

A Work Project, presented as part of the requirements for the Award of a Master's degree in Impact Entrepreneurship and Innovation from the Nova School of Business and Economics.

UBER'S SCALE-UP – Case Study:

Introduction of Autonomous Vehicles to Scale Uber's Business Model

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Abstract

Uber has a responsibility to continue development and targeted execution, as seen by its overwhelming interest in the advancement of its services. The ability to connect drivers and passengers via mobile devices eliminates the need for Uber to have a physical presence in local areas where they expand operations, resulting in a highly scalable system with few barriers to further development. Uber's historic development has been marked by controversies, technological advancements, protests, and bright new ideas. To assess its journey to the top of the mobility industry, general highlights about financials, historic developments, and the entrepreneurial transition from startup to scaleup are showcased.

Using the given information as groundwork, our individual parts focus on specific challenges Uber faced, and how it utilized certain approaches to overcome obstacles. The individual sub cases shine light on Uber's fight against taxi regulations, the network effects behind the app, marketing efforts, service integration and autonomous cars, as well as the profitability issue.

This sub case features Uber's existing service offering. Former technological ventures – flying passenger drones, electric cars, autonomous vehicles – are portrayed to create an understanding for Uber's future endeavors. Since external and internal aspects depict self-driving cars as promising means to Uber's profitability issue and key to operational scalability, Uber's plans to deploy driverless fleets are highlighted. Students are encouraged to analyze the company's decisions and discuss possible scenarios with respect to scaling a platform business.

Keywords

Uber, Case study, Teaching note, Scaling, Growth, Expansion, Services, Technology, Innovation, Flying passenger drones, VTOL, Electric vehicles, EV, Autonomous vehicles, AV, Automatization, Robots, Platform, Vertical integration, Make or buy, Partnership

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Introduction

Uber first started as a platform which connects drivers and riders, intending to facilitate mobility. The idea was to request a ride by simply tapping your phone. For the first time, people were able to order a ride from the exact location they were standing in. You just need to go to Uber's app on your phone, specify a location and a destination, and wait for the software to pair you with a driver. As soon as a driver is selected, you receive information about them (their name, ranking based on the other users' feedback, photo, and their vehicle's license plate and description), and the cost of the ride in advance. This was a huge breakthrough when compared to the traditional taxis at the time, in which you wouldn't receive any information regarding the driver, and the fares were based on the path chosen by the driver (many times manipulated to increase the cost) or stop-and-go traffic. In addition to this, Uber's app has the option to share your ride with friends/family/colleagues, which enhances its safety compared to traditional taxis. Considering all these factors, it is no surprise that this innovative idea disrupted the entire private car hire industry.

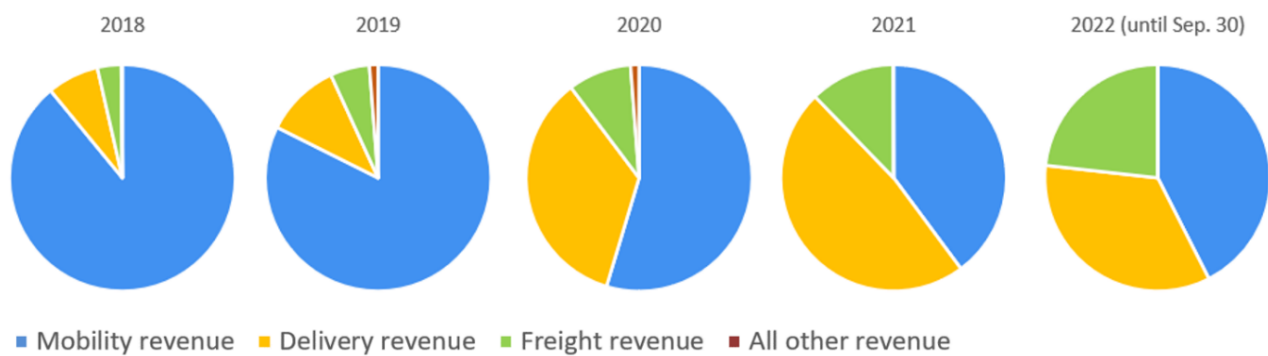
Operating Segments and Sources of Revenue

Even though Uber started as a ride-hailing service, it didn't take long until it expanded into other business units. Currently, Uber has three operating segments and sources of revenue: (i) *Mobility*, its ride-hailing business, previously known as Rides; (ii) *Delivery*, its food and groceries delivery network, previously called Eats; and (iii) *Freight*, its freight transaction services provided to shippers. Nonetheless, the mobility segment continues to represent the primary source of revenue, as shown in **Figure 1** below, apart from 2021, where the global demand for mobility reduced, while the demand for delivery increased, due to the Covid-19 pandemic. In addition to the three operating segments mentioned previously, Uber's other

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source of revenue, stated as “all other revenue” primarily includes its ATG “Advanced Technologies Group” business – a subsidiary focused on the development and commercialization of autonomous vehicle technology, which results from a 3-year collaboration agreement entered in 2019 –, and its New Mobility offerings and products, which provide users access to ride through a variety of modes, including dockless e-bikes and e-scooters. However, after the sale of its ATG business on January 19, 2021, to Aurora – an American self-driving vehicle technology company –, all other revenue values became insignificant.

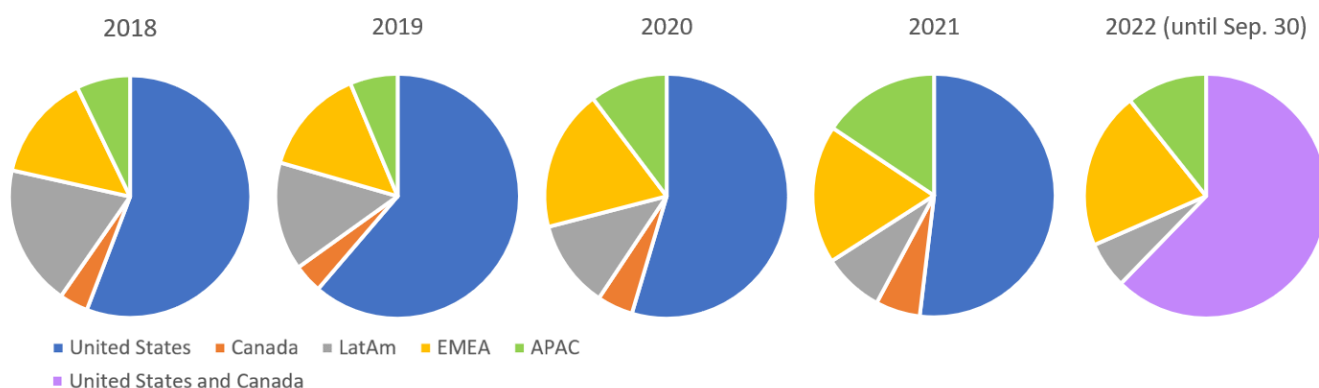
Figure 1: Revenue by segments from 2018 until 2022 (September 30).



Source: Uber Technologies Inc., Annual Reports

Currently, Uber operates in 10,500 cities across approximately 70 countries (Uber Technologies, Inc. 2022). The United States is Uber's main source of revenue, representing more than 50% of all revenue, as shown in **Figure 2** below. LatAm used to come in second until 2019, however it was eventually surpassed by EMEA and APAC, the second place belonging to EMEA.

Figure 2: Revenue by geography from 2018 until 2022 (September 30).



Note: In 2022, there's no separate revenue information regarding the United States and Canada.

Source: Uber Technologies Inc., Annual Reports

Operating Expenses

Uber's operating expenses comprise (i) Cost of revenue – core platform insurance expenses, credit card processing fees, bank fees, data center and networking expenses, chargebacks losses, mobile device, and service costs –, (ii) Operations and support – compensation expenses, including stock-based compensation, for employees that support operations in cities –, (iii) Sales and marketing – compensation costs, including stock-based compensation, to sales and marketing employees, advertising costs, product marketing costs and discounts, loyalty programs, promotions, refunds, and credits provided to end-users who are not customers –, (iv) Research and development – compensation costs, including stock-based compensation, for employees in engineering, design and product development, as well as expenses associated with ongoing improvements and maintenance of existing products and services –, (v) General and administrative – compensation costs, including stock-based compensation, for executive management and administrative employees, allocation of certain corporate costs, occupancy,

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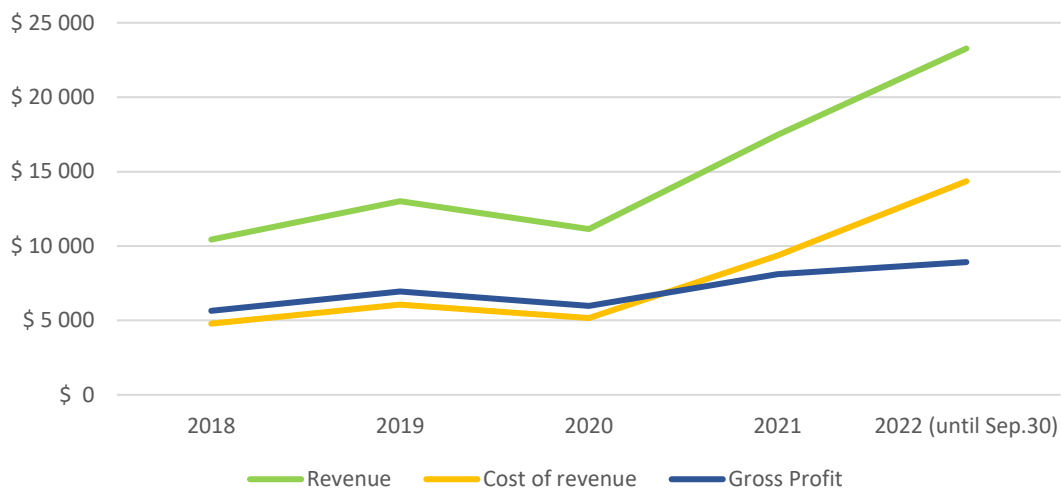
and general corporate insurance costs –, and finally (vi) Depreciation and amortization – depreciation on buildings, site improvements, computer and network equipment, software, leasehold improvements, furniture and fixtures, and amortization of intangible assets. The three biggest chunks of operating expenses are the cost of revenues, sales and marketing, and general and administrative, which constitute an average of 39%, 21%, and 14% respectively of the total operating expenses in the last 5 years (**Exhibit 1**).

Revenue and Gross Profit Margin

Since 2020, Uber's revenue has been steeply increasing, accompanied by its cost of revenue, as shown in **Figure 3** below (values in **Exhibit 2**). However, its gross profit margin, which was stable from 2018 until 2020, has been gradually decreasing since 2020, as shown in **Figure 4** below (values in **Exhibit 2**). This is a reflection of a higher growth rate of the cost of revenue in comparison with revenue. The revenue's compound annual growth rate (CAGR) was 22% since 2018, while the cost of revenue's CAGR was 32%, leading to a gross profit margin CAGR of minus 8% (**Exhibit 3**). This contradicts Uber's plan that scaling up will lead to economies of scale, and consequently, profitability. However, one must acknowledge the uncertainty in the past years marked by a global pandemic, supply-chain crisis, and the imminent recession (also caused by an inflationary period).

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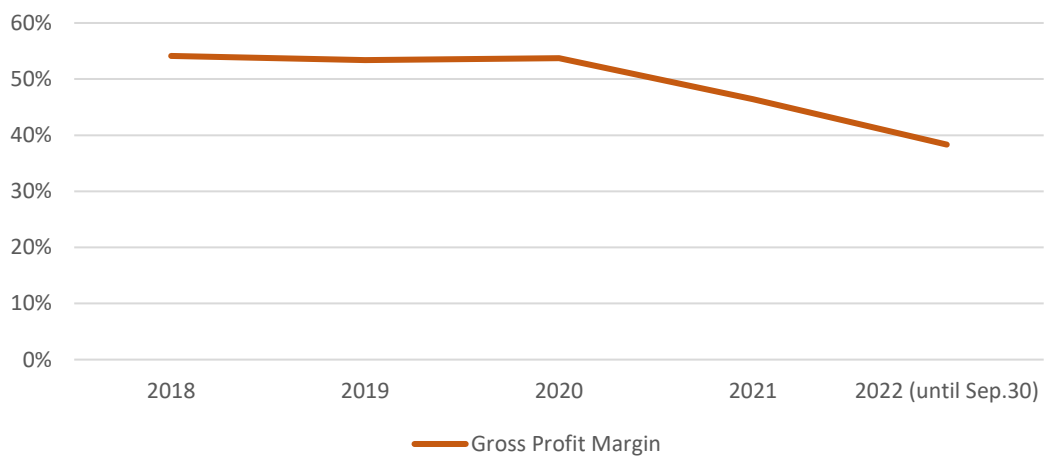
Figure 3: Gross profit evolution from 2018 until 2022 (September 30).



Note: All values are in millions.

Source: Uber Technologies, Inc., Annual Reports

Figure 4: Gross profit margin evolution from 2018 until 2022 (September 30).



Source: Uber Technologies, Inc., Annual Reports

Other Income or Expenses

By looking at Uber's consolidated statements of operation, one can observe the significance of other income in the net loss/income attributable to Uber (**Exhibit 4**). This being said, the analysis of the constitution of the other income seems relevant, as well as the comprehension of the item that had the greatest impact (**Exhibit 5**). In 2018, Uber realized a \$3.2 billion gain with the completion of two divestitures, the disposition with a retained interest of its Russia/CIS operations and the sale of its Southeast Asia operations (Uber Technologies, Inc. 2019). In 2019, the gain on extinguishment of convertible assets and settlement of derivatives increased by \$444 million caused by the conversion of Uber's 2021 and 2022 convertible notes and the settlement of the related derivative in connection with its IPO. In 2020, the company had a \$1.7 billion impairment of its investment in Didi (Uber Technologies, Inc. 2020). In the first quarter of 2021, Uber realized a \$1.6 billion gain on the sale of its ATG business to Aurora. In addition to this, in 2021, the firm had unrealized gains of \$1.6 billion, \$1.6 billion, and \$991 million on its Grab, Aurora, and Zomato investments respectively, which were partially offset by an unrealized loss of \$3 billion on its Didi investment (Uber Technologies, Inc. 2021). Finally in 2022 (until September 30), Uber recognized \$2.7 billion, \$2.4 billion, and \$1.8 billion net losses, and a \$747 million change of fair value on its Aurora, Grab, Didi, and Zomato investments (Uber Technologies, Inc. 2022). Accompanied by a \$106 million net loss on its other investments in securities accounted for under the fair value option.

Main Competitors

One might say Lyft is Uber's biggest competitor. Lyft is based in San Francisco and offers mobility – in the form of ridesharing, electric bikes and scooters, and rental cars – and food delivery services. Following Lyft, DiDi and OLA Cabs represent some of Uber's main

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competitors. However, there is not any company that offers the same range of services as Uber (**Exhibit 6**), hence it seems opportune to present a competitive landscape by segment. Nonetheless, it sounds reasonable to analyze Uber's main competitors in the mobility and delivery segments, since these are the only segments where Uber is actually fighting for a dominant position in the market.

Starting with mobility, there is an intense level of competition in the ride-sharing industry. Lyft, Uber's main opponent, operates in 644 cities in the United States and 12 cities in Canada (Iqbal, Business of Apps 2022). In addition to Lyft, it is also worth mentioning Didi and Ola Cabs. As of December 31, 2021, DiDi, a Chinese transportation services company, provides its services across over 400 cities in 18 countries, operating mainly in China and with a strong market position in Latin America (DiDi Global Inc. 2021). It is often called the "Uber of China". Ola Cabs, an Indian ridesharing company, conducts its business mainly in India. In 2018, the firm expanded into Australia and New Zealand, and in 2019 it started its operations in the United Kingdom. One might call it the "Uber of India". Even though Lyft is Uber's main competitor, Uber holds most of the ride-hailing market share in the United States (**Exhibit 7**). In May 2022, Lyft had a 28% share of rides in the US, while Uber had a share of 72% (Perri 2022).

Moving on to the food delivery segment, DoorDash, Uber Eats, Postmates and Grubhub are the top U.S. food delivery players. DoorDash dominates the United States food delivery market, with a market share of 53% in 2021, followed by Uber Eats (which acquired Postmates in 2020), with a combined market share of 31% (Ang 2022). DoorDash is in around 7,000 cities across the United States, Canada, Australia, and Japan (DoorDash s.d.). By looking at **Exhibit 8**, it's evident that DoorDash is "stealing" its competitors' market share. Postmates, Grubhub and others' market shares have been decreasing since 2018, as a result of the massive increase in DoorDash's market share. Regarding Uber, its market share has remained stable since 2018 (26%).

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The key takeaway is that even though Uber operates in segments with low barriers to entry, and thus, with a high level of competition, its competitive advantage is its broad geographical presence and strong brand equity. As mentioned earlier, the company operates in 10,500 cities across approximately 70 countries (in **Exhibit 9** there's an illustration of Uber's worldwide presence).

Uber's startup fundament that enabled entering the scaling phase

Journey to the entrepreneurial roots

Before becoming a scaleup and entering the growth phase, a startup needs to flourish. Decisions at the startup stage manifest the foundation and set the conditions for future scaling activities. At Uber, entrepreneurial execution not only initiated the scaling process but also helped pushing boundaries in the growth phase. Therefore, it is worth investigating which startup characteristics Uber showed. Uber has been **one of the most successful startups** in history according to different metrics (Medium 2021). Since 9th May 2019, Uber is a public company listed on the New York Stock Exchange (NYSE). Currently, Uber's market cap revolves around 58 billion USD (as of 14th November 2022), and its revenue was 17.4 billion USD in 2021, it serves more than 118 million users worldwide, has around 4 million drivers, employs about 30,000 workers and is backed by highly prominent investors. These include Baidu, Microsoft, Jeff Bezos, Blackrock, big US investment banks, Softbank, Toyota, and PayPal. However, this prestigious market situation, including the unrivalled growth and competitive dominance, had its origins. Many crucial factors paved the way for Uber's triumph. Hard to imagine, but the success story simply started as an idea, like multiple other ventures. In 2015, Travis Kalanick, co-founder of Uber, proudly pointed out: "Man, it's been five years, and we went from [...] four people around a desk to something that is around the world," (Uber Newsroom 2015). So, hop on, fasten your seatbelt, and prepare for a different type of Uber ride.

Classification as a Scale-Up

Scaling a business can be defined as persistent rapid growth to deliver a viable business model (DeSantola und Gulati 2017). Further definitions describe the process of scaling as generating revenue faster than taking on new costs (Lighter Capital 2022) or without a substantial increase in resources (Spendesk 2022). According to the OECD, a company having an average

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annualized return of at least 20% in the past 3 years and had at least 10 employees at the start of the 3-year period can be entitled as **scaleup** (OECD 2007). With respect to Uber's revenues since 2014, the company successfully fulfills the above-mentioned requirements. Uber even increased its revenue in the first years by the factor of three and two. The slowest revenue growth has been reported from 2018 to 2019 with 25%. As one could guess, Uber's revenue declined 21% in 2020 due to the Corona pandemic. Without the Corona restrictions significantly affecting Uber's sales, the company would have had 7 years of continuous revenue growth above 20% annually, from 2014 until 2021. With respect to the revenue reported for the first three quarters of 2022, Uber is probably going to increase its annualized revenue by more than 20% in the year 2022 as well (**Exhibit 10**). Additionally, since passing the early founding days, Uber constantly had over 10 employees. To illustrate the explosive growth of employees, Uber grew from 75 people in 2012 to 300 in 2013 – ever astronomically rising since then.

Lessons from the very first Pitch Deck

An important instrument of startups to secure funding and attract potential partners is the **pitch deck**. It serves as external flagship of the venture and its vision. Plus, it helps to trace back Uber's initial startup aspirations. The very first pitch deck of Uber is public. 25 slides were showing what Uber aimed for, back then in late 2008. It contained essential parts of a slide deck for tech-based entrepreneurial ventures. A catching cover, problem, solution, target group, key differentiators, use cases, user benefits, technology, market opportunity, funding needs, and current progress were included (Camp 2017).

The importance of **trust** was already obvious in Uber's slides and is still the core of their relationship with users. "The best end-user experience possible" was one of its operating principles already in 2017. This has manifested as the key pillar of Uber's massive success among its worldwide growing customer base. The customer and its needs always serve as the

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point of orientation. A general manager of Uber EATS also confirmed that the most dominant factor of choosing a partner for Uber EATS is trust.¹ Can the partner company be trusted and most importantly, is it perceived as trustworthy by the broader audience of end consumers.

According to “The Lean Startup” by Eric Ries, the prevailing startup manual in the last decade, an early-stage company accomplishes an endless loop consisting of building, measuring, and learning – which Uber followed (Beatrice Valente Covino 2013). Learning act as starting point by formulating hypotheses. Depending on the outcomes of the building phase and the subsequent measures, “pivot or persevere” decisions need to be made (Ries 2011). Uber’s journey involved substantial **pivots** and **adaptations**. The intention of the early days was to provide a service for a curated, higher-end clientele, namely “Professionals in American cities”. This customer segment is still served with Uber Black, Uber Comfort, etc. but the users’ personas have been becoming more diverse, comprising many socio-economic levels. Notably, Uber described their service as “NetJets of Cars” in the pitch deck. NetJets is the world’s largest private jet leasing company. The comparison with a private jet charter business emphasized Uber’s initial efforts to become a high-end premium service with high efficiency, comfort, and exclusivity for a well-defined target group. Additionally, their approach was “members only” to further highlight the exclusivity and luxury of their service. This idea faded increasingly since nowadays, after a quick registration, literally everyone can become an Uber user. Also, the cars meant to be luxurious: Mercedes and Lexus. Finally, the “invite only – from an existing member” function mentioned in the pitch deck of 2008 accentuated on the described exclusivity approach. Concluding, Uber performed a so-called customer segment pivot (Ries 2011).

A **vision** and foresight of **future trends** are critical for startups that want to survive. Uber already mentioned Wi-Fi in cars to allow “working while commuting” which would have been

¹ The Uber manager was interviewed in an event but prefers to stay anonymous, further details can be obtained upon request.

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a major technological and user-oriented improvement. Moreover, Uber's eye on the environment stands out, anticipating the rising advancement of global climate consciousness. The "Environmental Benefits" slide of 2008 speaks of hybrid cars and carpooling which substantially gained in relevance and are well-used today. Furthermore, Uber's whole business model was based on smartphones rising in usage – and they predicted right. Uber also anticipated this technological development and built its service on the back of it. Another concept that would grow tremendously was location-based services and the industry around it. Moreover, Uber used the word "digital hail" to describe their early solution and thus, already seemingly indicated its direction to the upcoming gig economy. Surprisingly, there were only a few hypotheses which failed validation over time. The most outstanding claim which turned out to be unproven was Uber's profitability. On the "Operating Principles" slide, one bullet point mentions "Profitable by design". Making profits hasn't been realized even 10 years after being in business, see more in the chapter *Profitability*.

Uber also focused on **efficiency**. A typical success factor of business ideas is the identification of inefficiencies in current processes, markets, value chains, or business models. These present opportunities where new companies can begin to gain market share (Forbes 2020). For example, in the slides, Uber emphasized the higher fuel efficiency – driving more miles with the same amount of fuel – of its cars versus taxi cabs. The hike of miles per gallon which describes the fuel efficiency of automobiles in the US turned out to be another advantage of Uber.

Values are another relevant aspect of an organizational entity to attract users and essentially, talent. Especially, in the uncertain environment of a startup, manifested common beliefs function as solid anchor. In the old pitch deck, initial values of Uber can be identified. Amazon's 14 leadership principles served as orientation (Amazon 2022). Already in Uber's early days, the significance of safety, user-orientation, and convenience was obvious. These are still being lived up to today. Now, Uber impersonates a value set of eight beliefs. "Stand for

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safety: safety never stops” is one of the eight core values Uber is representing nowadays. “Trip obsessed: make magic in the marketplace” and “Build with heart: we care” embody the other two mentioned beliefs. The three values of today mirror what Uber’s initial qualities embodied.

Another pillar of successful business ideas is **simplicity**. The art of narrowing down a complex issue to a single and tangible problem is a critical entrepreneurial skill. One way of Uber showing its plain straightforwardness is the language used in the pitch deck. “‘Get here now’ costs more than ‘tomorrow at 5 pm’”, and “raise a few million” are illustrative examples of its past wording. Furthermore, Uber concentrated on solving a simple problem. Garrett Camp wanted to “push a button and get a ride” according to Travis Kalanick (Uber Newsroom 2015). To focus on solving the issue, staying humble and focused rather than raising inordinate ambitions was key in the beginning. “We needed to make sure we were surviving, much less thriving,” explained Kalanick, “Uber didn’t begin with any grand ambitions. It began as the answer to that simple question,” (Uber Newsroom 2015).

Furthermore, Uber utilized **scientific** methods to solve specific problems. One is Operations Research to optimize routes or demand forecasting to hover cars in statistically optimized positions. Plus, Uber’s technological advancement is based on multiple data and computer science tools (Singh 2020). For example, it maintains a Machine Learning-as-a-Service platform called Michelangelo. There, AI solutions are being built, deployed, and run. One of these is the estimated time of arrival which users see after they booked a ride. In fact, the iteration cycle of Uber’s AI approach incorporates key elements of the lean startup feedback loop (**Exhibit 11**). Uber also uses spatiotemporal forecasting models to see user demand and driver supply in selected future moments, resulting in a so-called “heat map” for drivers to see where demand agglomerates (**Exhibit 12**). Additionally, leveraging natural language processing, Uber enables standardized answers to select and send via one click for drivers. Like this, they can answer users faster and are less distracted while driving. The science-based

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approach is also reflected in Uber's efforts of employing a significant number of PhDs. For instance, in 2021, Uber hired a fifth of Harvard University's PhD graduates (The Economist 2022). Thanks to big data analysis and data science being applied, Uber can draw conclusions from the data being collected from rides. It uses every information gathered to improve its services. This enables product development not only close to the market but even together *with* the market which increases the chances of a successful product-market-fit (Blank and Dorf 2020). On top of that, Uber introduced a two-way feedback system. The driver rates the passenger and vice versa. The data-driven feedback culture further advances Uber's services while improving riders' and passengers' satisfaction.

Burning 3 Dollar for every 1 Dollar earned: Uber's Cash Burn Problem

A figure that is used to compare the financial vitality of startups is the **cash burn rate**. In general, cash burn means negative free cash flow (FCF). It is the money raised from investors the company spends that is not or only partly covered by operating income. In sum, Uber burned \$25 billion since 2009. The burn rate of the last six years is displayed in **Exhibit 13**. In the second quarter 2022, Uber's FCF amounted to \$335 million and thus, was positive for the first time. This indicates establishment as financial stable company that can sustain its spendings through revenue. Surprisingly, the FCF more than doubled in the third quarter, by the end of September 2022. The high burn rate is the result of staggering growth to reach critical masses of users and drivers since Uber employs a two-sided market platform (see chapter *Platform business*). The rapid global expansion and the entrance of other markets besides the core business (e.g., Uber EATS and Freight) also consumed lots of money. In 2017, a professor at Wharton Business School explained that Uber is losing \$3 for each \$1 they make (Wharton Magazine 2017). The fact that Uber lost money for so many years is not how startups usually mature in later stages. Normally, they seek profits, positive cash flow, and any type of exit. This

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makes them attractive for investors. Uber's strategy seems to be long term oriented and puts growth over profits which hasn't been seen before to such extent.

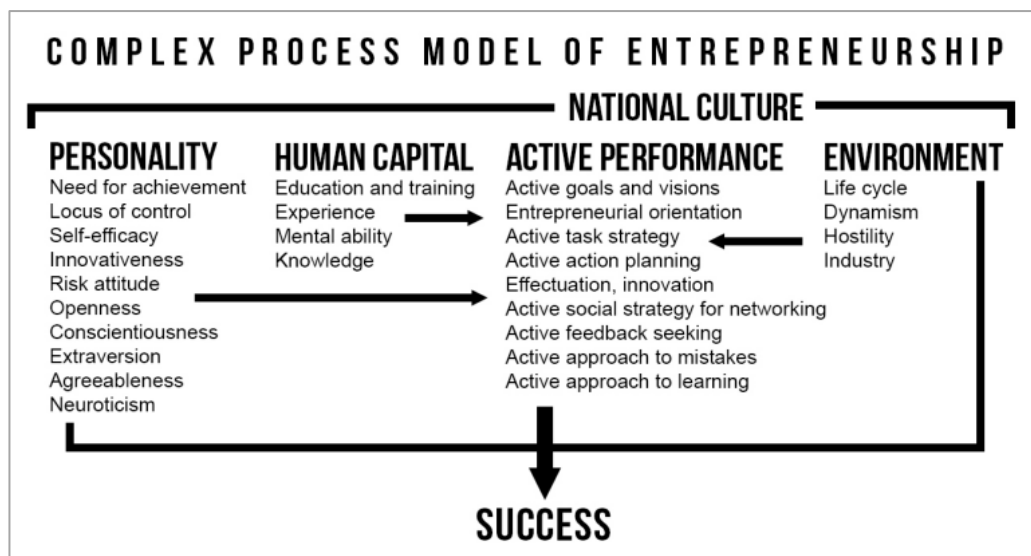
The entrepreneurial spirit of the people behind Uber's expansion

A **low average age of employees** is another typical characteristic for technology-based startups from Silicon Valley. Uber CEO Dara Khosrowshahi mentioned that "the average employee at Uber is barely over 30", (CNBC 2022). As can be seen in **Exhibit 14**, the talent of other big high-tech corporations globally is also around that age, in median.

Remarkably, both Uber founders were **serial entrepreneurs**. Uber initially was founded by Garrett Camp and Travis Kalanick. Before Uber, Garrett Camp co-founded StumbleUpon (web discovery platform with personal recommendation engine) in 2002. It was acquired by eBay for \$75 million in 2007. After co-founding and self-funding Uber (speaking of the \$250k seed round), he founded Expa (company builder) in 2013. Travis Kalanick was known for transforming his peer-to-peer (P2P) expertise into successful ventures before the idea for Uber existed. Prior giving birth to Uber, he co-founded Scour (multimedia search engine and P2P filesharing platform) in 1997 and Red Swoosh (P2P content delivery network) in 2001. The latter was acquired for about \$23 million in 2007 and thus, he became a millionaire. Research confirms the increasing likelihood of success if the founder is a serial entrepreneur (Shaw und Sørensen 2017). The prior experience, unique skill set, and exclusive network of the two experienced co-founders largely helped getting UberCab started and scaled.

The building of a global multi-million-dollar corporation requires specially equipped people. Therefore, founders of successful ventures inhabit specific personality traits. A meta review of studies that researched on **personality traits of entrepreneurs** revealed some of these characteristics (Kerr, Kerr und Xu 2017), see **Figure 5** for an overview.

Figure 5: Complex process model of entrepreneurship.



Retrieved from: https://www.researchgate.net/figure/Prototype-Complex-Process-Model-of-Entrepreneurship-Frese-2009_fig1_365295237

Travis Kalanick co-founded Uber and was positioned as its CEO from 2010 to 2017. It is not for nothing that he is being perceived as the face of Uber's meteoric rise. Thanks to his high degree of openness, he developed passion for computers and learned to code already in middle school. With 17 years of age, Travis sold knives door-to-door which shows high extraversion (communication skills) and strong conscientiousness (work ethic with 17). At 18, he co-founded the "New Way Academy" – a scholastic aptitude test preparation business to help applicants to increase chances getting accepted by American universities. This emphasized his high agreeableness, openness, and conscientiousness. Furthermore, the passion in coding and the early proactive way of starting own endeavors lead to Travis also exhibiting strong levels of self-efficacy and locus of control. Both describe the degree a person perceives as being in control of his/her life and the environment. Dropping out of the University of California, Los Angeles (UCLA), to start a business was a risky decision with unknown consequences. Co-founding and running Scour, the P2P network, while receiving unemployment aid and getting sued for \$250 billion also accounts to Travis' increased risk tolerance. Moving back to his parents' house to save money while running his second firm, Red Swoosh, shows his unrivaled

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seeking for success. Although the initial idea originated from Garrett Camp, he believed in the concept of disrupting the cab industry by utilizing information technology – evidence for innovativeness. Already in 2002, listing Travis as one of the top innovators under 35 where he was at the age of 25 confirms this (MIT Technology Review 2002). It was also him who started the autonomous driving department of Uber in 2015. His unethical practices to win at all costs also underline his need for achievement, but simultaneously resulted in a lot of trouble. Despite being an ambitious entrepreneur, becoming a prudent leader is a subject on which Travis finally failed. He had to resign from Uber due to many controversies and scandals on his behalf. To sum up, “Uber CEO Travis Kalanick is so headstrong, so enthusiastic, and so combative that he is at risk of seeming like a parody of today's tech entrepreneur,” (Inc. 2013).

A “dream big” **mentality** is what makes most successful entrepreneurs and innovators of our time stand out. Steve Jobs, Elon Musk, and Jeff Bezos relentlessly reached for the stars and were ready to sacrifice. Interestingly, the company name “Uber” comes from the German word “über” which means above something (geographically) or above all the rest (in terms of level/hierarchy). This strong attitude was lived by Garrett Camp and especially, Travis Kalanick. Another typical trait of entrepreneurs linked to this mentality is thinking out of the box. In fact, Travis’ way of finding the new CEO and general manager of Uber, Ryan Graves, was a simple and informal tweet in 2010 (**Exhibit 15**).

Today, Uber still lives up to its entrepreneurial genesis. To cultivate a purposeful work culture, Uber boosts the approach of **intra-preneurship**. Decentralization, flat hierarchies, and independent teams working on their own terms made the company grow even bigger (Forbes 2019). In addition, short communication distances foster fast decision-making. This is necessary in such a rapidly changing market environment Uber is operating in. Finally, in 2019, Uber initiated the Uber Incubator that follows an open innovation approach and involves lean startup methodologies (TechCrunch 2019).

Historic Development

Uber was founded in March 2009 as UberCab in San Francisco by Garrett Camp and Travis Kalanick. Just three months before, they attended the Parisian LeWeb conference, where Kalanick first heard of the idea for Uber from Camp. They both previously sold their companies. Camp sold StumbleUpon to eBay for \$75 million in 2007, and Akamai Technologies bought Red Swoosh from Kalanick for \$19 million (Blystone, Investopedia 2022).

The idea for Uber was born when Garrett Camp told Kalanick how he booked a private driver for New Year's Eve in 2007 for \$800 and was offended by the high price for an evening of fun. He started thinking about a way to split the cost with friends in order to get private hire limos more affordable and, at the same time, solve San Francisco's taxi problem.

Together with Oscar Salazar and Conrad Whelan, two graduate school friends of Camp, they built the prototype of Uber. Kalanick, at the time, was working as "Chief Incubator", his primary role being that of an advisor (Hartmans e Leskin 2019). By January of 2010, UberCab had three cars as part of a test run drive around New York, focusing on the SOHO, Chelsea, and Union Square area (Arrington, Uber CEO "Super Pumped" About Being Replaced By Founder 2010).

As Garrett was CEO of StumbleUpon again and Kalanick wanted to take some time off after ten years of working in P2P technologies, they had to find someone to run the company. They hired Ryan Graves as a General Manager, who previously worked for General Electric Healthcare (Kosoff, How a tweet turned Uber's first hire into a billionaire 2015). Just three months later, UberCab officially launched in San Francisco on the 31st of May in 2010 (Hartmans e Leskin 2019).

Shortly after the launch, Graves was named CEO of UberCab, and he and the team were looking to secure funding. During the summer, Uber raised a \$1.25 million seed round. Among the

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investors were First Round Capital, Chris Sacca, and Gary Vaynerchuck (Arrington, UberCab Closes Uber Angel Round 2010). UberCab changed its name to Uber in October 2010 to not market itself as a cab service too much and risk further tensions with the taxi industry (Kolodny 2010). Uber shocked their investors in December of 2010 when Graves stepped down as CEO and became a General Manager again. Kalanick took on the open position (Arrington, Uber CEO "Super Pumped" About Being Replaced By Founder 2010).

Under the leadership of Kalanick, Uber closed their Series A funding in February, securing \$11 million in funding, valuing the company at \$60 million. Benchmark Capital led the financing round, adding Bill Gurley, a partner at Benchmark Capital, to Uber's board of directors (Arrington, Huge Vote Of Confidence: Uber Raises \$11 Million From Benchmark Capital 2011). The company used the funding to have its first expansion, moving into New York, now one of its biggest markets in the world, shortly after expanding to Chicago (Kosoff, Uber has delivered 30 million rides in New York City since launching four years ago 2015).

In December 2011, Uber reached a new milestone as they went live in Paris, marking their first international expansion. The same month, Menlo Ventures led the Series B round, pre-valuing Uber with \$300 million. Together with Jeff Bezos, Goldman Sachs, and more, the startup collected \$37 million (Tsotsis, TechCrunch 2011).

The following year was exciting for the startup, as they accelerated their international expansion to Canada (Shore 2012) and London (Dredge 2012), got competition by the newly founded Lyft (Lawler, With A San Francisco Launch Imminent, Lyft Is Doubling Its Fleet Of Drivers And Ready An Android App 2012), and announced their new Uber X service. Uber X would be 35% cheaper than a regular Uber, deviating from the black luxury sedans, as drivers were allowed to use Prius and Cadillac Escalades. This marked their evolution as a brand, with Kalanick stating that "Uber is ultimately a cross between lifestyle and logistics" (Tsotsis, Uber

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Opens Up Platform To Non-Limo Vehicles With "Uber X," Service Will Be 35% Less Expensive 2012).

To stay competitive with Lyft and supply the growing demand for drivers, the startup allowed Uber X drivers to use their personal vehicles, starting in April 2013 (Lawler, Uber Moves Deeper Into Ride Sharing, Promises To Roll Out Services Where Regulators Have Given 'Tacit Approval' 2013). Uber solidified their international presence by launching its service in Taipei, its first location in Asia, and Johannesburg, its first city in Africa. They subsequently collected \$363 million in a Series C round led by Google Ventures, now called GV, upping their post-money valuation to \$3.76 billion (Wilhelm e Tsotsis 2013). At the end of the year, the first documents in a case against Uber were filed by attorney Shannon Liss-Riordan, arguing that the 350.000 Uber drivers in California and Massachusetts must be classified as employees rather than contractors. The plaintiffs and Uber came to an agreement outside of court in 2016 (Taylor e Goggin 2019).

UberRush, a package bicycle delivery service, launched in New York City in 2014. The product expansion further strengthened the transition of Uber from a ridesharing company to a logistics company (Ong, Uber announces UberRUSH, a bicycle courier service, launching first in Manhattan 2014). The service was shut down in March 2018 (Morris 2018). April 2014 marked another significant milestone for Uber, as they went live in their 100th city, Beijing. China was a promising market at the time, set to become the most valuable country for Uber. The Series D round, led by Fidelity, valued the company at \$17 billion pre-money, as they raised another \$1.4 billion (Lawler, Uber Raises Giant \$1.2 Billion Funding Round At A \$17 Billion Valuation 2014). Two months later, UberPool launched in San Francisco in August, enabling users to save up to 40% on rides. The service allows riders to share their commute with other rides that have a similar route, lowering the cost of the overall ride (Ong, Uber announces UberPool, a carpooling experiment with 40% lower prices than UberX 2014).

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The end of 2014 was a significant time for Uber. They received \$1.2 billion at a \$40 billion pre-money valuation in a Series E round (Crunchbase s.d.) and another \$600 million from Baidu alone. Baidu is a Chinese search giant and offers map apps, which Uber could use to integrate into their service, a promising outlook for investors (Shu 2014). The enthusiasm was short-lived, as two Chinese taxi apps, Didi Dache and Kuaidi Dache, announced their merger into Didi Kuaidi. Competition in China began growing as the merged company had a market share of 95% and was valued at \$6 billion (Shih 2015). Furthermore, a passenger accused a Uber driver of raping her, resulting in the ban of Uber in the Delhi region. The incident raised safety and screening process concerns regarding the drivers working for Uber (Barry e Raj 2014).

As the drivers are Uber's most enormous operating cost, they announced a partnership with Carnegie Mellon University in Pittsburg, where they would research self-driving cars. The prototypes were spotted mapping the streets in May 2015, just three months after the announcement (Gibbs 2015). Just before, Uber Eats launched in LA, Barcelona, Chicago, and New York City as part of an elaborate test run, already planning to expand to other locations (Julia 2015). Traditional taxi drivers protested against Uber in France, as they were operating outside of French law- The protests took a violent turn in Paris, with cars being burned and Uber drivers getting attacked. This was not the first-time traditional taxi drivers voiced their concerns, as the year before, protests were held in London, Milan, and Madrid (Rubin e Scott 2015).

In July, Uber raised \$1 billion at a \$50 billion pre-money valuation in a Series F round. Shortly after, it secured \$100 million in private equity from the Tata Operations Fund to grow its presence in India (Crunchbase s.d.). December was a turbulent month for the company, as Lyft (USA), Didi Kuaidi (China), Ola Cabs (India), and GrabTaxi (South-East Asia) announced a service and technology alliance, as Softbank is their common investor (Purnell 2015). Simultaneously, Uber Eats received its stand-alone app, with the service also coming to Toronto

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(Hempel 2015). Five and a half years after its launch, with just one day left in 2015, Uber reached 1 billion trips, a massive milestone (Uber s.d.).

Saudi Arabia's Public Investment Fund invested \$3.5 billion in Uber in the first half of 2016, marking the biggest single investment of a foreign country into a venture-backed startup. Yasir Al Rumayyan is the managing director of the Fund. He will join Uber's board of directors (Hartmans 2016). Nevertheless, more than the cash injection was needed to save Uber's operations in China, as Uber reportedly lost \$1 billion every year trying to stay competitive (Carson, Uber CEO: 'We have hundreds of cities that are profitable globally' 2016). Didi Chuxing, formerly Didi Kuaidi, agreed to buy Uber China, valued at \$7 billion. The merger increased Didi's valuation to \$35 billion (Millward 2016).

Just six months after reaching one billion trips, Uber doubled the number of rides, completing over 2 billion in July (Uber s.d.). In August, Uber deployed around 100 heavily modified Volvo XC90s capable of autonomous driving. The cars will pick up riders in Pittsburgh, with a driver who can take the wheel in an emergency and a co-pilot to take notes. To strengthen its place in the autonomous industry, Uber bought Otto, a self-driving truck startup, and with Volvo formed a \$300 million alliance (Chafkin 2016).

Uber Freight launched in May of 2017, marking its move into the trucking industry. Lior Ron, a co-founder of Otto, leads the company. Still, Uber Freight will rely on actual drivers instead of autonomous vehicles (Balakrishnan 2017). Uber achieved the next milestone of 5 billion trips in the same month (Uber s.d.).

Susan Fowler, a former Uber engineer, published a blog post detailing her experiences at Uber. Her experience at Uber was that of a sexist and toxic company, with her having to endure sexual harassment. Kalanick hired former US attorney Eric Holder, who led the independent investigations into the company (Levin 2017). Shortly after, on Superbowl Sunday, Kalanick

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got in a heated argument with an Uber driver about the lowered fares. The dashcam video was published online, and Kalanick apologized, stating that he would get leadership help (Carson, Uber's no-good, very bad month: The stunning string of blows that have upended the world's most valuable startup 2017).

The allegations reached their height in June 2017, as the results were published to the board. 215 claims of discrimination and sexual misconduct from employees resulted in 20 employees being fired (Carson, Uber fired more than 20 employees after receiving 215 claims in probe of sex harassment and other incidents 2017). Kalanick took a leave of absence following the scandals of the last year (Carson, Uber CEO takes leave of absence following an explosive 4-month investigation that led to 20 firings 2017). Only two weeks later, he resigned as CEO, as five of his major investors wanted his immediate resignation. Dara Khosrowshahi, the former Expedia CEO, was hired as the CEO of Uber in August (Isaac 2017).

2018 started with Softbank, an investor in various other ride-hailing apps, taking a 15% stake in Uber, becoming their largest shareholder. Grab, previously GrabTaxi, acquired Uber South-East Asia operations in eight countries, including Uber Eats. Uber will receive a 27.5% stake in the company, while Khosrowshahi will join the board of directors. This was not a surprise, as both companies have Softbank as a mutual investor (Somerville 2018).

The company also partnered with JUMP, a bike-sharing startup, to launch Uber Bike. The service allowed users to unlock JUMP bikes through the Uber app. Shortly after, Uber bought JUMP to become a one-stop solution for mobility. The amount was not disclosed, sources say the price was close to \$200 million (Seppala 2018).

After Uber's self-driving cars reached the 2-million-mile mark in December 2017, an autonomous car struck and killed a pedestrian in Arizona in March 2018. The first fatal incident involving a self-driving car. This resulted in a halt of Uber's testing program in Arizona. The

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company soon resumed its research activities in Pennsylvania, limiting driving speeds to 25 mph on a loop around Uber offices (Bort 2018). Unphased by this, Toyota invested \$500 million, valuing Uber at \$72 billion, to accelerate autonomous ridesharing. The researched technology will be implemented in Toyota Sienna minivans, which were planned to hit the roads in 2021 (Bensinger e Dawson 2018).

2019 was an exciting year for Uber, as the company officially filed for an IPO in April. The company was listed on the New York Exchange under the ticker UBER in May, with a share price of \$45, valuing the company at \$75.5 billion, the third largest IPO in America. Shares fell to \$41.57 at the end of the day, accumulating a \$655 million loss (Ungarino e Garber 2019). A month later, the US government ruled that drivers are contractors and not employees, a massive win for Uber. Drivers are, therefore, not allowed to form a union and possess no legal protection when complaining about working conditions (Wiessner e Rana 2019).

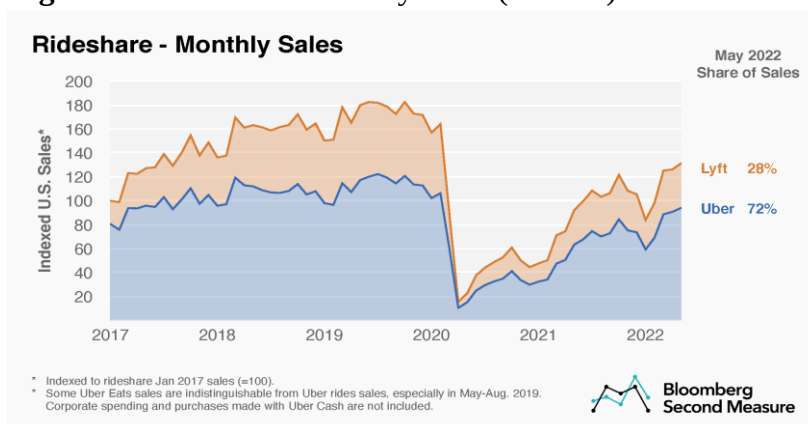
During 2020, the effects of Covid, and thus implemented safety measures, struck Uber. Quarterly taken trips dropped by 1.2 billion to 700 million in Q2, a setback that Uber has to come back from, as quarterly rides rose to 1.8 billion in Q2 of 2022. Monthly active users went down from 111 million to 55 million, while gross bookings fell to \$10 billion, nearly halving. UberEats noted more gross bookings than the ride sector for the first time, which it still has not caught up to again (Iqbal, Uber Revenue and Usage Statistics (2022) 2022).

Today, Uber is active in 10,500 cities (Uber 2020) across 69 countries (Salas 2022), has 122 million active monthly users, provides nearly 21 million trips a day. The ride segment has a market share of around 70% in the US, while Uber Eats has 24% (Iqbal, Business of Apps 2022).

Transition to Uber's growth and how it scaled so fast and successfully

Uber Technologies Inc. is their official name because they consider themselves a technology firm rather than a transportation company. The company established a two-sided digital marketplace for drivers and riders and was one of the first to embrace and describe the "sharing economy" concept. Uber's business strategy clings to ease and predictability, two things that the traditional taxis severely lack. Uber definitely offers passengers a transportation system that is more predictable, certain, and transparent as opposed to seeking to locate the contact information of a taxi service or phoning one without assurance of its presence or availability. Uber had one main mission and it was to make transportation an easy access to everyone and without the expenses that other ride hailing services have, without owning their own vehicle fleet, instead each driver would use their own car. Because of its asset-light business model, which has proven to be quite attractive to investors, Uber is very scalable. Their business model and financial backing helped the company to achieve a very strong presence in the market, with 15 million rides per day worldwide and a 72% share of the US rideshare market in 2022 as we can see in **Figure 6** below.

Figure 6: Rideshare – Monthly Sales (June 15).



Retrieved from: <https://secondmeasure.com/datapoints/rideshare-industry-overview/>

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One year after its debut, Uber had grown to the point that, despite spending almost no money on marketing, it was hiring a new rider for every seven rides. The solution was very simple, Product-market fit. When brands have established and verified the use cases for their products or services with their target customers, they have reached the stage of product-market fit. Startups can evaluate their product or service's capacity to survive in the market with the help of this tool. Additionally, it aids companies in determining how well their offering would satisfy consumer demand. Furthermore, it is one of the biggest tools that helps determine the success or failure of the business.

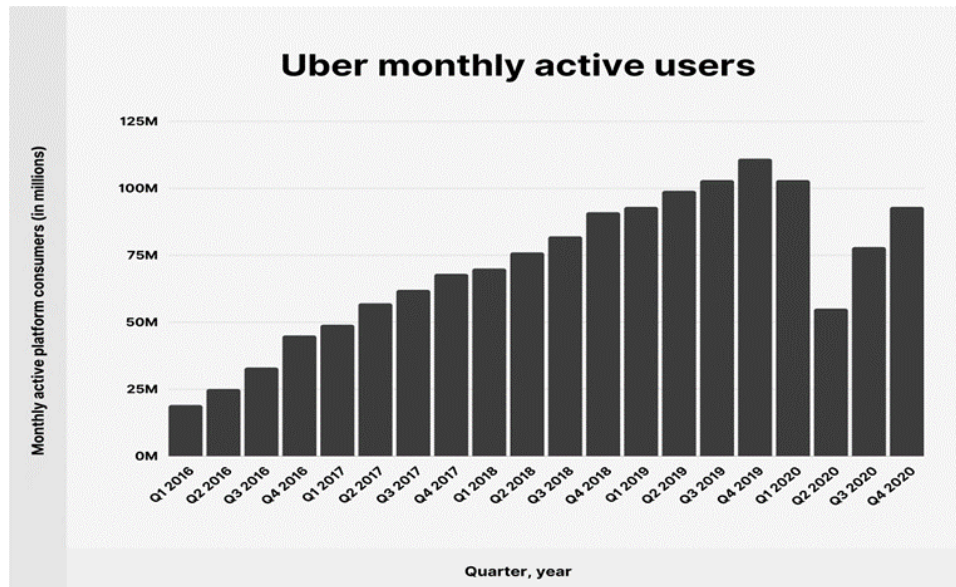
Uber is a regional company with worldwide operations. Since its product is the same everywhere and for everyone, it must be appropriate for diverse, tiny local markets. To make this work, it needs both good local intelligence and powerful technology. The company leverages data to scale, promote product adoption, and provide value to customers. Powerful consumer feedback systems have been developed by Uber. All of the information from a customer's engagement with their products is recorded and fed back into the system to enhance the experience of the subsequent user. Thus, data is the main factor enabling Uber's scalability. The business model innovation doesn't just entail radical industry revolution; digital reforms can also begin modestly, pragmatically, and incrementally. In many respects, that's how businesses like Uber got their start; they started out small, honed their customer development strategies, and discovered the right people, technology, and inflection points to scale.

Uber Technologies developed a concept to optimize travel time and improve the experience, revolutionizing the way people travel. The organization developed a solution to give its clients an effective, ideal, and hassle-free traveling experience by focusing on the demands of those who travel frequently. It has grown in popularity over time and is now many people's go-to riding option.

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Monthly active users of Uber have been steadily increasing at a rate of 48.74% from 2016 to 2020, as we can see in **Figure 7** below.

Figure 7: Uber monthly active users (March 23).



Retrieved from: <https://backlinko.com/uber-users>

Uber's growth and the fast scale that the organization faced was crucial to enhance new technologies and to solve real problems. The products and services that are designed specifically to address these problems gain traction quickly and are readily accepted by clients. The company's business strategy was created in a way that makes it simple for it to quickly enter new areas and grow its client base. It has put a strong emphasis on scalability from the start. When it entered a new market, it was adamant about winning and acted with a "warlike mentality". Furthermore, with growing startups, comes discontentment from various parties. Consequently, to create a successful business, the measures must be put in place to be able to deal with crisis and maximize any damaging news that may be directed at the brand. Uber's growth strategy focused mainly on client convenience, and it adopted a disruptor persona to

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establish its brand and identity. It began a socioeconomic campaign to change ingrained behaviors in ways that benefited customers. Additionally, they occasionally spent money on increasing brand loyalty, which ultimately aided them in opposing legislation and regulations. The seamless omnichannel aspect of Uber's growth strategy is its most important component. Nobody could stop the market from adoring the product since it revolutionized how consumers' lives were plugged into, from smartphone hailing to superior cars, frictionless payments, and driver rating.

Since Uber was the first technological business to offer distinct services in the transportation sector, it was able to capture a sizable portion of the market. Although it had rivals, Uber always had a better reputation as a brand than any of the other companies that were also a ride-sharing service, which leveraged its way up.

Companies should have several aspects in consideration when it comes entering new markets, and fast expansion. Uber was the first of many ride-sharing applications to appear in the market. A corporation should take the competition into account when entering a foreign market. If not in light of its competitive advantages, in order to create a workable strategy to enter that market by changing some strategies. Uber expanded quicker internationally than any other firm. The Uber application revolutionized the way people travel and quickly expanded to several countries, becoming a very practical and cost-effective replacement for taxis and underfunded public transportation. Uber's popularity is rising due to a variety of factors, including: the convenience of the service in comparison to the traditional taxi companies, which was one of the primary factors in its success; it provides customers with an alternative to the conventional corporate service models used by other transportation businesses; customers have the chance to rate their drivers using the service, which makes it simpler for the business to hold drivers accountable and enhance quality control. Due to these factors, Uber has been able to quickly

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penetrate new markets all over the world. Despite increased competition from rival ride-sharing businesses, the company is anticipated to continue to expand over the coming years.

Every company exists to fulfill a need for its clients. However, the majority of businesses use the same, constrained set of business models, which are, most of the time, not adequate to address all the various problems that customers may encounter. Businesses that offer superior services and stand out from the competition will expand much more swiftly. Uber has proven this by resolving a number of the issues that clients had with conventional taxi services by creating an application, which was all that the consumers needed to have a more facilitated life. For this reason, Uber had the opportunity to scale and grow successfully.

So, what are the most important takeaways from Uber's scaling experience? The *individualized customer experience* - Every business should offer highly personalized consumer experiences through mobile devices, applications, and connected items like Uber does. Every gadget, every social media post has a customer behind it. Making the most of each client interaction by turning discrete moments into customized customer journeys is therefore more crucial than ever. *Simplicity* - Uber is a prime example of elegant simplicity successfully addressing a single issue. It was a straightforward concept predicated on a straightforward desire to disrupt a simple, established business with latent demand and subpar customer service. Uber has survived its legal, political, and ethical storms because, at its core, it is a straightforward, customer-focused service. *Validated learning* - Keep up valid learning, excel at getting better, and acknowledge that improvement never stops. Take extraordinary steps to comprehend why clients purchased from the company. *Right mindset* - The organization needs to have the correct attitude for the current level of growth. Scaleups are particularly prone to errors when things are going smoothly. Uber's founders have the appropriate mentality, and it is obvious that a huge idea performed flawlessly is the true motor, finding exactly what people needed and answering to existing problems, which becomes the primary step to start a successful startup.

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Repetitive high margin sales are one factor in Uber's success. Many Uber users reportedly spend more than £100 a month on the service, according to reports. Some services adhere naturally to this metric, whereas others are only sometimes used. Convenience is the appeal of on-demand products, which promotes high retention rates and growing to the critical mass.

Figure 8 below displays gross mobility bookings for Uber since 2017. The data for 2020 show a decrease, highlighting the coronavirus's effects:

Figure 8: Uber's gross mobility bookings (March 23).

Quarter, year	Gross bookings
Q1 2017	\$6.5 billion
Q2 2017	\$7.48 billion
Q3 2017	\$8.2 billion
Q4 2017	\$9.19 billion
Q1 2018	\$9.38 billion
Q2 2018	\$10.17 billion
Q3 2018	\$10.49 billion
Q4 2018	\$11.48 billion
Q1 2019	\$11.45 billion
Q2 2019	\$12.19 billion
Q3 2019	\$12.55 billion

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Q4 2019	\$13.51 billion
Q1 2020	\$10.87 billion
Q2 2020	\$3.05 billion
Q3 2020	\$5.9 billion
Q4 2020	\$6.79billion

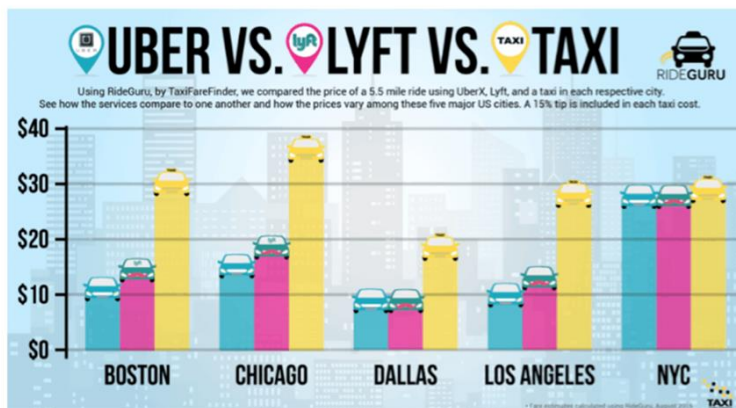
Retrieved from: <https://backlinko.com/uber-users>

Scaling entails making sure everything moves in unison. Each function must develop at the same rate as the others while maintaining alignment with equal care and support. In this, Uber has succeeded. The organization was able to redefine “one-size-fits-all” and created a service that made lives easier with a personalized system. This led to a series of positive publicity and recommendations.

Uber offers its users a number of benefits, the most notable of which is the user-friendly interface that enables users to freely order their desired vehicles in a shorter amount of time, hence lowering associated transaction costs. The second, and possibly most well-known benefit, is the pricing of rides, which is far less expensive than that of typical metered taxis. The time and distance parameters that make up Uber's price structure are totally under its control. **Figure 9** below displays the comparison of the prices between Uber, Lyft and taxis services in Boston, Chicago, Dallas, Los Angeles and New York City.

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Figure 9: Uber Vs. Lyft VS. Taxi (March 31).



Retrieved from: <https://d3.harvard.edu/platform-digit/submission/uber-vs-taxi/>

Thirdly, the software primarily enables electronic payment via credit/debit card services, which lessens the anxiety associated with carrying cash. These can range from having enough money on hand to making sure you are carrying the exact amount you need in case the driver doesn't have change. Finally, the opportunity to review the driver's service using the five-star rating system guarantees that the driver's reputation is upheld and that mandatory quality criterion are met.

In conclusion, this potential is the main factor attracting investors' attention to Uber, enabling its scaling approach. The effects on the economy, the environment, and daily life are profound. They are altering how people view utilizing personal transportation, moving away from the idea that everyone living in cities needs to buy a car and toward the idea of renting rides as needed.

Because Uber is one of those truly disruptive ideas that entirely redefines an industry and alters how people think about deeply ingrained beliefs and habits, it makes for an interesting scale-up case. Uber demonstrates that creating a pro-consumer product that entirely reimagines the experience can be scaled and result in long-term success. Uber's expansion offers information on what it takes to achieve the scaleup growth that startups seek.

Problems emerged in the scaling process or soon to be faced

Uber faces many challenges which have and will likely continue to affect its operations. These risks can broadly be categorized in three sections: operational, legal, and financial. The categories are not mutually exclusive as they are intertwined.

Operational Risk – Risk of Scalability in highly competitive markets

The benefit of Uber's business model is that it proved to be scalable quickly on a global basis. However, this is not without downsides as the markets it operates in are highly competed. Uber faces intense competition from existing, and inexpensive alternatives. The competitors already mentioned above tend to be well-funded and compete by offering consumer discounts, promotions or different pricing models that may be more attractive to users than Uber's offering. To stay competitive in these markets Uber has lowered fares and offered driver incentives, these incentives combined can be higher than the gross booking amount it generated on the same trip. Uber's success of its platform business in each geographic market significantly depends on increasing its network scale and liquidity by attracting drivers, consumers, merchants, shippers, and carriers to its platform. If drivers choose not to offer their services through Uber's platform and instead offer them through a competitor's platform, Uber will not only have less transportation capacity but moreover will also face a reduction in service quality. The result will be higher waiting times for riders which further shifts consumer focus to competitive platforms. Uber has experienced and expects driver supply constraints in most geographic markets in which it operates. Consumers tend to shift to the most affordable or qualitative provider, and drivers to the platform with the highest earnings potential. Key to attract customers in these industries is to build a platform that offers the lowest service fees and highest volume of orders. Similarly, if merchants choose to partner with other delivery services or choose to engage exclusively with Uber's competitors like merchant marketing websites, other

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delivery services, Uber may lack a sufficient variety and supply of restaurants. This lack of access to the most popular restaurants will become less appealing to consumers and merchants. Hence, Uber will likely have to continue to offer promotions in markets where Uber does not hold a leading position, which will negatively affect its financial results. Furthermore, the adaptation and change of its pricing models to competitors' changes is crucial to combat driver emigration. To stay competitive, Uber will have to constantly adapt and explore further innovations or different pricing models, which must be refined and can vary geographically.

Some of Uber's competitors have achieved first mover advantages in certain locations like greater brand awareness through having had a longer food hold. Furthermore, these incumbents in international markets tend to have specialized market knowledge and tend to be backed more substantially by local regulatory institutions. This gives incumbents a competitive advantage in responding quickly to local regulatory changes, technologies, and switches in consumer preferences. Also, it is to be expected that new entrants will arise in the future in Uber's existing markets due to low entry barriers in the industry. Many of Uber's competitors are operating on a local basis with a limited service offering. Its competitors also adopt similar product features or copy them, reducing the ability to differentiate the Uber brand.

Uber's number of platform users fluctuate not only as a result of fare prices and ETA times but also because of dissatisfaction with the operation, platform user support, variety of offerings, negative brand association resulting e.g., from safety incidents or driver treatment, perceived geopolitical affiliations or changes in products and offerings. Uber's challenge is to make tradeoffs based on the factors above between the satisfaction of its multiple platform users. One change that one category of user's views as positive will likely be viewed as negative to another category of users for example the reduction of trip fares resonates well with riders but not with drivers. Driver dissatisfaction has in the past resulted in protests by Drivers in various regions,

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including the United Kingdom, which resulted in business interruptions. Hence, future protests also will result in loss of business.

Operational Risk – Brand reputation and Marketing

Another challenge that Uber faces is the regulation of its platform concerning safety incidents. Uber must deal with many cases of incidents that can range from theft by drivers or damage on the cars by riders to murder. Slow or false reactions can have strong influences on Uber's public relations efforts and might result in litigation costs. Uber has not had a successful record regarding incidents in the past which might continue to affect business in the future. Uber manages this by terminating user access to its platforms based on previous reported incidents, imposing required qualifications for drivers and merchant or low ratings received from users. Uber's ability to onboard drivers to its platform may be reduced by changes in driver qualification and background-check requirements, which increase costs. Allegations have been made that its background check process is insufficient or inadequate. Legislators and regulators may pass laws or adopt regulations in the future requiring drivers to undergo a different type of screening, or background check process in comparison to existing ones. Establishing new processes can become costly and time-consuming. Uber relies on a single background check provider in certain jurisdictions. In case this provider fails to provide background checks on a timely basis, Uber may be unable to onboard new drivers or retain existing ones. The likely future regulations could also reduce the number of already existing drivers on its platform based on noncompliance with the new required background checks. This cannot only take form of a driver being terminated based on factual noncompliance but also because of a lack of unavailable data of the driver. These processes will most likely vary in jurisdiction and will increase lead times of acquiring new ones.

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Another crucial challenge will be to maintain and enhance Uber's reputation. This is critical to its success in attracting and retaining drivers and soon employees as well as platform users. Negative media coverage and past cultural issues have damaged its brand, making it difficult to increase product confidence and politically motivated regulatory scrutiny. The successful restoration of Uber's brand will depend on its ability to reduce safety incidents, enhance its compliance programs, maintain a high level of service, and continue its marketing and public relations efforts. Uber has already taken steps to restore its brand and reputation, but these efforts have involved significant costs and may not be successful. Uber's brand and reputation may be harmed by events outside of its control, such as licensing its brand in connection with divestitures and joint ventures, including to Didi in China. (Uber Technologies, Inc. 2022)

Operational Risk – Technology investments

Uber has made investments to develop new products and technologies and plans to continue investing in these areas. Through acquisitions, it has expanded its Delivery offering to include grocery delivery. However, there are risks associated with these initiatives, such as regulatory challenges and the potential for its products to become noncompetitive or obsolete. There is no guarantee that consumer demand for Uber's new initiatives will be sufficient to generate enough revenue to offset the associated costs and liabilities. The company's development efforts could distract management from ongoing challenges by redirecting resources from existing services.

If successful, new products may be subject to increased regulations that could impact its ability to commercialize them. If the expected benefits of its investments do not materialize, it could harm the company's prospects.

One area where Uber has invested in is autonomous vehicle technologies. For example, in 2021, it merged its autonomous technology business with Aurora, including a \$400 million investment and a commercial agreement to collaborate on the launch and commercialization of

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self-driving vehicles on its ridesharing network. Uber believes that autonomous vehicle technologies can impact the industries it competes in and present opportunities. Other companies, such as Waymo, Cruise Automation, Tesla, Apple, Zoox, Aptiv, and Nuro, are also developing autonomous vehicle technology and may compete with Uber in the mobility, delivery, or logistics industries. Waymo has already introduced a commercial ride hailing fleet of autonomous vehicles, which could put pressure on Uber to offer its own autonomous vehicles on its platform. If its competitors bring autonomous vehicles to market before it can offer its own, or if their technology is perceived to be superior, it could adversely impact Uber's financial performance. The use of autonomous vehicles could reduce the cost of providing ridesharing, delivery, or logistics services, allowing competitors to offer services at a lower price than what is available on Uber's platform. This could lead to a significant number of consumers choosing its competitors' offerings over Uber's, impacting its financial performance and prospects.

Autonomous vehicle technologies pose risks in the form of crashes which could be fatal. Failures of the technology offered or crashes involving autonomous vehicles using the technology of its partners could hurt Uber's brand and motivate further regulatory actions. Government regulations on autonomous vehicles are developing, and these regulations could limit Uber's ability to offer autonomous vehicles on its platform. If it or its partners cannot comply with regulations or laws, they could face substantial fines. Furthermore, Uber's autonomous vehicle strategy, could add to driver dissatisfaction as it will reduce the need of drivers.

Operational Risk – Cash Management

Uber accepts cash payments for deliveries and rides in some of its markets like south America or the middle east. In 2021, cash-based trips accounted for approximately 7% of Uber's global Gross Bookings. Given the growth of these regions the percentage could continue to increase,

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particularly in the markets in which Careem Ubers wholly owned subsidiary operates. The use of cash raises regulatory, operational, and safety concerns. Many jurisdictions have specific regulations regarding the use of cash for ridesharing. Failure to comply with these regulations could result in significant fines and could lead to regulators suspending Uber's operations in those jurisdictions. In addition to these regulatory concerns, using cash can increase safety risk for Drivers and riders. If Uber is unable to address safety issues, Ubers reputation and brand will be influenced. (Uber Technologies, Inc. 2022)

Establishing the infrastructure to collect the service fee on cash trips is complex, and Uber may not always be able to collect the entire fee for such trips. Uber has systems for Drivers to collect and deposit cash from these trips and deliveries. However, these systems may not always be effective, or widely adopted by Drivers. Maintaining and improving these systems requires significant effort and resources, and Uber cannot guarantee their effectiveness in collecting amounts due to them. Additionally, operating a business that uses cash raises compliance risks with respect to various rules and regulations, including anti-money laundering laws. If Drivers fail to pay Uber or if their collection systems fail, Uber may be unable to collect amounts due and may incur costs associated with enforcing the terms of their contracts, including litigation. (Uber Technologies, Inc. 2022)

Financial Risk – Profitability and Financing

Since its inception, Uber has incurred significant losses. It incurred operating losses of \$8.6 billion, \$4.9 billion, and \$3.8 billion in the years ended December 31, 2019, 2020, and 2021, respectively, and as of December 31, 2021, it had an accumulated deficit of \$23.6 billion. (Uber Technologies, Inc. 2022) To achieve profitability in many of its largest markets, including the United States, Uber will need to generate and sustain increased revenue and further decrease its cost structure. However, even if it succeeds in doing so, it may not be able to maintain or

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increase profitability. In the near term, Uber may continue to incur losses as it invests in increasing the number of drivers, consumers, merchants, shippers, and carriers on its platform. Market expansion expected increase in marketing and operational structures as well as investments in R&D for new products further add to the cost structure. These efforts have been more costly than anticipated in the past by its management. Many efforts to generate revenue are unproven, and any failure of these projects will prevent Uber from attaining profitability. Additionally, Uber may not realize the operating efficiencies it expected to achieve from its acquisition of companies such as Careem and Postmates. To maintain its competitiveness, Uber may need to raise additional funds to support its business growth and invest in new products and markets. However, this could result in dilution of existing shareholders' equity and the issuance of new securities with superior rights. Additionally, existing debt instruments could make it further difficult for the company to obtain additional financing. If Uber is unable to secure adequate financing mainly through proving its profitability, it will likely fail to sustain growth.

Legal Risk –Taxi services lobbying efforts

Due mostly to regulations and severe regulatory constraints in several countries, such as those in Germany and Spain, the Uber ridesharing business model has been restricted, capped, or suspended, or Uber has been forced to adapt its business model. Uber has sought and been granted licenses or permissions in some cases, and they are required to uphold the conditions of the licenses or risk having them revoked. Uber might also be unable to keep any such licenses or permits current or renew them. Traditional taxicab and car service providers continue to press lawmakers and regulators in several jurisdictions to prohibit the use of uber services or to have uber submit to the same insurance, licensing, and other regulations that apply to taxi services.

Legal Risk - Driver Reclassification

One of the ongoing challenges Uber faces is the potential reclassification of Uber drivers from independent contractors to employees of the company. This reclassification is currently being pursued by legislators in the United States and abroad. According to Uber, its drivers are independent contractors who are free to choose when and where to work on the Uber platform and can also work for other ride-hailing companies. If a reclassification in a market cannot be avoided, it is estimated that this could lead to cost increases of up to 30% and damage Uber's growth potential. The European market is especially in jeopardy based on a negative sentiment and past passed regulations against Big Tech in the EU like the Digital Markets Act in Q1 2022. Most prominently the Supreme Court of the U.K. ruled in 2021 that Uber drivers are to be reclassified as workers, forcing Uber to entitle 70,000 of its drivers to a minimum wage, holiday pay, and eligible drivers to a pension plan. Bank of America estimated that this decision could cost the firm more than 500 million dollars (Browne 2021).

Additionally, reclassification of Drivers as employees poses the threat of unionization or the establishment of similar organizations. This threat became reality when Uber officially recognized a UK driver union. Uber states that further unionization across other markets and collective bargaining efforts deviating from the current business model could materially affect Uber's operating results. Furthermore, reputational harm could be followed in case of strong labor disputes. Uber already warned investors in its 2021 annual report that the company may not be successful in defending the classification efforts in some or all jurisdictions, and the costs associated with defending, settling, or resolving related legal issues have been and may continue to be significant for the company. Additionally, future competitors may share the benefit of any regulatory or governmental approvals and litigation victories that Uber may achieve, without having to incur the costs that Uber has incurred to obtain such benefits.

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Uber's meteoric rise was not without challenges, the aggressive practices deployed by Travis Kalanick to succeed in the ride-hailing business came under scrutiny from different stakeholders. First, this case will exemplify the difficulties of competing in the global gig economy by elaborating on Uber's competitive landscape in China. Second, Uber's legal basis of its operations is challenged by the existing taxi industry and threatens the companies' established markets as well as the further acquisition of new ones. Third, Uber's marketing efforts have become key to scaling and attracting new users. Fourth, Uber is exploring vertically integrating and offering different services to further scale but not without challenges. Finally, Uber's profitability has been challenging previous valuation assumptions and questions the sustainability of its business model.

Uber's offering and next services to scale

Mobility provider or technology platform?

To grasp Uber's complete service offering is not straightforward. The services range across different modes of mobility and other services. Adding the case of Uber regularly introducing new services while ceasing less successful options makes the service portfolio highly dynamic. Nevertheless, Uber employs an extremely minimalistic, simple, and intuitive mobile app which guides the user and prevents overstimulation (**Exhibit 16**). Besides its B2C services, Uber offers a B2B platform as well. Like the company name suggests, Uber Technologies Inc., sees itself as a technology platform instead of a sheer mobility provider. This transformation is also reflected in the transition from matching drivers with passengers, like stated on the product website, "Changing how people can request rides and get from point A to point B is just the beginning," to the currently available "Technology offerings", (Uber Technologies, Inc. 2022). Uber built upon their existing infrastructure to scale their business model and expand into further areas. For instance, delivery leverages the supply of drivers on the network and Freight takes advantage of existing technology, brand, and experience (Uber Technologies, Inc. 2021).

Vertical integration

In Uber's case, vertical integration refers to "a private company [that] provides an app and access to multiple mobility services owned and operated by that company on a single platform (e.g., Uber, UberPOOL, UberEats, Uber Copter, etc.)," (Shaheen, Cohen und Farrar 2019). As portrayed in **Exhibit 17**, Uber offers a transportation network, shared micromobility (bikes and scooters), a courier network, and eventually, mobility aggregation in one app. In terms of horizontal vs. vertical integration, the focus of Uber lies on the second. However, initial efforts of horizontal integration have been undertaken through the assimilation of Lime scooters and bikes into their own app (**Exhibit 18**). Offering taxi rides and car rentals from third party providers are other examples. Harnessing this strategical method, Uber is not the only nor the

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first one. The predominant occurrence of vertical integration is widespread across platform-based business models (Van Dijck 2021). Successful examples include

- **Amazon** (e-commerce → streaming, cloud services, food delivery, etc.),
- **Google** (search engine → smartphones, mapping, payments, autonomous cars, etc.),
- **Apple** (computers → smartphones, software, autonomous cars, streaming, etc.), and
- **Facebook** (social network → messenger, cryptocurrency, VR, metaverse, etc.).

The strategy of at first, dominating the core business domain plus finally, growing “tentacles” into new sectors to secure additional sources of revenue (The Washington Post 2021), was replicated by Uber. The two concepts Mobility on Demand (MOD) and Mobility-as-a-Service (MaaS) are arising more frequently in literature and are connected to vertical/horizontal integration. MOD spotlights the commodification of passenger mobility and on-demand access to delivery, mobility, and transportation. Instead, MaaS is mostly referring to passenger mobility aggregation and the brokerage and bundling of modes into subscription services (Shaheen und Cohen 2020). Both conceptions describe Uber’s approach of pooling multiple types and providers of mobility solutions to enable instantly available services.

Strategic Partnerships, Mergers and Acquisitions

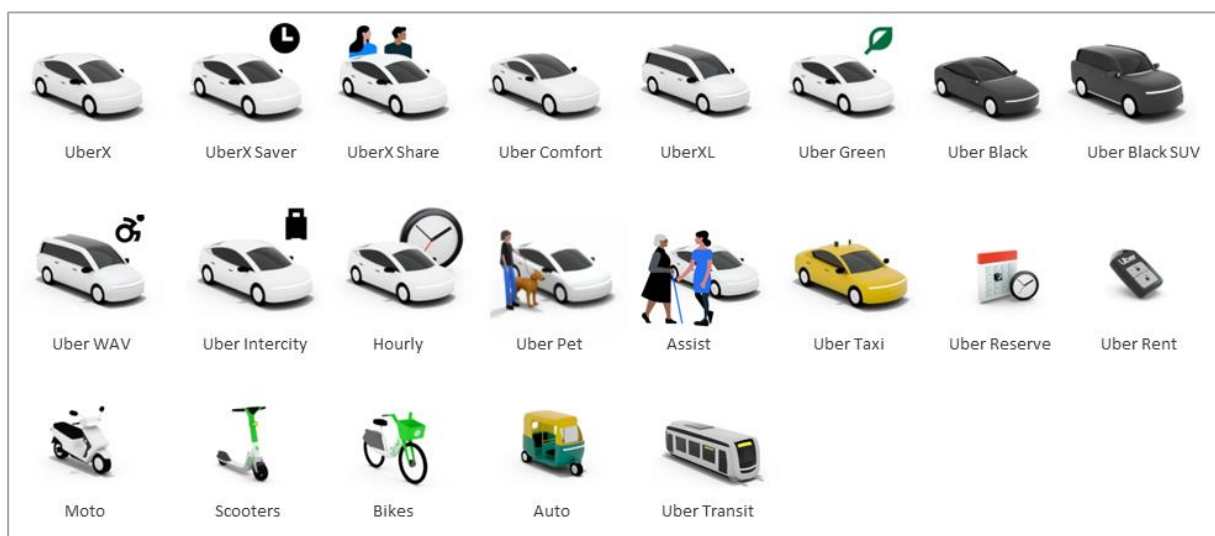
Uber’s M&A activities play an important role in the diversification of services. Alike the tech giants mentioned above (**Exhibit 19**), Uber substantially expanded its offering through mergers and acquisitions. For instance, in 2021, Uber acquired Cornershop and Postmates which allow to deliver groceries as well as Drizzly which enables to deliver alcohol. Through the acquisition of Transplace, Uber exploits its transportation expertise for Uber Freight (Uber Technologies, Inc. 2021). Plus, strategic partnerships (e.g., between Uber Eats and McDonalds) are formed to secure market segments and make use of foreign resources with low investment.

Overview of Uber's current product portfolio

The service portfolio of Uber (as of November 2022) is clustered in the following business segments: **Mobility** (formerly known as Rides), **Delivery** (formerly known as Eats), and **Freight** (Investopedia 2022). The extent and characteristics of the services offered in those three segments depend on the geographical market and therefore, vary across regions. Different legislation and the distinct mobility infrastructure from city to city are accounting for the geographical diversification. Plus, Uber's segments serve large and fragmented markets.

Uber's flagship category **Mobility**, the ride hailing platform, refers to services that connect passengers with drivers. Business activities related to Uber's offering of its financial partnerships are also included in the mobility segment (Uber Technologies, Inc. 2021). All current Uber mobility options are displayed in **Figure 10**.

Figure 10: Overview of Uber's mobility solutions (as of 3rd November).



Source: Own composition, images from <https://www.uber.com/us/en/ride/ride-options/>

UberX is the standard ride with usual economic-class sedans at affordable prices and space for up to four passengers. Whereas the prices for *UberX Saver* can even be lower but longer waiting times and limited availability must be considered. With *UberX Share* (also known as: Uber Pool), a consumer can save up to 20% and additional CO2 emissions when matched with

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another passenger along the route, while not adding more than eight minutes extra time in average (Uber Technologies, Inc. 2022). *Uber Comfort* comes with higher fares but newer cars that provide extra leg room, high-quality drivers (plus the option whether to chat with them or not), and in-car temperature setting. *UberXL* (also known as Uber Van) is like Uber X but as SUV with space for up to six people or additional luggage. *Uber Green* trips with hybrid or electric cars emit 25% less CO₂ and are thus, the more climate-conscious alternative (Uber Technologies, Inc. 2022). The extra 1\$ fee will be split evenly between the driver and the Green Future Program of Uber. The Green Future program is a fund to support drivers changing to electric vehicles by 2025. Therefore, it represents a key driver for Uber achieving net-zero emissions by 2040 (Uber Technologies, Inc. 2022). Additionally, passengers are incentivized by receiving double Uber Rewards points. *Uber Black* is the premium class and high-price segment of Uber intended for business executives, for example. It promises expert drivers, leather backseats, tailor the trip environment (like *Uber Comfort*), more flexible pick-ups, and premium customer support. Accordingly, *Uber Black SUV* is the larger premium version with SUVs like UberXL is for UberX. *Uber WAV* or *Uber Assist* are wheelchair-accessible vehicles to cease barriers for seniors and disabled people. The drivers are trained and supportive. *Uber Intercity* allows for trips from city to city, available in India. With *Uber Hourly*, riders can pay a fixed price for one, two or more hours containing incremental stops. *Uber Pet* lets the passenger bring a small animal such as a dog or a cat for an additional fee. Despite the controversial between Uber and cab drivers, Uber managed to offer local taxi rides within their app named *Uber Taxi*. Planning up to 30 days ahead is made possible by *Uber Reserve* which serves as a meta-option to book many of the above-mentioned services in advance. *Uber Rent* works like a usual car rental (Sixt, Europcar, etc.), merely every step is conducted through the Uber app. Uber partnered with car rentals to offer this service. *Uber Moto* provides affordable and convenient motorcycle rides. *Scooters* and *Bikes* are also available in-app, both provided

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by the mobility company Lime. In New Delhi, *Auto* carries passengers in auto rickshaws fast and to fare estimate upfront. Finally, *Uber Transit* shows real-time information about local public transport, similar to other mobility apps that include public transportation (e.g., Google maps, Moovit). Finally, special modifications of initial offers like *Uber for Ukraine* (UberX with \$1 donation) are also occasionally part of the product portfolio.

Uber's **Delivery** segment started as Uber Eats in 2014. As a direct answer to the contact restrictions of the pandemic in 2020, Uber completely revamped and improved their existing food delivery services. Like depicted in **Exhibit 20**, this was a highly successful move since the gross bookings of Uber Eats compensated for the heavy decline in ride hailing bookings through Covid-19. This was also reflected in revenue (**Exhibit 21**). The delivery segment allows customers to find local restaurants, order meals, and choose between picking it up or have it delivered. Additionally, in some regions, the delivery service also consists of offerings for grocery, alcohol, convenience store deliveries and other selected goods (Uber Technologies, Inc. 2021). In April 2020, *Uber Connect* (also known as Uber Flash in South America) was launched to further diversify Uber's operations during the start of the pandemic. It allows for same-day local deliveries with no physical contact. The rider picks up the package from the sender and drives it to the submitted location. Thus, Uber replaces post offices and similar package businesses as intermediaries.

The **Freight** business is another of Uber's endeavors, launched in 2017. With Freight, Uber has a stock in the logistics industry while aiming to disrupt it. The main purpose of the Freight platform is to connect shippers with carriers. Uber enables shippers – businesses in all sizes that seek to ship goods globally – to manage shipments with a few clicks, secure capacity, receive prices upfront, and track the respective cargo (Uber Technologies, Inc. 2021).

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Uber Works could have been another new segment. It launched in October 2019 and had to shut down in May 2020 due to low traction ascribed to the Covid-19 restrictions. It was Uber's response to on-demand staffing issues of corporations. The App connected work-willing people with employers who required gig workers for short-term tasks and projects. Furthermore, public health services lacked awareness and convenience. Therefore, *Uber Health* was launched in 2018. The first was solved with the every-day use of the Uber app and the latter, was tackled with Uber's platform full of gig-working drivers. The goal is to provide better access to care and services, focusing on non-emergency transportation. Currently, the service is only available in the US. Finally, *Uber Business* serves Uber's corporate clients with rides, meals, and delivery – representing Uber's efforts in the B2B market. Distinct controlling, analytics, and budgeting features are included for the employers who use Uber Business for their staff.

Technological Ventures

Uber announced a partnership with Motional to revitalize their dream of self-driving cars which was perceived to be dead. Motional is a joint venture between Hyundai and Aptiv. Besides electric vehicles (EV) and flying passenger drones, the most promising transportation mode for Uber is ride hailing via autonomous vehicles (AV). AV are seen as salvation for the scaling of Uber's business model by stakeholders and thus, for its long-awaited profitability.

Since 2015, Uber has been researching on and testing AV with its own subdivision Advanced Technologies Group (ATG). High investments were made into R&D. The launch was initiated by a partnership with Carnegie Mellon University's National Robotics Center. Additionally, Uber was focusing on autonomous trucks but eventually abandoned it due to the following legal controversies. In 2016, Uber acquired the self-driving truck startup Otto. The four co-founders were prestigious engineers of Google. One year later, their former employer Google started arbitrations against two of them, Anthony Levandowski and Lior Ron. Independently, Waymo – Alphabet Inc.'s AV company – filed a lawsuit against Uber for trade secret theft and patent

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infringement. As a result of Levandowski's steal of trade secrets and defection for Uber, he was sentenced to three years of prison. It was one of the most spectacular criminal cases in Silicon Valley, following Uber's sentence to pay \$245 million in stocks to Waymo (Bloomberg Law 2022). In 2018, one of Uber's AV killed a pedestrian in a fatal crash, preceding an accident without injuries in 2017. It was the first-ever recorded deadly AV crash in history. Thus, another somber record set by ATG that created negative press and public retention. In consequence, testing of AV stopped for a while. Financially, the division was valued at \$7.25 billion before Uber's IPO and after final investments, in April 2019 (Reuters 2019). Maintaining a market capitalization of around \$60 billion in April 2019 (Companies Market Cap 2022), ATG represented more than 10% of Uber's value at that time. ATG managed to pilot with level 4 AV, like the competition around that time, and aimed towards deploying level 5 AV in future. **Exhibit 22** shows the taxonomy of automation levels in driving. In December 2020, ATG was sold to Aurora Innovation. The lawsuit against Waymo, the fatal crash, organizational difficulties, and the pressure of cutting costs during the pandemic led to the sale. Albeit Uber ditching its own driverless car research unit, it still maintains a stake in the development of this technology. Part of the sale involves Aurora the possibility to deploy AV on Uber's platform, a \$400 million investment of Uber in Aurora (resulting in a 26% minority stake), and Uber CEO Dara Khosrowshahi as new board member of Aurora (TheVerge 2020). Almost simultaneously, in December 2020, Uber sold their air taxi division "Uber Elevate" to Joby Aviation, an electric aerial ridesharing startup. Air taxis are flying drones that carry passengers which are also called VTOL (= vertical take-off and landing), displayed in **Exhibit 23**. During the pandemic, Uber was forced to sell these long shots with the promise of reorientating to the core business and finally becoming profitable. The Deal with Joby resembles the one with Aurora – mentioned above – and Lime. As Lime bought Uber's micromobility segment "Jump", Uber invested \$170 million in Lime and added their services to the app. Similarly, Uber invests

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\$75 million in Joby Aviation and commits to a partnership. Both companies declared to integrate each other's services into their respective apps when the technology lifts off.

A general manager of UberEATS explained that driverless drone delivery could become of much more importance than AV regarding the delivery segment. According to him, Uber is always striving for "adding more tech to the human part of business"². Despite the significance of drones, AV are already getting tested for Uber's delivery. In September 2022, Uber announced a partnership with startup Nuro. Nuro, founded in 2016 and raised \$2.1 billion so far, is one of the few companies that is permitted to deliver goods driverless and charge customers for this service. Besides, only competitors Cruise and Waymo are allowed to deploy AV commercially. Nuro's delivery robots drive on public streets (**Exhibit 24**). The next generation of bots called "Nuro" – planned for late 2023 – will be able to carry twice the load of "R2" which is running now and can even cool or heat items. Uber committed itself to this idea with a 10-year partnership with Nuro (TechCrunch 2022). Plus, Uber will dive into delivery with partner Motional as well. Uber will deploy delivery AV based on Hyundai Ioniq 5 (**Exhibit 25**), but compared to Nuro's bots, they are backed by a "human safety operator" (TechCrunch 2021). In May 2022, the first two AV delivery pilots were conducted together with Motional and Serve Robotics. The latter was the robotics division of Postmates which was acquired by Uber in the end of 2020. In February 2021, Serve Robotics spun off as independent company – still majorly backed by Uber. Short delivery routes were performed by the sidewalk robots of Serve Robotics (**Exhibit 26**) while longer distances were conducted by Motional's self-driving cars (The Robot Report 2022). When it comes to the deployment strategy, Uber managers keep emphasizing on only making use of AV where "it makes sense" yet (CNBC 2020). In general, Uber attempts to disclose only as much information as needed since

² The Uber manager was interviewed in an event but prefers to stay anonymous, further details can be obtained upon request.

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competition is tough while the market grows (CAGR of 25.7%). Plus, the market opportunity is projected to be worth around \$197 billion in 2030 (Strategic Market Research 2022).

Teaching Note

Case Synopsis

The case starts in the present (late 2022), showing what Uber is and what it offers. Uber's current services are explained. The strategic motivations and the introduction of new offerings are highlighted with respect to scalability. Transcending to the future, the case sheds light on recent technological ventures of Uber. In 2020, the AV department was sold but Uber is heading to a driverless car reattempt in 2023, including the technology of partners. An evaluation of self-driving cars as means to scale Uber's business model is suggested, considering Uber's existing products and the market environment.

Learning Objectives

- Introduction to Uber's individual offerings and the strategic intentions behind the structure of its service portfolio
- Basic understanding of future technological concepts (EV, AV, drones) and their respective potential to scale Uber's business
- Insights from risky and yet innovative endeavors from Uber, including the purpose of initiation and reasons for cancellation
- Assessment of Uber's new strategy regarding AV deployment via partnerships

Target Audience

Since a fundamental understanding of business administration, economics, finance, and technology is required, this case suits best for postgraduates. Due to the theoretical frameworks

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addressed and yet practical environment of the case, both M.Sc. and MBA students can benefit of the learnings from the case session. This also applies for executives.

Teaching Plan

In the beginning, a short sequence of “Super Pumped: The Battle for Uber” – HBO Max series of 2022 – sparks motivation and fosters excitement among students, e.g., showing the rivalry between Uber and Google regarding self-driving cars. First, a common understanding of the business implications of AV should be established. A mind map as visual tool suit well. Since multiple groups of interest are directly or indirectly involved in the case, it can be analyzed from different perspectives. Thus, it invites for a groupwork. Each group member can occupy the role of one stakeholder. In class, groups will be formed and provided with space to discuss. Online, the groups will be forwarded into separate breakout-rooms. To consolidate learning at the end of the case session, students are promoted to reflect before voting in a poll (e.g., Kahoot) on summarizing questions. Alternatively, voting per hand raise provokes justifications of students’ voting answers and promotes debate.

Assignment Questions

1. Besides Uber’s plans, how ready is the technology of driverless cars for broader market adoption and commercial exploitation?
2. Have a look at **Figure 10**. How could a driverless ride supplement Uber’s overall service strategy?
3. Are there similarities to Uber’s technological “bets” from the past? What can be learned?
4. Despite the crash, lawsuit, and financial pressure, why is Uber still holding on to the idea of self-driving cars? Evaluate the new strategy and describe a possible scenario.

Case Analysis

1. It is still uncertain when driverless cars become commercially available. Experts try to estimate the **time-to-market**. In 2021, McKinsey found that companies are expecting to deploy level 4 AV between 2024 and 2025 (**Exhibit 27**). Whereas the appearance of level 4/5 robotaxis in urban areas is estimated around 2028. A recently published report expects the availability of AV with large price premia in 2030, holding a market share between 1-5%. Around 2050, AV are estimated to be adopted with minimal price surcharge to a degree varying between 20-60% (Victoria Transport Policy Institute 2022). On the supply side, scientists, engineers, and managers continue collaboration to achieve a sellable product with appropriate margins. On the demand side, to become an accepted technology in every-day life, society must comprehend its benefits. A meta study discovered “perceived usefulness, attitude, trust, safety, hedonic motivation, and social influence” as crucial precursors for the broad adoption of AV. The level of automation, type of vehicle ownership and cultural context acted as moderators (Gopinath und Narayanamurthy 2022). Additionally, to estimate the current state of an innovation, technology life cycles can be used. Analyzing the so-called **S-curves** of patents is a widespread tool (Lidan, et al. 2013). AV are currently in the “testing and approval phase”. The next stage is “commercial release” (**Exhibit 29**). As portrayed in the **innovation chasm** (**Exhibit 30**), the initial users are called innovators. The terminal goal is to become attractive for the broader audience. A precedence case to analyze was introducing the mass-friendly Uber X in 2012 besides the initial high-price Uber Black. Here, Uber already successfully crossed the chasm.

2. Uber adding self-driving options to their service portfolio further increases its **vertical** or **horizontal integration**, depending on the exact strategy. Vertical, if Uber itself would develop and deploy the cars and horizontal, if Uber involves the cars of third-party providers. With ATG, the in-house development failed. So, the latter is currently being pursued. Another new mode of mobility offered in the Uber app is another step towards building a so-called “**super-**

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app”: different services and providers combined in a single smartphone app. An example is WeChat in China. The app offers messaging, broadcasting, payments, a social network, a video platform, gaming and much more. Moving towards the development of such super-app adding AV rides, Uber could exploit network mechanics and increase customer loyalty. Plus, Uber is profiting from its strong brand image. In times of low switching costs regarding delivery and ride hailing, the **trust** of customers is a distinct competitive advantage. Uber is on the way of building such one-stop service portal. A user-oriented solution that prevents effortful searching of AV providers in an emerging and fragmented market. Referring to MaaS, the introduction of the Uber One membership further increases the **stickiness** of Uber’s app. The subscription model can convert users who just want to try the disruptive driving experience of sitting in a self-driving car. Plus, the attention of curious users will get to Uber’s other services, one tap away. So, driverless options show enormous cross-selling potential. To analyze the stickiness of the AV introduction, the customer acquisition costs (CAC), and the churn rate could be measured (Ries 2011). Whereas the comparison between customer lifetime value (LTV) and the costs per acquisition (CPA) indicate the degree of profitability of a new AV option. However, autonomous cars need to inhabit distinct features. A clear value proposition differentiates them from Uber’s other solutions. The potential attributes of an AV option can be derived through data gathered from existing options, combined with generated data from piloting. Here, tools like a conjoint analysis (**Exhibit 31**) could help discovering critical product features (electric engine, optic, offroad, heating, Wi-Fi, etc.) and determining an appropriate price. Otherwise, self-driving cars act as perfect substitute for UberX or other mobility options. This could increase the already existing **product cannibalization** among Uber’s services (CNN Business 2018). This translates to Uber itself stealing Uber’s customers. It could be discussed if replacing own services is a natural part of product improvement as well as technological advance and thus, crucial for innovativeness. Furthermore, it is open how AV could eventually

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be introduced in respect to the existing offering: product differentiation (Uber XL, but now also available as driverless option), product diversification (AV as new product category/type) or product variation (Uber Comfort will be replaced by Uber Autonomous Comfort).

3. Not all of Uber's ventures went like forecasted and thus, failed to fulfill expectations. ATG, Elevate and Uber Work were ceased or sold. Tapping into emerging technologies represent a **make or buy** decision (**Exhibit 32**). A thoughtful cost-benefit-analysis can provide a data-backed decision base. Uber already tried several in-house developments and thus gathered real data of costs and advantages. These can be used for quantitative analysis. Observing competitors' best practices regarding outsourcing may also provide valuable insights. Referring to **Exhibit 32**, the advantages of making did not realize fully (too costly, bad organizational management, lack of resources to ensure high quality) with ATG and Elevate. Nevertheless, the risks of completely transferring control and the still inherent technological capacity of Uber discount pure outsourcing. Especially, due to the importance of the self-driving technology, Uber's way could involve partnerships. Like this, "Uber can still have a hand in the game", while securing "a path to market when this technology is actually deployable in several years," (The New York Times 2020). **Scaling things out** refers to a targeted reduction or cancellation of activities (The Startup Factory 2019). Under the premise "subtract as you add", unsuccessful activities will be decreased or abandoned. A sober analysis prevents **sunk cost fallacy**. This frees up resources for the more promising areas to scale and allows to fully concentrate on them. This may have been a reason for letting go of Otto, ATG, Elevate and the others. Additionally, too intense diversification consumes resources and dilutes ownership, ending in "**diworsification**". Applied to Uber, challenges could arise pursuing its agenda of becoming emission-free by 2040. Regarding Uber's ambitious efforts to become a complete "net-zero-platform" by 2040 (Uber Technologies, Inc. 2022), it should be considered that ride hailing exhibits a 69% higher footprint than the trips it replaces (Union of Concerned Scientists 2022).

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Plus, a certain degree of sustainability is demanded by the public, investors, and most probably by policymakers as well in future. So, facing the responsibilities due to climate change, Uber's green business (non-fossil fuel fleets, incentives, education, etc.) cannot be just sold in times of crisis or underperformance. The transition to sustainable cars and the piloting of autonomous cars are conducted parallel, right now. Then, Elevate and ATG were initiated around the same time, running simultaneously. But they were also sold in the exact same month. A scenario of merging both endeavors, electric and autonomous cars, could be considered. Electric/hybrid driverless cars are sustainable *and* fully automatized. Finally, **legal controversies** like the lawsuit versus Google should be prevented. Probably, the illegitimate sourcing of foreign technology secrets was a result of Travis Kalanick's reckless leadership style of winning at all costs. Operating in legal grey area can be yet rewarding short term. However, long term, the guilty player needs to deal with the consequences of the misbehavior. And in fact, the race for autonomous ride hailing is a marathon, not a sprint (**Exhibit 27**).

4. For Partner **Motional**, the deal brings talented employees and operational assets as well as access to Uber's mobility platform and investors (e.g., Toyota). Like this, time to market could be diminished. Equipping the specialized partner as generalist like Uber could pay off. One has the product, the other the platform for distribution. The unique position of ride hailing providers in terms of distribution is an advantage against pure producers. This brings another benefit compared to AV developers. AV currently are only able to drive in a pre-mapped environment under optimal conditions. Human drivers who will still be in the network, can compensate for difficult routes that can't be automatized. Plus, AV can increase the reliability and density of the network. However, Motional is also partnering with Lyft. This represents a challenge for Uber since its partner does business with the direct competitor. Nevertheless, Lyft following the partnership approach before Uber could indicate its viability. Lyft partnered with AV providers to let them use their platform to gather data. However, Uber could benefit from the

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second-mover advantage like before, as it copied Lyft's path of providing rides without professional licensing or insurance. Testing the driverless technology is a perfect example for examining the **build-measure-learn loop** (Exhibit 11). With the pilots, hypotheses can be validated (e.g., H_1 : The introduction of automatized delivery leads to increased customer satisfaction, H_0 : The introduction of automatized delivery has no effect). Occasional experiments ensure finding out where the technology has positive impact and adds value while keeping costs at a minimum. Uber concludes the occasional pilots by deploying AV "where it makes sense" (TechCrunch 2022). Speaking of public statements of Uber concerning its AV strategy, minimal number of insights is being enclosed. Like this, Uber protects itself against copycats. Simultaneously, it is hard to grasp the direction Uber is heading for external stakeholders. Once the technology is suitable for the mass, patterns of successful use cases can be repeated. Earlier, Uber already used standardized playbooks to expand into different cities. Ultimately, a transition to autonomous fleets promises the essential blessing for Uber's business model: **cutting costs**. Considering the current advancement level of AV, the cost reductions could not realize until medium or long term. Plus, since a widespread AV rollout will be far in the future and connected with uncertainty, the potential power of economies of scale cannot be estimated yet. Regarding the margins of Uber's ride hailing segment, a share of every ride's final price paid by the consumer is earned by Uber. So, the end price is calculated with respect to many factors. One is the total costs per mile. If the total per mile costs are split up in positions, the driver usually accounts for around 80% of the costs (Frost & Sullivan 2015). In the case of Uber, the drivers receive 70% of each fare. However, spendings for driver referrals and incentives to work for Uber need to be added. These amounted to \$ 1 billion only in 2018, for example (WIRED 2019). Plus, the costs for drivers could rise further for two reasons. First, competitors could offer better incentives or contracts that stipulate exclusivity. Second, several labor rights protests that lead to legislation changes could force Uber to treat their drivers as

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employees instead of contract workers (CNBC 2022). So, human drivers could become even more expensive for Uber. Plus, if Uber manages to cut the driver out of the equation, it not only could earn a higher share per ride, but also passengers profit in the form of cheaper rides. Furthermore, not only the driver costs (= fix costs) could be diminished through automatization but also the operational costs (= variable costs). A meta study finds that AV are expected to cost between \$0.30 and \$0.50 per mile around 2035 (Cortright 2017). For comparison, human driven cars costed around \$0.64 per mile in 2020 (Victoria Transport Policy Institute 2022). Moreover, Uber's **asset-light strategy** was one of the key pillars for scalability and attracted numerous investors. Since the company's revenues rely on the number of services sold, the ability to scale must be priority while initiating a driverless car supply. Within a cost-benefit-analysis, the total costs of the human driven cars should be compared to the total costs of either owning AV or establishing a platform for third parties. Besides high investments into R&D, constant maintenance, storage, and depreciation costs need to be accounted when developing an own fleet. Alternatively, Uber could position itself as **marketplace for third party** AV owners that want to rent their cars. Passengers could get access to AV, the owners can sell access to their cars, and Uber enables this with its potent platform. To ensure functionality of the platform business model, pulling users and providers is crucial. Balancing demand and supply will still play a dominant role since Uber operates a two-sided market platform. The deployment of referral systems could again be vital. It's also necessary to keep cultivating the Uber **community**. They already backed Uber in their various fights, e.g., protests, industry resistance and lawsuits (**Exhibit 33**). AV are still controversial in terms of safety and labor loss. Therefore, the initiation of such disruptive technological change will bring resentment. For instance, see the higher negative public perception of self-driving cars after Uber's AV killed a pedestrian in **Exhibit 34**. Highlighting safety is one of many tools to overcome such concern in the perception of society (Praveena Penmetsa 2021).

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Market%20was%20USD%20](https://www.globenewswire.com/en/news-release/2022/10/10/2531178/0/en/Autonomous-Car-Market-Size-to-Reach-196-97-Billion-by-2030-CAGR-25-7-Confirms-Strategic-Market-Research.html#:~:text=The%20Advanced%20Driver%20Assistance%20Systems%20Market%20was%20USD%20)

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Appendices

Exhibit 1: Operating expenses items as a percentage of the total expenses from 2018 until 2022 (September 30).

	2018	2019	2020	2021	2022 (until Sep. 30)	Average
Cost of revenue	36%	28%	32%	44%	58%	39%
Operations and support	11%	11%	11%	9%	7%	10%
Sales and marketing	23%	21%	22%	22%	15%	21%
Research and development	11%	22%	14%	10%	8%	13%
General and administrative	15%	15%	17%	11%	10%	14%
Depreciation and amortization	3%	2%	4%	4%	3%	3%
Operating expenses	100%	100%	100%	100%	100%	

Source: Uber Technologies, Inc., Annual Reports

Exhibit 2: Gross Profit and Gross Profit Margin from 2018 until 2022 (September 30).

	2018	2019	2020	2021	2022 (until Sep.30)
Revenue	\$ 10 433	\$ 13 000	\$ 11 139	\$ 17 455	\$ 23 270
Cost of revenue	4 786	6 061	5 154	9 351	14 352
Gross Profit	5 647	6 939	5 985	8 104	8 918
Gross Profit Margin	54%	53%	54%	46%	38%

Note: All values are in millions, except percentages.

Source: Uber Technologies, Inc., Annual Reports

Exhibit 3: Revenue, cost of revenue, and gross profit margin compound annual growth rates (CAGRs) since 2018.

	2019	2020	2021	2022 (until Sep.30)	CAGR
Revenue growth rate	25%	-14%	57%	33%	22%
Cost of revenue growth rate	27%	-15%	81%	53%	32%
Gross Profit Margin growth rate	-1%	1%	-14%	-17%	-8%

Source: Uber Technologies, Inc., Annual Reports

Exhibit 4: Uber Technologies, Inc., Consolidated Statements of Operations since 2018.

	2018	2019	2020	2021	2022 (until Sep. 30)
Revenue	\$ 10 433	\$ 13 000	\$ 11 139	\$ 17 455	\$ 23 270
Costs and expenses					
Cost of revenue, exclusive of depreciation and amortization shown separately below	4 786	6 061	5 154	9 351	14 352
Operations and support	1 516	2 302	1 819	1 877	1 808
Sales and marketing	3 151	4 626	3 583	4 789	3 634
Research and development	1 505	4 836	2 205	2 054	2 051
General and administrative	2 082	3 299	2 666	2 316	2 391
Depreciation and amortization	426	472	575	902	724
Total costs and expenses	13 466	21 596	16 002	21 289	24 960
Loss from operations	(3 033)	(8 596)	(4 863)	(3 834)	(1 690)
Interest expense	(648)	(559)	(458)	(483)	(414)
Other income (expense), net	4 993	722	(1 625)	3 292	(7 796)
Loss before income taxes and loss from equity method investments	1 312	(8 433)	(6 946)	(1 025)	(9 900)
Provision for (benefit from) income taxes	283	45	(192)	(492)	(97)
Loss from equity method investments	(42)	(34)	(34)	(37)	65
Net loss including non-controlling interests	987	(8 512)	(6 788)	(570)	(9738)
Less: net loss attributable to non-controlling interests, net of tax	(10)	(6)	(20)	(74)	(2)
Net loss attributable to Uber Technologies, Inc.	\$ 997	(\$ 8 506)	(\$ 6 768)	(\$ 496)	(\$ 9 736)

Note: All values are in millions, except percentages.

Source: Uber Technologies, Inc., Annual Reports

Exhibit 5: Constitution of the other income/expense (net) from 2018 until 2022 (September 30).

	2018	2019	2020	2021	2022 (until Sep. 30)
Interest income	104	234	55	37	66
Foreign currency exchange gains (losses), net	(45)	(40)	(128)	(67)	(76)
Gain on business divestitures, net	3 214	-	204	1 684	14
Gain from sale of investments	-	-	-	413	-
Unrealized gain (loss) on debt and equity securities, net	1 996	2	(125)	1 142	(7 797)
Impairment of debt and equity securities	-	-	(1 690)	-	(182)
Change in fair value of embedded derivatives	(501)	58	-	-	-
Gain on extinguishment of convertible notes and settlement of derivatives	-	444	-	-	-
Revaluation of MLU B.V. call option	-	-	-	-	180
Other, net	225	24	59	83	(1)
Other income (expense), net	4 993	722	(1 625)	3 292	(7 796)

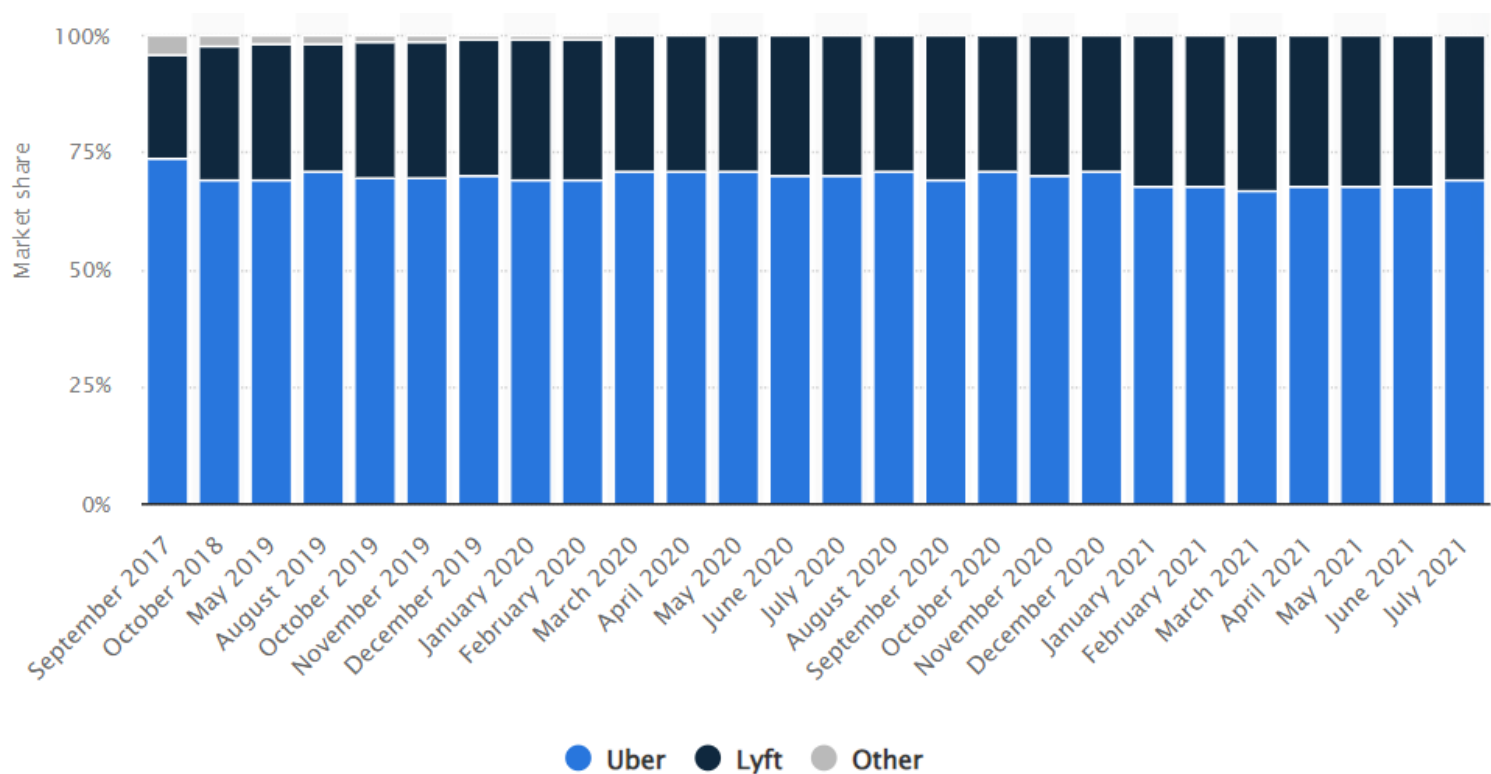
Note: All values are in millions.

Source: Uber Technologies, Inc., Annual Reports

Exhibit 6: Uber's main competitors and their segments.

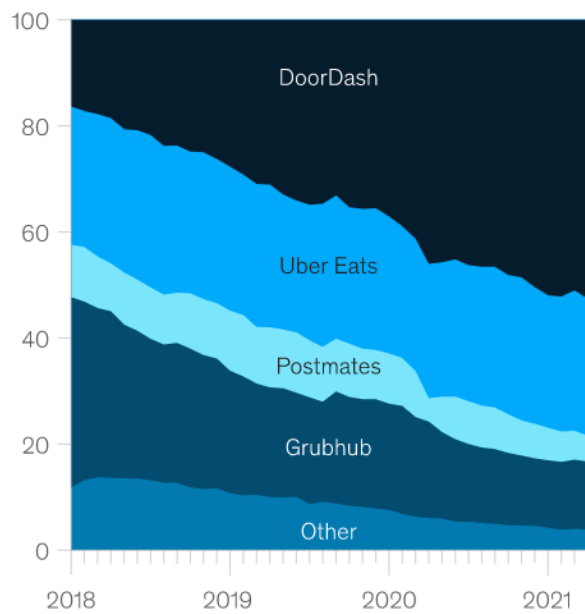
	Uber	lyft	DiDi	OLA
Ride-sharing	✓	✓	✓	✓
Food delivery	✓	✓	✓	
Freight	✓			
Electric bikes and scooters		✓		✓

Exhibit 7: Market share of the leading ride-hailing companies in the US from September 2017 until July 2021.



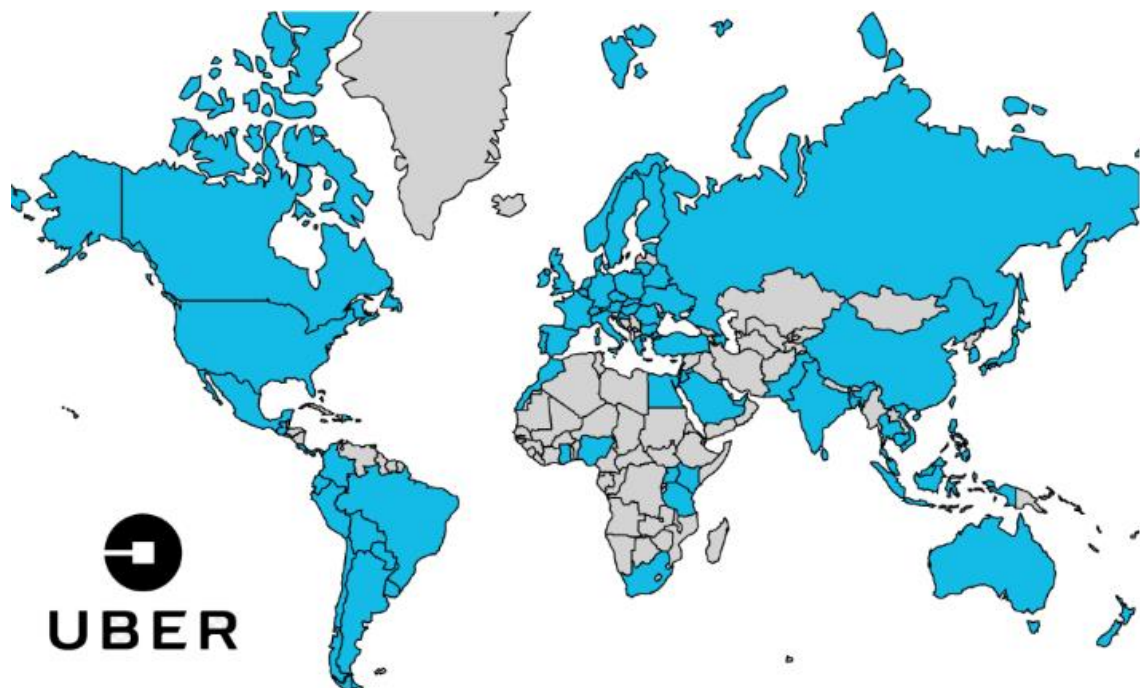
Retrieved from: <https://www.statista.com/statistics/910704/market-share-of-rideshare-companies-united-states/>

Exhibit 8: US monthly market share (in %) of DoorDash, Uber Eats, Postmates, and Grubhub.



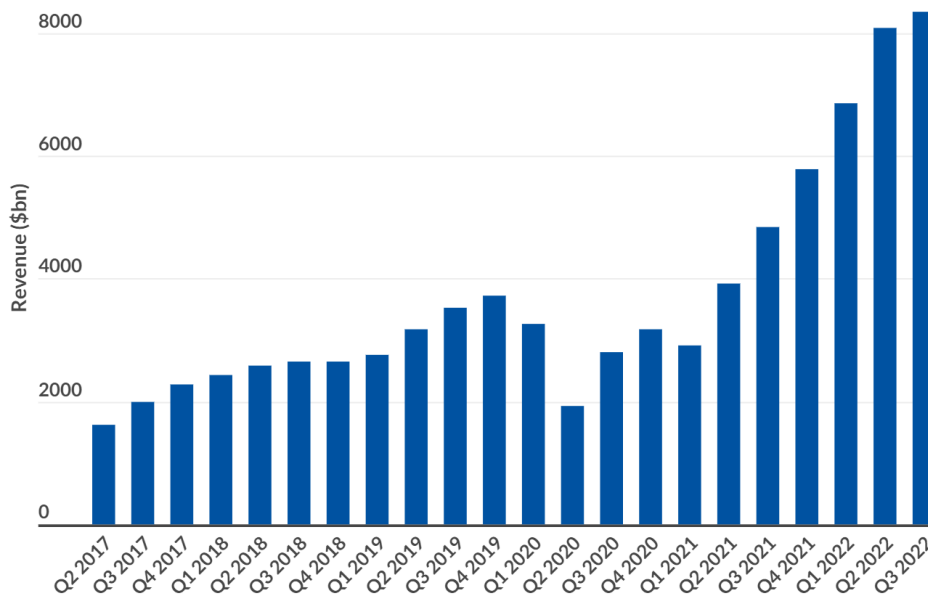
Retrieved from: <https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/ordering-in-the-rapid-evolution-of-food-delivery>

Exhibit 9: Map illustrating Uber's worldwide presence (as of January 2022).



Retrieved from: <https://worldpopulationreview.com/country-rankings/uber-countries>

Exhibit 10: Historic revenue development of Uber in billion \$.

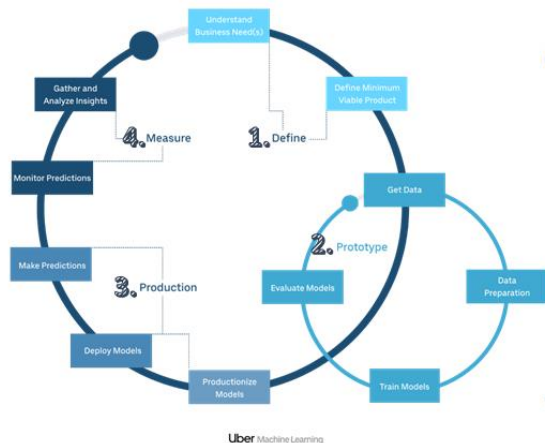


Source: Company data

Retrieved from: <https://www.businessofapps.com/data/uber-statistics/>

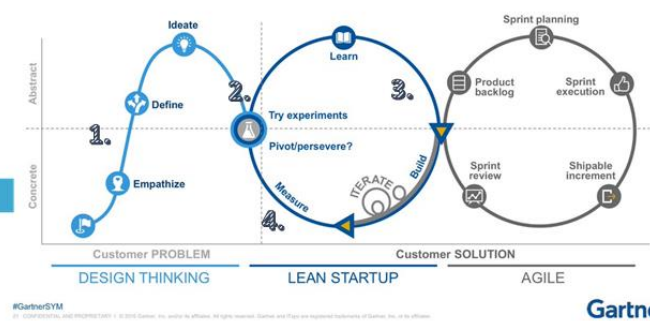
Exhibit 11: Comparison of Uber's machine learning workflow loop and methods of the recent startup paradigm.

Workflow of an Uber machine learning project



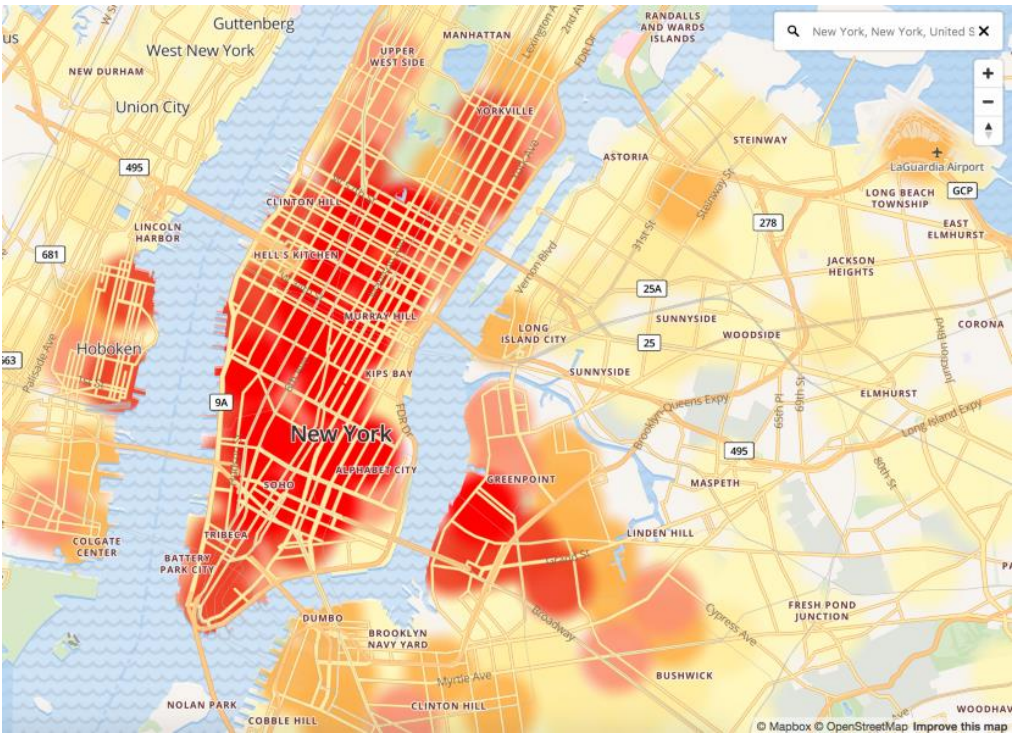
Design Thinking, Lean Startup, and Agile feedback loops

Combine Design Thinking, Lean Startup and Agile



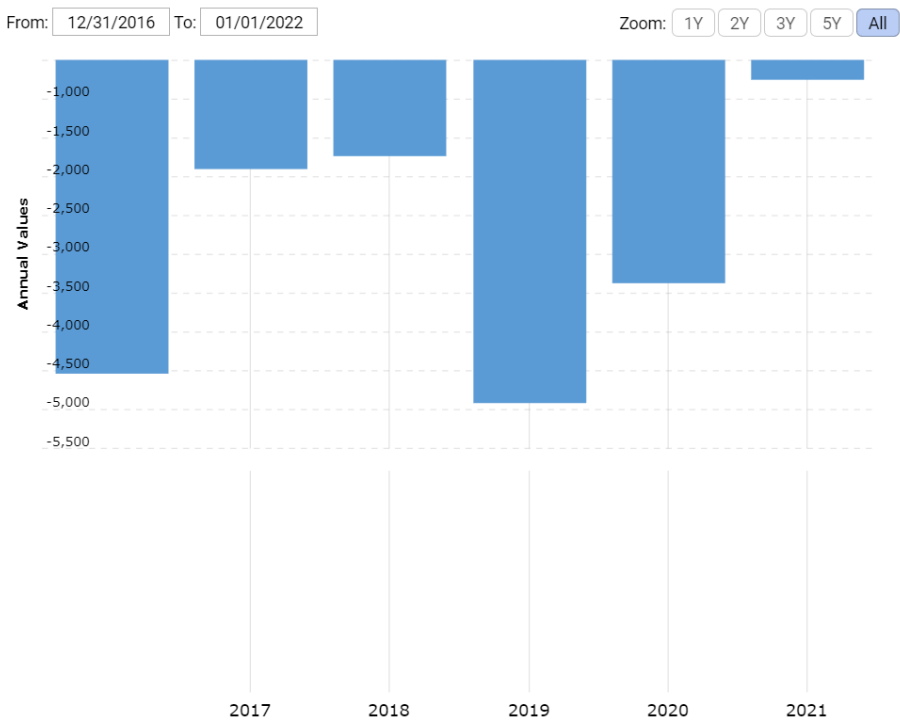
Retrieved from: <https://jagan-singhh.medium.com/data-science-at-uber-4380bf8f6aca>,
<https://www.gartner.com/en/documents/3941917>

Exhibit 12: User demand “heat map” for driver-partners of Uber.



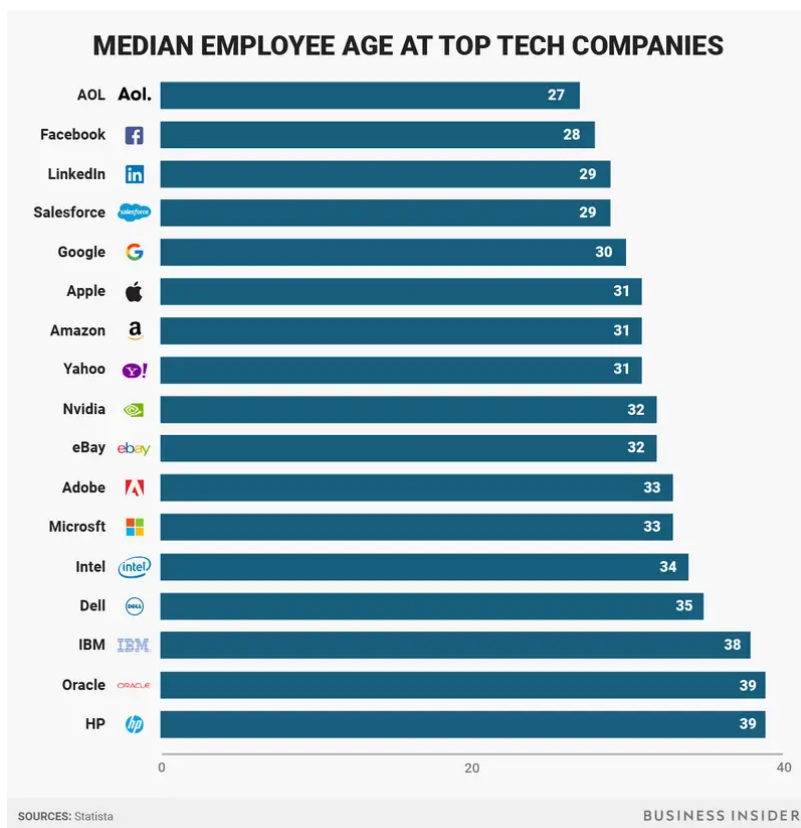
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Exhibit 13: Uber’s negative free cash flow (= cash burn rate) through the last years.



Retrieved from: <https://www.macrotrends.net/stocks/charts/UBER/uber-technologies/free-cash-flow>

Exhibit 14: Median employee age at top tech companies.



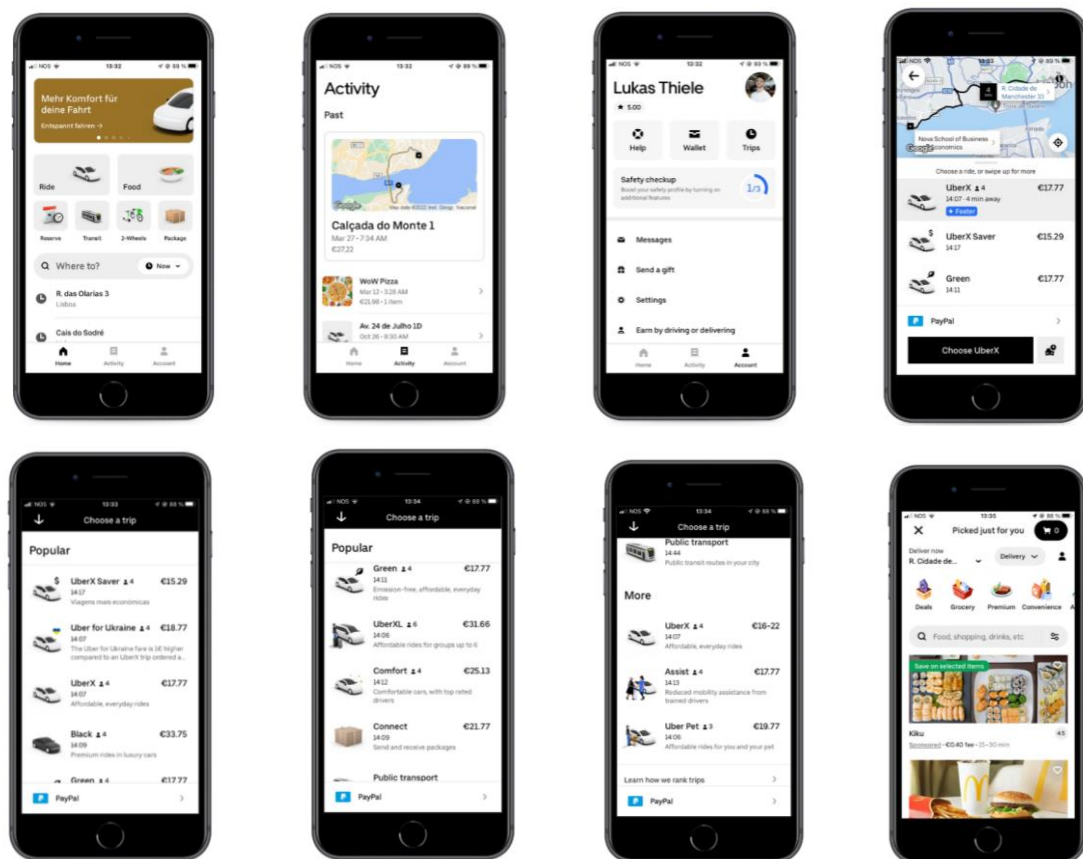
Retrieved from: <https://www.businessinsider.com/median-tech-employee-age-chart-2017-8>

Exhibit 15: Uber co-founder Travis Kalanick's tweet that led to the hire of a new Uber CEO.



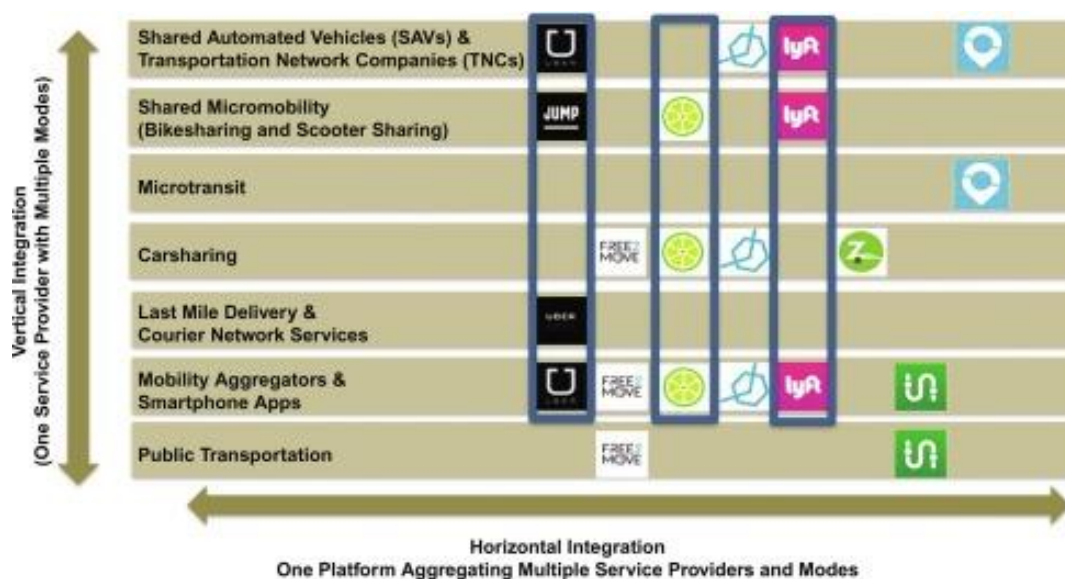
Retrieved from: <https://twitter.com/jonerlichman/status/1346487342144610306>

Exhibit 16: Interface of the Uber mobile app on iOS (as of 25th October 2022).



Source: Own screenshots (25.10.2022)

Exhibit 17: Example of horizontal and vertical integrations across 8 service providers in the shared-mobility industry.



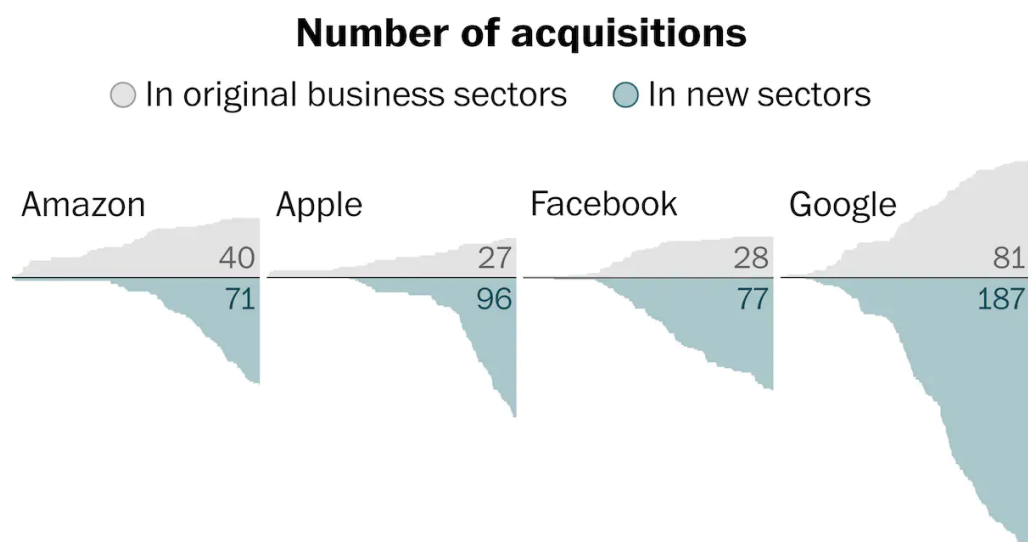
Retrieved from: <https://www.sciencedirect.com/topics/social-sciences/integration-strategy>

Exhibit 18: The cooperation between Uber and Lime symbolized on a scooter.



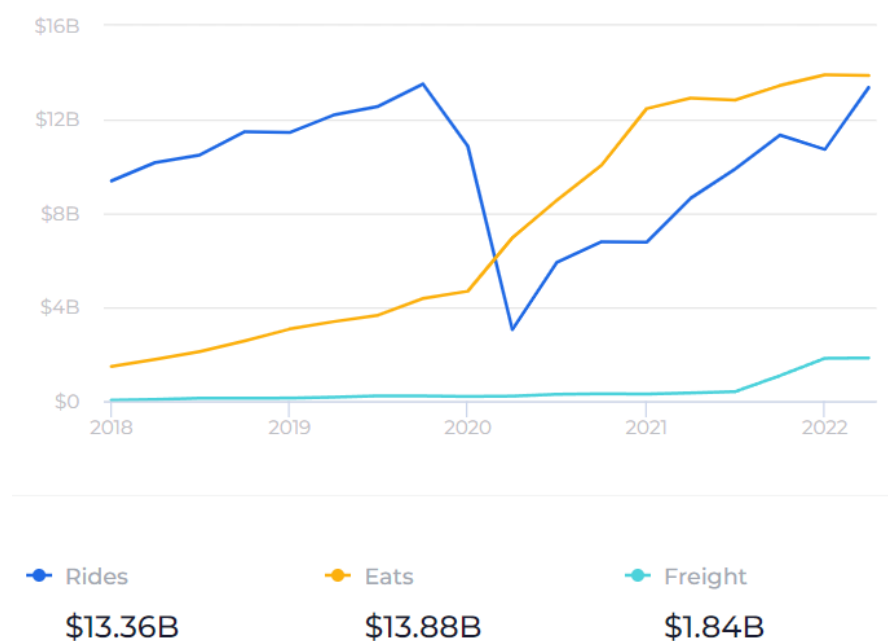
Source: Own photo (Lisbon, 22.11.2022)

Exhibit 19: The development of the numbers of acquisitions by the major 4 tech players over time.



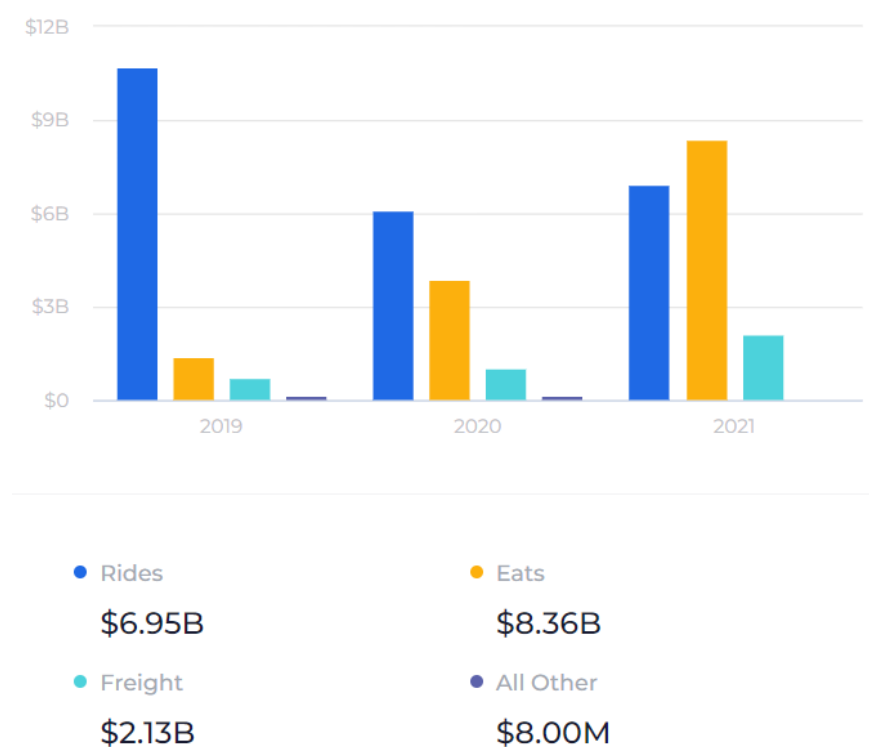
Retrieved from: <https://www.washingtonpost.com/technology/interactive/2021/amazon-apple-facebook-google-acquisitions/>

Exhibit 20: Uber's gross bookings divided by segment over time.



Retrieved from: <https://www.wallstreetzen.com/stocks/us/nyse/uber/statistics>

Exhibit 21: Uber's revenue divided by segments.



Retrieved from: <https://www.wallstreetzen.com/stocks/us/nyse/uber/statistics>

Exhibit 22: 6 Levels of driving automation created by the Society of Automotive Engineers (SAE) and adopted by the US Department of Transportation.



Retrieved from: <https://www.rambus.com/blogs/driving-automation-levels/>

Exhibit 23: VTOL aircraft as part of Uber’s Elevate initiative.



Retrieved from: <https://www.wired.com/story/uber-flying-cars-los-angeles/>

Exhibit 24: Startup Nuro’s driverless “R2” delivery robot for UberEATS.



Retrieved from: <https://techcrunch.com/2022/09/08/uber-turns-to-autonomous-vehicle-startup-nuro-for-eats-deliveries/>

Exhibit 25: Motional's autonomous vehicle based on an all-electric Hyundai IONIQ 5 for UberEATS.



Retrieved from: <https://www.businessinsider.com/uber-to-launch-driverless-delivery-pilot-program-in-2022-2021-12>

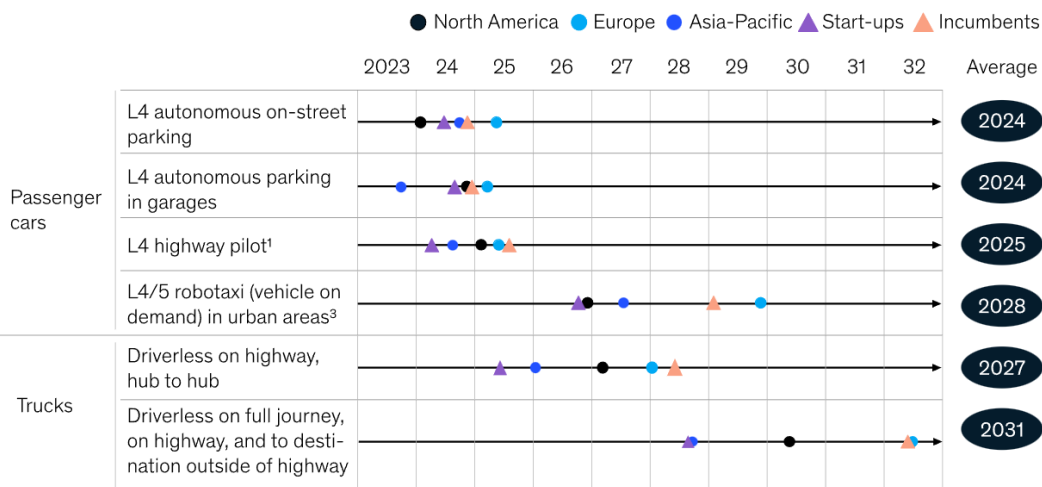
Exhibit 26: Serve's autonomous sidewalk robots delivering in LA with Uber Eats.



Retrieved from: <https://www.therobotreport.com/motional-serve-robotics-begin-autonomous-deliveries-with-uber-eats/>

Exhibit 27: Commercial rollout timeline for autonomous vehicles according to a McKinsey survey.

Most survey respondents expect L4 use cases to emerge by 2024 or 2025.



¹Driver can use the time on highways for work or leisure activities using in-car or own solutions but needs to take over at highway exits.
²Driver can use the time on highways in urban environments for work or leisure activities using in-car or own solutions but may require some driver intervention.
³Robotaxis drive everywhere fully automated with no driver and accept and conduct transportation requests (goods, passengers). Passenger can use the travel time for work or leisure activities.
Question: In your estimation, what is the rollout (ie, commercial availability of vehicles/service) timeline for autonomous driving across use cases in your region?
Source: 75 respondents (North America, n = 31; Europe, n = 33; Asia-Pacific, n = 11)

McKinsey
& Company

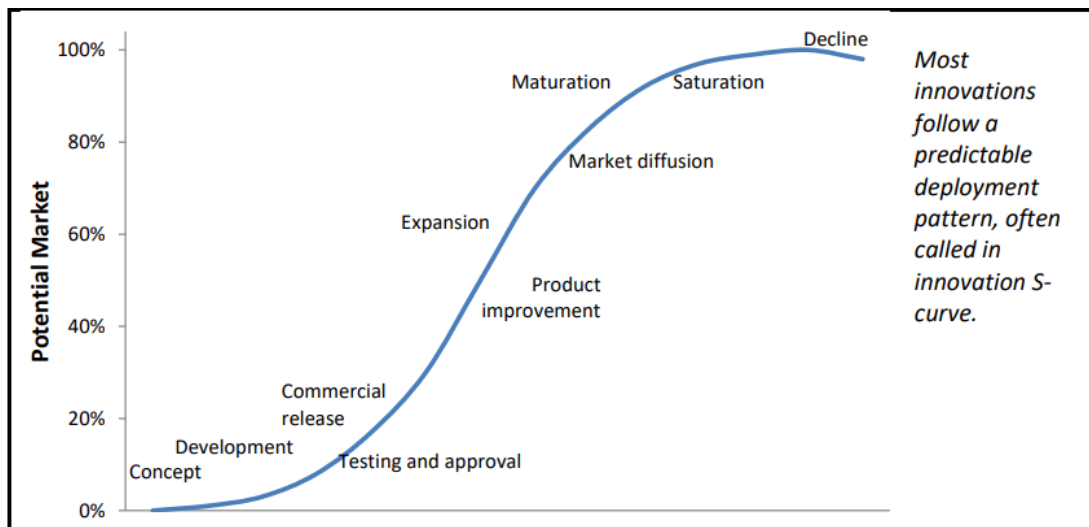
Retrieved from: <https://www.mckinsey.com/features/mckinsey-center-for-future-mobility/our-insights/whats-next-for-autonomous-vehicles>

Exhibit 28: The fleet of Uber’s self-driving car division ATG as of 2016 in Pittsburgh.



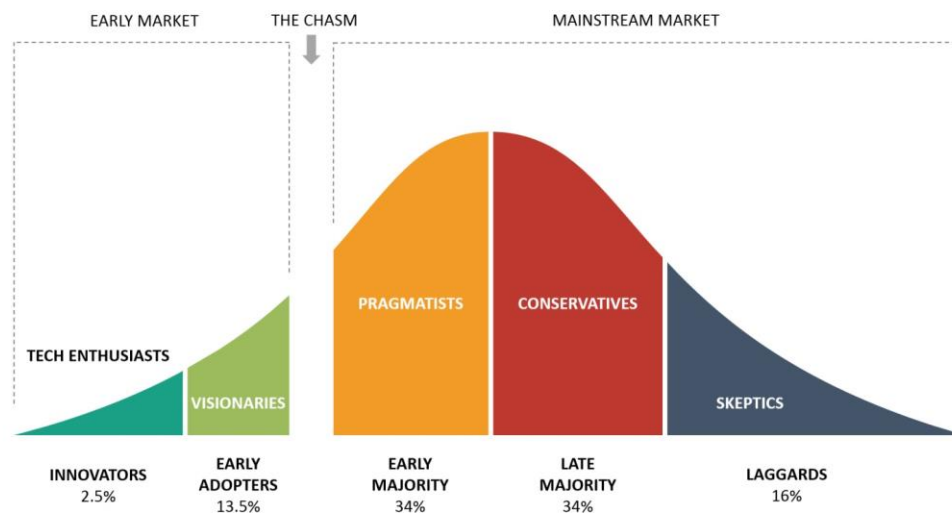
Source: <https://www.cnn.com/2020/01/28/ubers-self-driving-cars-are-a-key-to-its-path-to-profitability.html#:~:text=Uber%20plans%20to%20launch%20its,a%20clear%20path%20to%20profitability>

Exhibit 29: Innovation S-curve that show the typical adoption pattern of new technologies.



Retrieved from: <https://www.vtpi.org/avip.pdf>

Exhibit 30: The technology adoption lifecycle including the chasm between the early and the mainstream market.



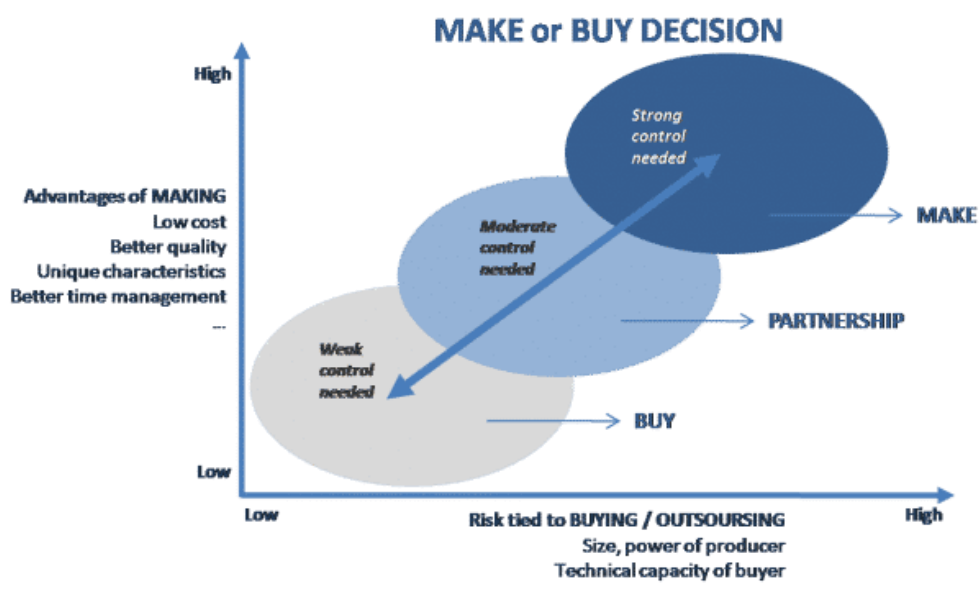
Retrieved from: <https://thinkinsights.net/strategy/crossing-the-chasm/>

Exhibit 31: Example of a choice-based conjoint (CBC) analysis for different types of ride hailing.

	Brand	Mode	Travel Time (for 20 mile ride)	Price	
			10 min	\$110	Select
			35 min	\$45	Select
			35 min	\$75	Select
		None of these			Select

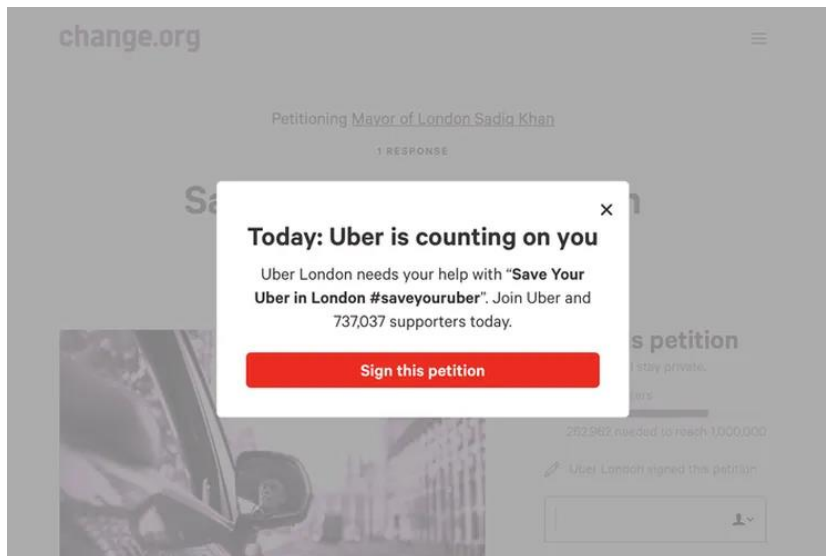
Retrieved from: <https://medium.com/@satish.chilakala/pricing-aerial-ridesharing-service-b1a5517239d8>

Exhibit 32: Reward-risk relationship in the “make or buy” decision.



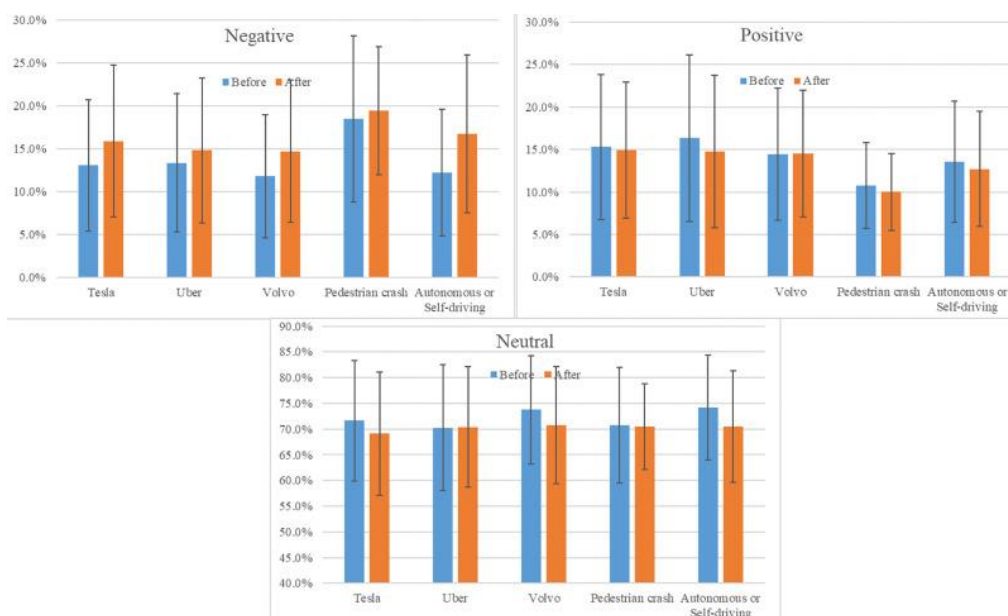
Retrieved from: <https://www.cleverism.com/make-or-buy-decision-step-by-step-guide/>

Exhibit 33: Uber calls upon and mobilizes users for support in 2017.



Retrieved from: <https://www.theverge.com/2017/9/25/16360002/uber-change-london-petition-one-million-signatures>

Exhibit 34: Average negative, positive, or neutral content of a twitter post related to 5 different buzz words before and after Uber’s autonomous vehicle killed a person on 18th March 2018.



Retrieved from: <https://www.sciencedirect.com/science/article/pii/S038611221000224#f0010>