

# Technology and Evolving Transportation

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## I. Introduction

Transportation has experienced considerable changes over the past decade, with the introduction of technology-based solutions. These solutions have come about to offer transportation services that are more efficient, safer, and easier to access for all. Traditional transportation services include buses, trains, commercial airlines, and taxis. Introducing technology to transportation has elevated the quality of service, led to faster delivery, improved transparency, and lower prices (Pepic, 2018). This makes it possible for people to travel further, in a shorter period of time and at a more effective cost.

One question that does arise is why was there a need for technology-based solutions in the transportation space? There are studies which were carried out, which revealed that congestion from transportation costs approximately \$160 billion a year. When it comes to time, there are 7 billion hours that are estimated spent simply sitting in traffic. Furthermore, 3 billion gallons of fuel are burned and released into the environment. Technology-based transport solutions look at more than just cost-cutting and convenience. They are in place to solve real-life problems (Conner-Simons, 2017).

These changes are also in line with the rise of the sharing economy, where sharing, such as in hospitality through Airbnb, is fast becoming the norm. Added levels of competition have resulted in an upsurge of technology-based solutions (Wallsten, 2015). This is interesting to experience as the taxi industry was traditionally very heavily regulated, whereas now it is more open and accessible.

The technology platforms that are making a big difference are on mobile devices or smartphones, specifically apps. This puts transportation solutions at the palm of your hand. One of the most popular transportation apps, Uber, started as a taxi-hailing app and has evolved to include other forms of transportation as well. It is now present in many countries around the world. By 2018, one could hail an Uber in more than 600 cities around the world (Lupick, 2018).

By opening up the world in this way, local communities have been able to expand, share their resources, and evolve the human experience. Local communities are now becoming global communities as they become more exposed, and people find their way around different places in the world.

## II. The Changing Times: Modes of Transportation that are Becoming Non-Relevant or Extinct

Getting to destinations faster is the premise for most people today. For this reason, there are some modes of transportation that are quickly losing relevancy with time. The most affected are the non-motorized methods of transportation, which are typically found in third world countries. These include pulling carts, rickshaws, and bicycles. In more advanced countries, it is possible to find bicycles being used as a primary mode of transportation, however, the type of bicycles being used is different. You will find that there are motorized, or solar powered bicycled that make it much easier to get around with less effort.

Two modes of transportation that have experienced a decline in usage over the last two years are trains and buses, particularly in the UK. It is estimated that a total of 10% of all travel is by rail, 5% by bus and a whopping 83% by private cars or taxis. The rest is split between air and bicycles. It is worth noting that private cars, in this case, could also be taxis, in that approximately 45,000 private cars within the UK have been registered to taxi-hailing companies such as Uber (Hunt, 2018).

The more traditional modes of transportation are being adversely affected by technology solutions, especially when it comes to cost. For them to be efficient, they rely on pre-planning and operating at full capacity. With changing consumer tastes, they are traveling with fewer customers making it hard to maintain profitability. More of the companies that offer these will close down, as it will not make sense to operate them at a loss over time.

### III. Rental Bikes and Scooters

Traffic challenges and laws have changed the way that people drive, particularly when it comes to large cities. This is why bike, scooter, and motorcycle services have started to thrive in recent years. Take Paris, the capital of France, as an example. This small city relies heavily on bike and scooter transport options as there are fewer cars on the road due to a lack of parking. However, commuters do not need to purchase bikes, as there are rental options available from a range of companies. These include companies like Lime, Bolt, Bird, Flash, Wind, Tier, Velia, Flash, and Hive. Scooter companies include City scoot and Coup (Dillet, 2019).

### IV. Uber Evolution

Uber is one transport company that has consistently evolved to meet market demand and cater to niche needs. This app came into place to offer a solution to the highly regulated taxi industry, which used decades-old technology to operate (Kreuger & Cramer, 2016).

The technology evolution helps the product, a transportation app, remain relevant within the market. Some of the factors that result in sustainability of the app include more efficient driver-passenger matching technology, inefficient taxi regulations, larger scale compared to the taxi companies and a unique flexible labor supply model (Kreuger & Cramer, 2016). In-line with specific market trends, travel solutions are offered. For example, it is possible to rent e-bikes and scooters through Jump by Uber.

This service makes it possible for customers to reserve bikes and scooters close to their locations. Using technology, one gains access to the bike by inputting their PIN or scanning a QR code. Once done, there are bike racks where bikes or scooters can be parked so that they are readily available for the next potential user. The bikes and scooters are electric, meaning that they are environmentally friendly, and more cost efficient to operate (Jump, 2019).

This is excellent when it comes to solutions for global warming and moving into creating a better future. As these transportation apps look to expanding their services, there is a distinct focus on making use of electronic vehicles and options. The plus, in addition to being better for the environment, is expected also to make the costs more manageable, ensuring that transport is accessible to all.

Uber also identifies unique gaps in the market to offer solutions. These include Wheelchair-accessible rides in certain areas. These are offered through WAV's (Wheelchair-accessible vehicles) where drivers have been certified by a third party for safe driving and assisting those who have disabilities (Uber, 2019).

Uber has continued to evolve, touching other industries such as health care and logistics through transportation. So now, you can find Uber Eats, Uber Freight, Uber for Business, Uber Elevate and Uber Health.

### V. The Efficiency of Ride Share Services

Taxis have traditionally been commercial in nature, offering transportation to individuals seeking to pay a premium for privacy when moving from one point to another. They also have the benefit of being convenient as the customer can be picked up without the need to walk to a transport bay. Customers were at the mercy of taxi companies, their rates, and their timelines.

To create more efficiency, it is now possible for private vehicles to provide taxi-like transportation services, particularly in large cities. This brought the costs of transportation down considerably. Now, customers can share their rides, adding more cost-effectiveness (Chaudhry & Shakshuki, 2018). By sharing their rides, the total number of cars that are on the roads reduces, which also brings down the emissions. Furthermore, with less cars on the road, traffic also comes down which means people can get around much faster.

### VI. Discount Flights (Private Services)

Mobile apps are not tapping into plane travel, something which may have seemed impossible years ago. Plane travel has also evolved over the years, with the introduction of low-cost airlines where one can travel without needing to pay for the fringe benefits. However, airline bookings often need to be done in advance to benefit from price reductions or bonuses. This also means that the customers are at the mercy of the official flight schedule and missing a flight could mean waiting for hours for the next one to be available and hoping that it would not be full.

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In the next five years, there are plans underway to have plan ridesharing services, similar to those that we have with taxi cabs. The plan is to have shared air transportation between cities as well as suburbs, through a fleet of small electric vertical take-off and landing aircraft. Uber Elevate shall fill in this space.

### VII. The Ride Sharing Battle

Transport moving forward may seem incredibly convenient and positive; however, there are some who are against this progression. A study was carried out between 828,616 riders who took 6.3 million Lyft trips in Los Angeles which revealed that there are race biases experienced when it comes to ride sharing applications. The blacks who asked for rides had higher incidences of the rides being canceled or dropped when they were seen. This could bring in a rise in dissatisfaction in an already sensitive climate (Marshall, 2018).

There are some places that have tried to ban ridesharing services in the past, such as the state of Virginia. The issue that arose in this state was a lack of regulation and proper permits, meaning that drivers needed to pay large fees and get expensive insurance. The government authorization created a challenge for both part-time and full-time drivers(Eshelman, 2014).

British Columbia was another area that was little enthusiasm for ride sharing applications. The core reason was the cost regulation, particularly the surge pricing when demand is high. To compete effectively, it was proposed that there should a taxi hailing app created that brings together all the existing taxi companies to offer effective competition with Uber and similar apps(Lupick, 2018)

### VIII. The Future

The next decade is possibly going to move in one key direction, and that is more technological advancement within the transportation sector. Technology is helping to make transportation cheaper so that people from all over the world can travel more and access more travel options. This will have a positive effect on globalisation and development of different areas all around the world.

One key factor that needs to be expounded is the cost factor. The introduction of Uber changed taxi hailing services, especially when it came down to cost. This is because as a service, private individuals could offer Uber rides in their spare time, rather than taking taxi driving as a full-time job. The convenience and demand helped to regulate the prices making them better for the consumer and encouraging more use of the application.

There should also be acceptance of more advanced solutions, such as those looking to improve air travel. It is expected that within the next decade, all customers will be in control of travel, and able to move around with ease wherever they wish to.

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