SE / Strategy Engineers

Global new mobility market insights.

Analysis of global start-up investments in the C.A.S.E. segments

White Paper

Giving substance to reality.

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Management Summary

The current and future – partly disruptive – trends in the automotive industry / the personal mobility space have attracted substantial interest with financial and strategic investors:

- Since 2010, **US$ 163 bn** have been **invested** in start-up companies active in the so-called **C.A.S.E. segments** (**C**onnectivity, **A**utonomous driving, **S**mart mobility, **E**lectrification), most of the funding after 2013
- **Smart mobility has attracted the largest funding** (55%), but **electrification** (32%) and **autonomous driving** (10%) have raised increasing funds especially after 2015 (whilst smart mobility has lower investments since 2017)
- **Asian/Chinese** and **North American** start-ups have received **95% of all funds**, Europe has fallen short dramatically, capturing 3% of funding
- **Asia/China** has attracted the **largest funds for smart mobility** whilst **North America** is the **leading place for autonomous driving systems**
- Funding has been largely concentrated on a few leading players: **31 C.A.S.E. start-up companies have received 80%** of all funding; the **top ten players account for 60%** of all funding
- Among the **top 10** companies, **four are based in Asia/China** and **six in North America;** focus is on ride-hailing, new EV OEMs and autonomous driving systems; **none of those are based in Europe**

In summary, new mobility start-ups have received funds, which give them the financial means to substantially impact the automotive industry, especially in the fields of smart mobility, autonomous driving and electrification.

The enormous momentum with C.A.S.E.-related start-ups has by-passed Europe, which is a fundamental issue.

Substantial corporate investments and stronger engagement in these new topics are needed for Europe to not lose connection to evolving mobility trends.

Introduction

As a consulting firm specialized in the automotive industry and mobility, our clients expect us to anticipate future trends and changes in the mobility space so that they can take sound decisions how to shape their own futures.

Hence, we continuous conduct market and technology analyses to generate the required business intelligence.

One of our activities is the monitoring of global start-up funding in the C.A.S.E. mobility segments:

- **C**onnectivity
- **A**utonomous driving
- **S**mart mobility
- **E**lectrification.

Thereby, we identify new technologies and business models. We observe changing investment priorities and analyse innovation strategies of investors as well as industrial players.

In this white paper, we share some of our findings regarding the following topics:

- Development of global C.A.S.E. start-up funding since 2010
- Regional development of C.A.S.E. start-up funding
- Development of C.A.S.E. sub-segments
- Funding structures and leading C.A.S.E. start-up companies

We do hope that you and your business benefit from these insights and we are looking forward to having further discussions with you.

Development of global C.A.S.E. start-up funding since 2010

In the past decade, almost US$ 163 bn of cumulative investments have been poured into C.A.S.E. start-up companies.

With a share of 55%, smart mobility companies form the largest segment – followed by electrification, autonomous driving and connectivity (see Figure 1).

$ 163 bn

global funding in C.A.S.E. start-ups since 2010

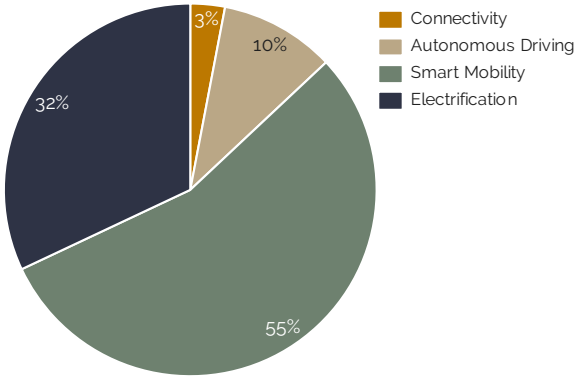

Figure 1: Share of start-up funding by C.A.S.E. segments (2010 – 2019) – TOTAL; $ 163 bn (source: Strategy Engineers, Crunchbase)

Funding has substantially grown since 2013 and peaked in 2017 with almost 17 times higher funding amounts (2017 vs. 2013). In the years since 2017, we see a substantial decline as depicted in Figure 2.

During the course of the last years, smart mobility was the main funding focus (69% of funding in 2017, mainly caused by unicorn deals like Uber and Didi). However, since 2016, electrification and autonomous driving have increasingly gained investors' attention.

1,580%

growth in annual C.A.S.E. start-up funding from 2013 to 2017

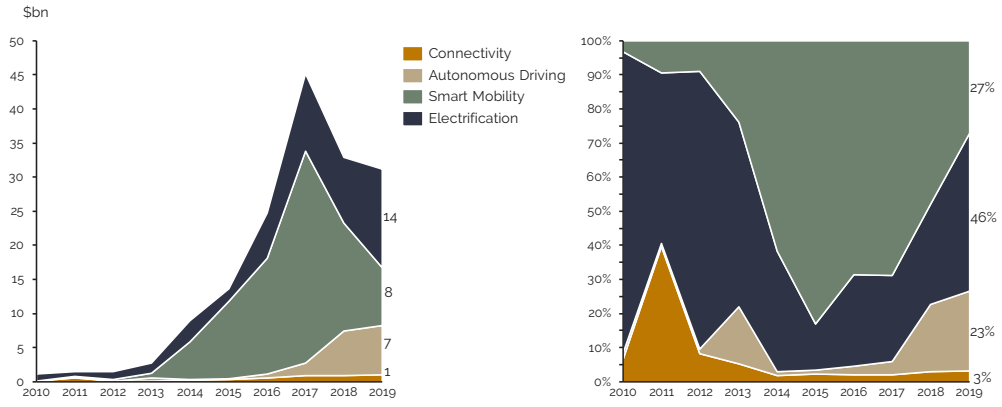

Figure 2: Absolute ($ bn) and relative C.A.S.E. funding by segment since 2010 (Source: Strategy Engineers, Crunchbase)

Regional development of C.A.S.E. start-up funding

95%

share of C.A.S.E. start-up funding with Asian / Chinese and North American companies

Asia (mainly China) and North America (mainly the USA) have received 95% of worldwide funding with almost equal shares.

With 49%, Asia is the biggest source of capital, followed by North America (34%) and Europe (13%, see Figure 3 for full detail).

Not only is Europe critically underrepresented in terms of received start-up funding (3%), but most of Europe-originated funding is invested in North America and Asia.

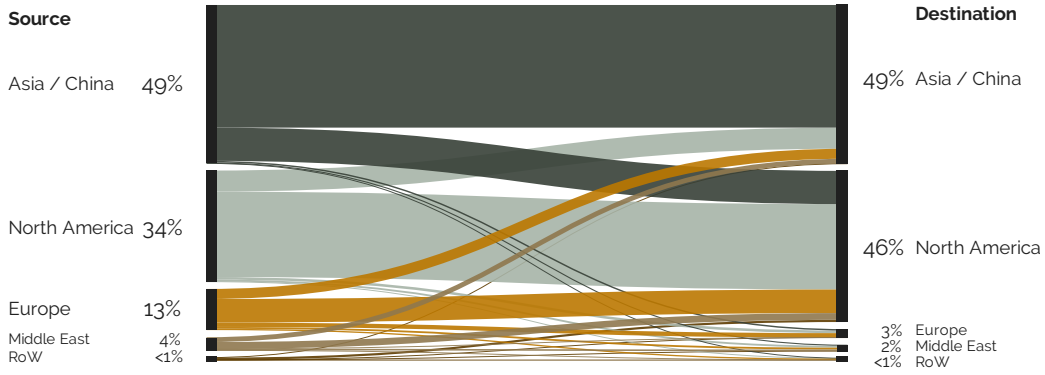

Figure 3: Sources and destinations of C.A.S.E. funding by regions (Source: Strategy Engineers, Crunchbase)

82%

share of autonomous driving funding in N.A.

Amongst the funding in key regions (Asia/China, North America and Europe), smart mobility has been the largest investment focus, followed by electrification and autonomous driving.

North America has developed into the leading region for autonomous driving, whilst Asia/China has the strongest focus on smart mobility across all three regions (see Figure 4).

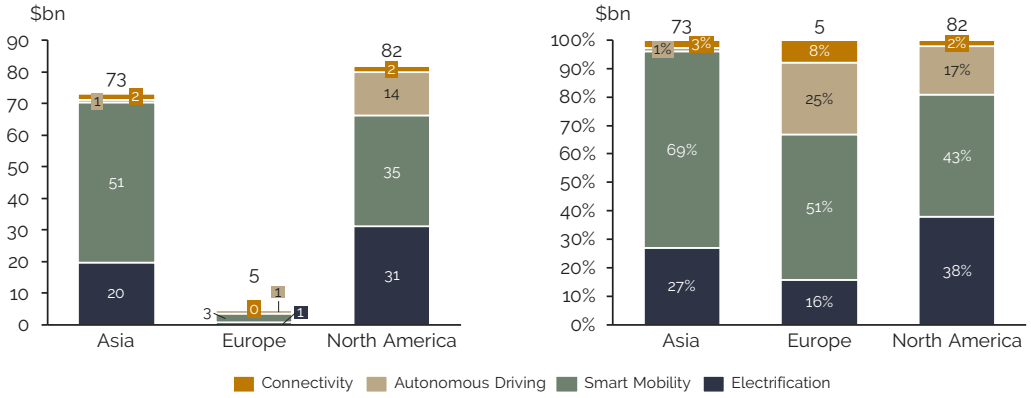

Figure 4: Cumulated (absolute and relative) C.A.S.E. funding by segments and region (Source: Strategy Engineers, Crunchbase)

Development of C.A.S.E. sub-segments

While the C.A.S.E. investment sector comprises numerous new technologies and business models, selected main subsegments have drawn most of the funding (see figure 5).

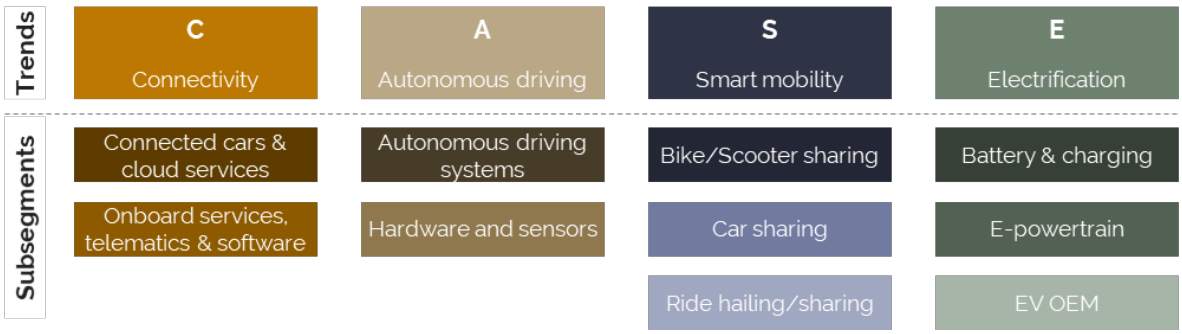

Figure 5: C.A.S.E. trends and respective subsegments (source: Strategy Engineers)

Figure 6 summarises the investments by region and sub-segment. In connectivity, there is an almost equal split between cloud-backed connected car services and in-car connectivity services and software. In autonomous driving, most funds were on autonomous driving systems and less on required hardware and sensors. In smart mobility, ride-hailing /sharing companies have attracted the largest funds by far. Only China has a notable share in bike and scooter sharing. Car sharing does not play a big role globally. For electrification the largest funds have gone to new electric vehicle (EV) OEMs in North America/USA. Only a small portion to e-powertrain companies and a notable share to battery-/charging companies in North America.

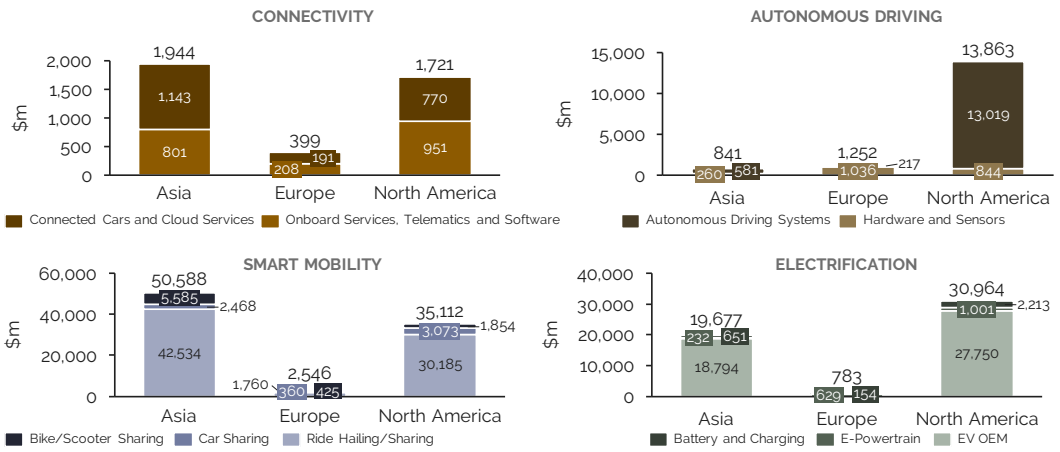

Figure 6: Cumulated investments in the subsegments of Autonomous Driving, Smart Mobility, Electrification and Connectivity by region (source: Strategy Engineers, Crunchbase)

Funding structures and leading C.A.S.E. start-up companies

60%

share of total C.A.S.E. funding received by top 10 start-ups

C.A.S.E. funding has been quite concentrated: 80% of all start-up funding has been allocated to 31 companies; the top 10 highest funded start-ups account for 60% of total funding.

Among the 31 highest funded companies, 17 (54%) are from China while 11 (35%) are based in the USA (see Figure 7). No European start-up is represented within the 31 highest funded companies, which correlates with the lack of global funding in Europe (see Figure 3).

Within the top 10 funded start-ups five offer ride-hailing, three are EV OEMs and two focus on autonomous driving. Ride hailing companies are represented in Asia (Didi, Grab, Ola) and in the USA (Uber, Lyft). Within the EV OEM segment, Tesla is leading by far with $21bn collected funds, followed by NIO ($4bn) & Rivian ($3bn). Notable is that Tesla has raised over five times more funding than other EV OEMs. Top autonomous driving start-ups are all based in the USA, the largest one is Cruise ($5bn) followed by Argo AI ($4bn).

The fact that no single European start-up has attracted significant funding shows the substantial need for corporate investments and stronger engagement in new mobility trends.

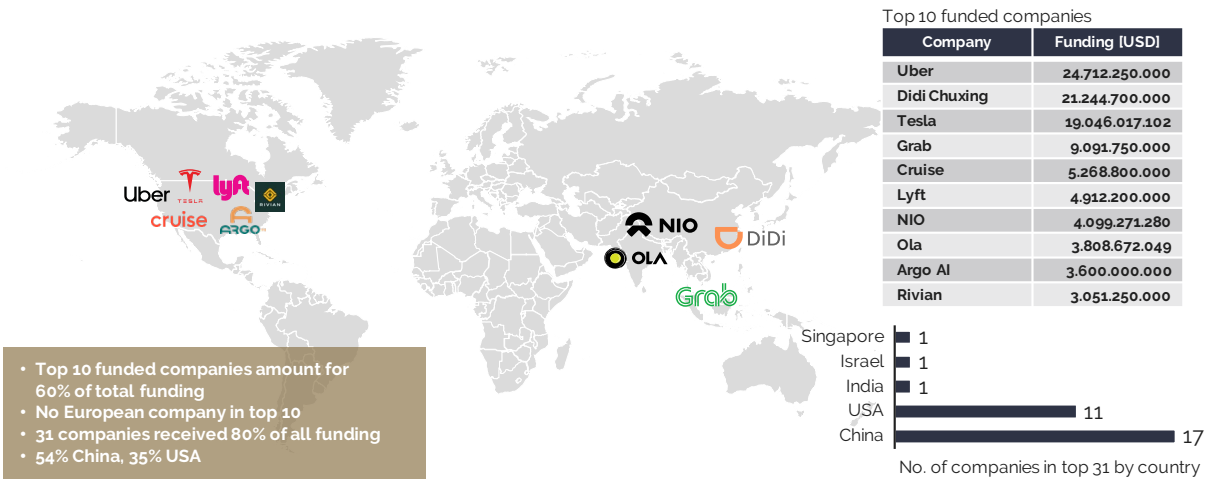

Figure 7: Funding and localization of top 10 funded companies; top 31 funded companies by country (source: Strategy Engineers, Crunchbase)

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About SE / Strategy Engineers

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Giving substance to reality.

We believe that you have a near limitless, yet untapped, potential for excellence. Our vision is to help you realise what you're capable of. We aim to bring our experience and processes into partnership with your brand, your values and your ideas, not just so you can survive in this ever-changing automotive landscape, but so that you can go much, much further. All that we ask is that you dream big, because together we can give substance to your dreams, making them – and the hopes of a brighter, more innovative world – a reality.

SE / Strategy Engineers

In 2020, we have been honoured as „Best Consultants" in Germany for the seventh time in our nine-year company history. The award is based on actual client feedback and is respected as the leading award for the German consulting industry.

Best Consultants

7x in a row!

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