelerator/Angel/Seed/Grant		
# of deals	9	7
$ of deals (M)	$7.39	$5.31
$ Average deal size (M)	$1.48	$1.06
Early Stage VC		
# of deals	4	5
$ of deals (M)	$25.48	$26.90
$ Average deal size (M)	$8.49	$6.73
Later Stage VC/Convertible Debt/PE Growth Expansion		
# of deals	3	3
$ of deals (M)	$140.00	$52.00
$ Average deal size (M)	$70.00	$26.00
Corporate Financing		
# of deals	1	0
$ of deals (M)	$20.00	$-
$ Average deal size (M)	$20.00	$-
Buyout/LBO		
# of deals	2	0
$ of deals (M)	$-	$-
$ Average deal size (M)	$-	$-
Merger/Acquisition		
# of deals	9	3
$ of deals (M)	$15,730.00	$-
$ Average deal size (M)	$7,865.00	$-
IPO		
# of deals	0	0
$ of deals (M)	$-	$-
$ Average deal size (M)	$-	$-

Industry Technology/Service Provider

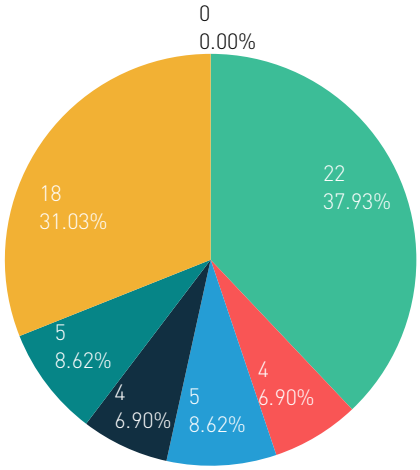
data+

Industry Technology/Service Provider
Definition: Providers of technologies/services to manufacturers/service operators to improve efficiency, safety.
Typical customers: OEMs, auto parts manufacturers, transportation/vehicle service providers
Examples of products/services: data management system, battery simulation software

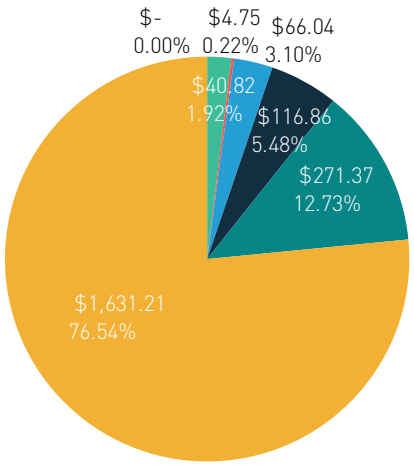
- Accelerator/Angel/Seed/Grant deals
- Early Stage VC
- Later Stage VC/Convertible Debt/PE Growth Expansion deals
- Corporate Financing
- Buyout/LBO
- Merger/Acquisition
- IPO

2017

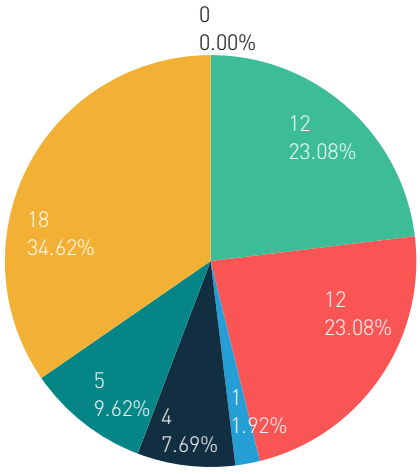
Deal distribution[1]

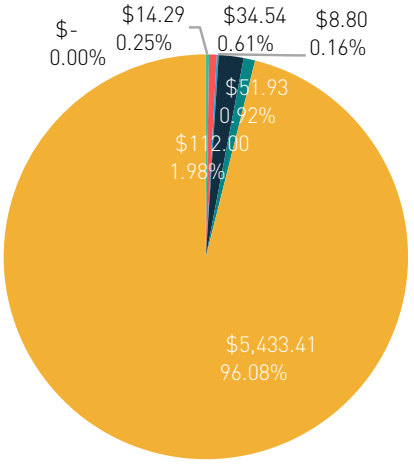


Funding distribution[2]



2018





[1][2] deals not belonging to these categores are not included.

+data

Industry Technology/Service Provider

	2017	2018
$ Total capital raised (M)	**$2,175.88**	**$5,654.97**
# of deals	**68**	**59**
$ Average deal size (M)	**$64.00**	**$235.62**
Deal stats by type		
Accelerator/Angel/Seed/Grant		
# of deals	22	12
$ of deals (M)	$40.82	$14.29
$ Average deal size (M)	$2.92	$2.38
Early Stage VC		
# of deals	4	12
$ of deals (M)	$4.75	$34.54
$ Average deal size (M)	$1.19	$3.45
Later Stage VC/Convertible Debt/PE Growth Expansion		
# of deals	5	1
$ of deals (M)	$66.04	$8.80
$ Average deal size (M)	$22.01	$8.80
Corporate Financing		
# of deals	4	4
$ of deals (M)	$116.86	$112.00
$ Average deal size (M)	$58.43	$112.00
Buyout/LBO		
# of deals	5	5
$ of deals (M)	$271.37	$51.93
$ Average deal size (M)	$135.69	$25.97
Merger/Acquisition		
# of deals	18	18
$ of deals (M)	$1,631.21	$5,433.41
$ Average deal size (M)	$271.87	$1,358.35
IPO		
# of deals	0	0
$ of deals (M)	$-	$-
$ Average deal size (M)	$-	$-

Alternative Mobility Solution Developer

data+

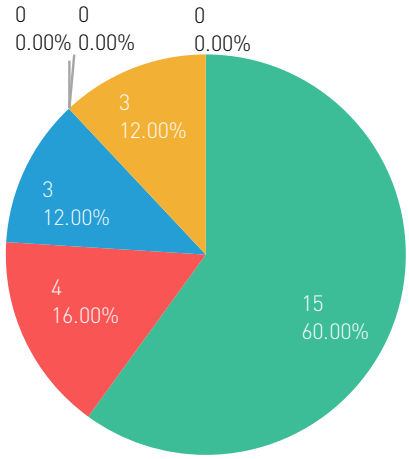
Other
Definition: Companies that do not belong to any of the above categories
Typical customers: N/A
Examples of products/services: traffic management system, smart road system

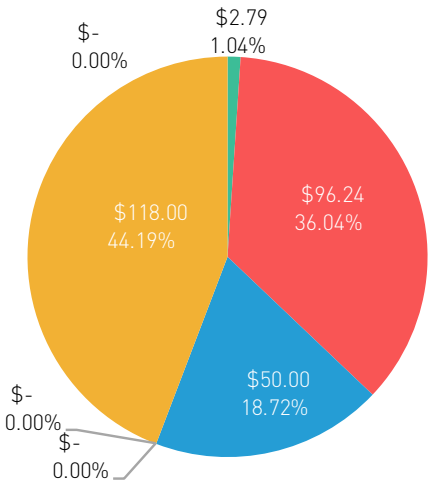
- Accelerator/Angel/Seed/Grant deals
- Early Stage VC
- Later Stage VC/Convertible Debt/PE Growth Expansion deals
- Corporate Financing
- Buyout/LBO
- Merger/Acquisition
- IPO

Deal distribution[1]

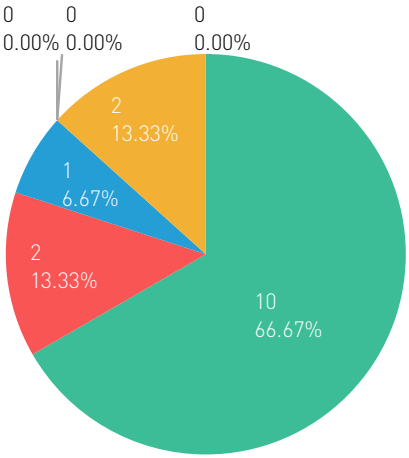
Funding distribution[2]

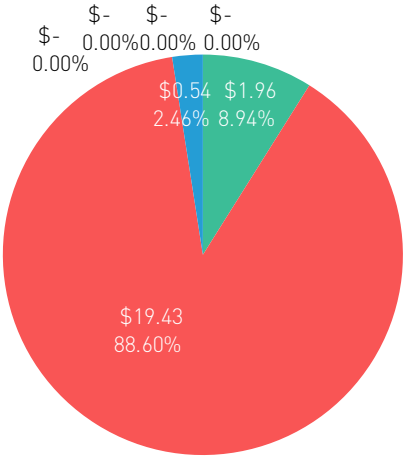
2017





2018





[1][2] deals not belonging to these categores are not included.

+data

Alternative Mobility Solution Developer

	2017	2018
$ Total capital raised (M)	**$267.33**	**$21.93**
# of deals	**26**	**16**
$ Average deal size (M)	**$17.82**	**$2.74**
Deal stats by type		
Accelerator/Angel/Seed/Grant		
# of deals	15	10
$ of deals (M)	$2.79	$1.96
$ Average deal size (M)	$0.31	$0.39
Early Stage VC		
# of deals	4	2
$ of deals (M)	$96.24	$19.43
$ Average deal size (M)	$32.08	$9.72
Later Stage VC/Convertible Debt/PE Growth Expansion		
# of deals	3	1
$ of deals (M)	$50.00	$0.54
$ Average deal size (M)	$50.00	$0.54
Corporate Financing		
# of deals	0	0
$ of deals (M)	$-	$-
$ Average deal size (M)	$-	$-
Buyout/LBO		
# of deals	0	0
$ of deals (M)	$-	$-
$ Average deal size (M)	$-	$-
Merger/Acquisition		
# of deals	3	2
$ of deals (M)	$118.00	$-
$ Average deal size (M)	$118.00	$-
IPO		
# of deals	0	0
$ of deals (M)	$-	$-
$ Average deal size (M)	$-	$-

Other

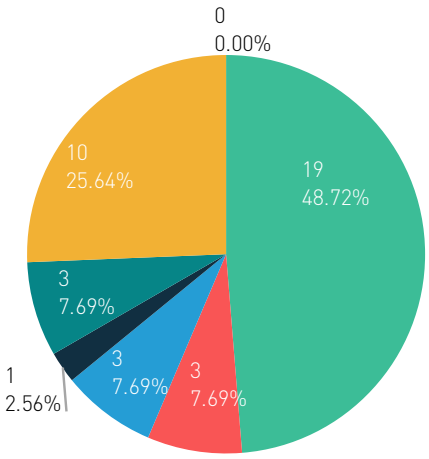
data+

Auto Parts/Accessories Manufacturer/Distributor
Definition: Suppliers of traditional and basic auto parts/accessories
Typical customers: OEMs, vehicle owners
Examples of products/services: brake, tire, wheel

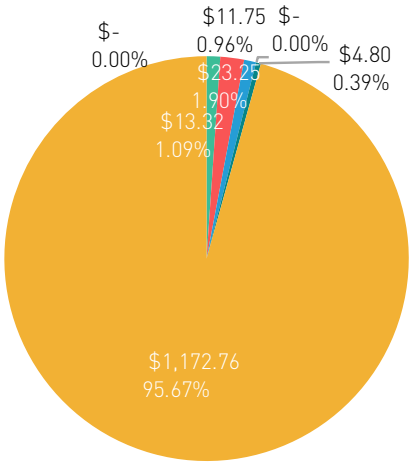
- Accelerator/Angel/Seed/Grant deals
- Early Stage VC
- Later Stage VC/Convertible Debt/PE Growth Expansion deals
- Corporate Financing
- Buyout/LBO
- Merger/Acquisition
- IPO

2017

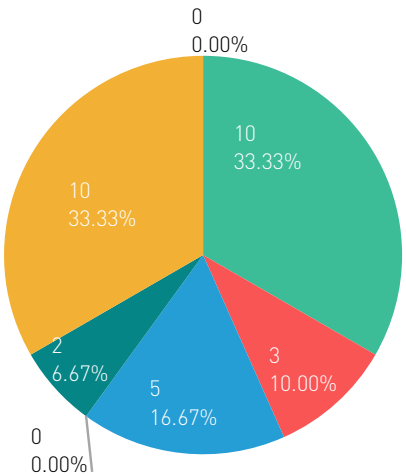
Deal distribution[1]

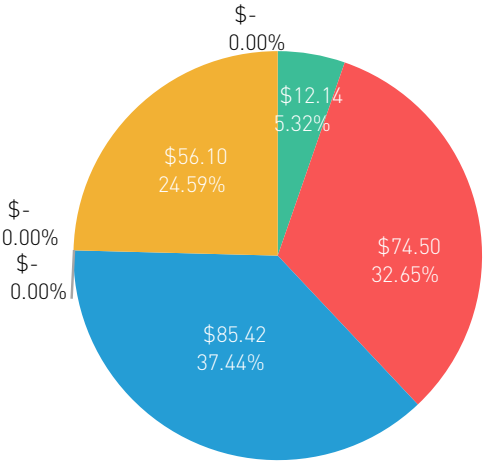


Funding distribution[2]



2018





[1][2] deals not belonging to these categores are not included.

	2017	2018
$ Total capital raised (M)	**$3,710.81**	**$393.50**
# of deals	**44**	**33**
$ Average deal size (M)	**$161.34**	**$23.15**
Deal stats by type		
Accelerator/Angel/Seed/Grant		
# of deals	19	10
$ of deals (M)	$13.32	$12.14
$ Average deal size (M)	$1.11	$1.52
Early Stage VC		
# of deals	3	3
$ of deals (M)	$23.25	$74.50
$ Average deal size (M)	$11.63	$37.25
Later Stage VC/Convertible Debt/PE Growth Expansion		
# of deals	3	5
$ of deals (M)	$11.75	$85.42
$ Average deal size (M)	$5.88	$21.36
Corporate Financing		
# of deals	1	0
$ of deals (M)	$-	$-
$ Average deal size (M)	$-	$-
Buyout/LBO		
# of deals	3	2
$ of deals (M)	$4.80	$-
$ Average deal size (M)	$4.80	$-
Merger/Acquisition		
# of deals	10	10
$ of deals (M)	$1,172.76	$56.10
$ Average deal size (M)	$390.92	$28.05
IPO		
# of deals	0	0
$ of deals (M)	$-	$-
$ Average deal size (M)	$-	$-

AUTOMOTIVE & MOBILITY INVESTMENT 2017 - 2018

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