# Shared Urban Mobility as a Part of Shared Economy

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***Abstract***. *The purpose of the paper is to provide a global overview of the sharing economy and shared mobility, while the aim of the paper is to analyse the relevant literature in the field of shared mobility and to determine key domains shared mobility services. The sharing economy encourages joint use of resources, which changes traditional economic paradigms. Focused on values essential to life, it empowers mindful and financially constrained consumers. Car sharing in Europe demonstrates reduced user kilometres, while bike sharing globally grows rapidly. The sector's evolution signifies a fundamental shift in resource allocation, reducing reliance on privately-owned vehicles and enhancing overall sustainability. With over 10,000 companies operating, shared mobility is a pivotal force transforming urban transportation paradigms, projecting a 12.2% Compound Annual Growth Rate (CAGR) and a 32% revenue share for Europe.*

***Keywords.*** *Shared economy, shared mobility, transportation, urban mobility*

## 1 Introduction

Urban mobility is an essential element of modern city life, with a function that has never been more significant in shaping the design of cities and the overall standard of life. A revolutionary idea in the world of urban transportation is shared mobility, which is the cooperative use of a variety of vehicles, such as automobiles, bicycles, electric scooters, and more. essentially this idea supports shared ownership, accessibility, and environmental, economic, and sustainable practices. It also places specific emphasis on reducing transportation congestion, particularly in highly populated urban areas. Integrated within the broader concept of "transportation between individuals," shared mobility is a crucial part of the shared economy. With a significant effect, the shared economy gives consumers the ability to manage their time, money, resources, and experiences in general with skill. Driven by the growth of technology, the shared economy and its transportation-related industries have seen exponential increases in their worth and importance. The emergence of the sharing economy and the current technological revolution have made it possible to use transportation resources more effectively, which has helped to solve the problem of sustainable mobility in metropolitan areas. Using platforms for carpooling, bike sharing, vehicle sharing, and the increasingly common e-scooter sharing has today become incredibly easy. The integration of technology and shared mobility principles not only improves accessibility but also makes a substantial contribution towards solving the complex problem of sustainable urban transportation.

## 2 Shared Economy

The sharing economy is acknowledged as a transformative socio-economic system that poses a significant challenge to conventional economic paradigms, primarily centered around hyper-consumption and individual ownership (Miguel et al., 2022a). It serves as an alternative economic sector founded on values integral to the fundamental aspects of life. This conceptual framework empowers considerate and financially constrained consumers to efficiently manage their time, resources, finances, and experiences. Through mechanisms like exchange, gifting, trading, and lending, the sharing economy offers an avenue to mitigate resource loss and waste, a critical need in the contemporary world (Vidan, 2023).

The sharing economy encompasses over 10,000 companies, and the revenue potential of this sector is anticipated to rise to $335 billion by 2025 (Miguel et al., 2022b).

A report commissioned by the European Commission categorizes the principal activities of the sharing economy into five distinct sectors (Vidan, 2023):

- accommodation between individuals
- transportation between individuals
- on-demand household services
- on-demand professional services
- collaborative financial services

The sector of transportation between individuals encompasses mutual transportation services, vehicle rental, and parking. Digital platforms in this domain facilitate both short and long-distance transport services, serving as mediums for sharing vehicles among individuals, companies, and consumers. Two overarching categories of platforms exist within this sector. The first category facilitates the rental of assets like cars, motorbikes, and bicycles, with examples such as ZipCar, EasyCar, car2go, Avant2Go, ShareNow, and stadtmobil. The second category assists users in renting assets along with associated labor and human capital, with examples including BlaBlaCar, Sidecar, Uber, and Lyft (Petropoulos, 2017).

As per Market.us projections, the Shared Mobility Market is anticipated to exceed approximately USD 817.4 billion by 2032, with an expected Compound Annual Growth Rate (CAGR) of 12.2% from 2023 to 2032, as shown in Figure 1.

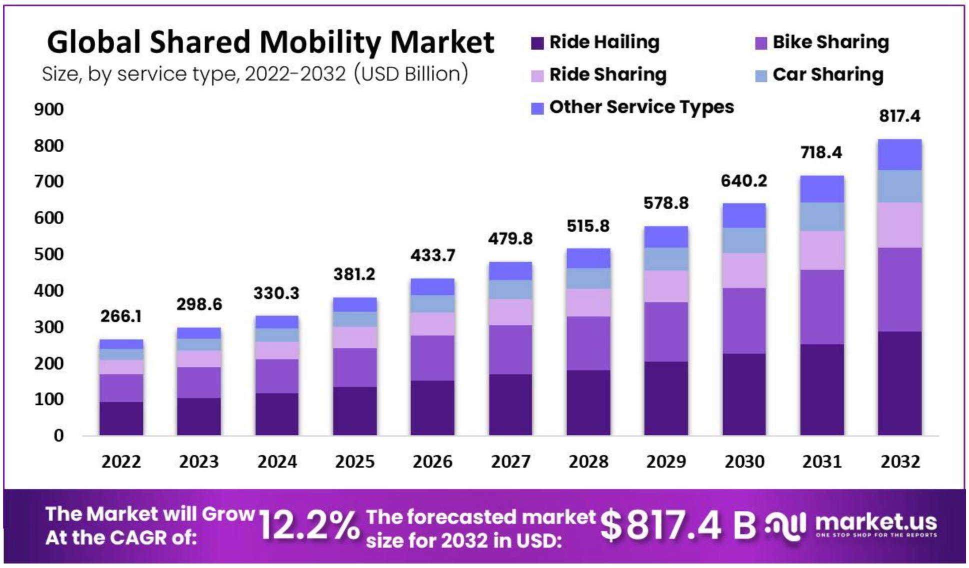


**Figure 1** Expected market grow for shared mobility (Source: Market.us (2023))

## 3 Shared Urban Mobility

Shared mobility can be defined as the shared use of a vehicle, bicycle, or other means that allows users to have short-term access to modes of transport on demand (Bonaldo, 2021). It can be also described as a strategy that encourages the joint use of different types of transport for the purpose of sustainable travel.

Those transport options are (Shaheen et al., 2017):

- carsharing

- shared micromobility
- bike-sharing
  - e-scooter sharing
  - carpooling
- on-demand ride services
  - taxi
  - ridehailing
- ridesharing
- courier network services.

Figure 2 categorizes the fundamental facets of shared mobility according to the type of service rendered. Shared vehicle usage is facilitated by services falling under carsharing, scooter sharing, and bikesharing. Shared passenger journeys are supported through ridesharing, on-demand ride services, and micro transit. Utilization of private vehicles for delivery trips is made possible by courier network services. Each of these categories is further subdivided into distinct models. Carsharing comprises three business models: roundtrip, one-way, and personal vehicle sharing. Personal vehicle sharing (P2P) is further classified into four types: P2P Carsharing, Hybrid P2P Traditional Carsharing, P2P Marketplace, and Fractional Ownership. The business models for Bikesharing include Public Bikesharing, Closed Campus Bikesharing, and P2P Bikesharing. Ridesharing is divided into Carpooling and Vanpooling. On-Demand Ride Services encompass Ridesourcing, Ridesplitting, and E-Hail. Microtransit is categorized into Fixed Routes and Fixed Scheduling, as well as Flexible Routes and Flexible Scheduling. Finally, Courier Network Services are segmented into P2P Delivery Services and Paired On-Demand Passenger Ride and Courier Services.

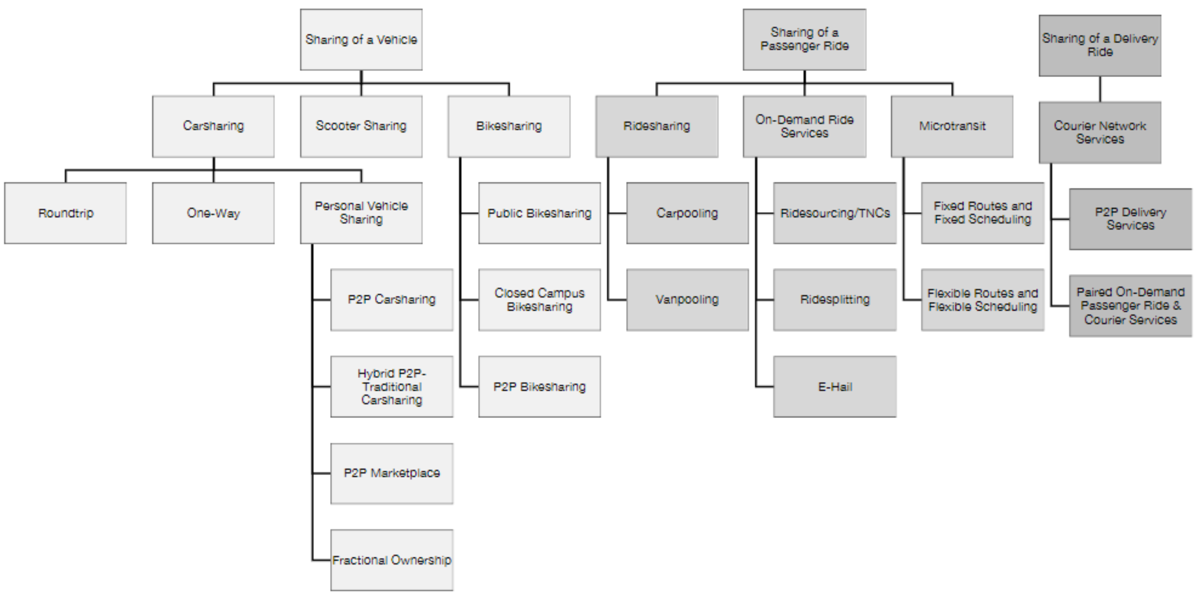


**Figure 2** Key domains in shared mobility (Source: Shaheen et al., 2017)

Carsharing in Europe reduces user kilometers traveled by 28-45%, with a 45% reduction in Paris and 30.6% in London. Studies show variations in travel behavior, with carsharing users in the Netherlands either decreasing annual driving distances by 1750 km or increasing them by 1850 km depending on how people change their travel behavior. Although the environmental benefits are not the main reason to use carsharing services, it is seen as a by-product of using it. Some studies point out that on carsharing in Europe the average CO2 of the carsharing user were reduced by 39 to 54% (Bonaldo, 2021).

Bike-sharing has emerged as one of the fastest-growing transportation innovations in many global cities. As of April 2016, there were 1,019 cities with information technology (IT)-based public bike sharing systems in the world comprised of 1,324,530 bikes, the majority of which were in China. The U.S. had 75 programs spread over 99 cities, with approximately 32,000 bikes and 3,400 stations ().

The quantity of shared e-scooters in Europe experienced a growth of over 100% from 2021 to 2022, surging from 285,000 to 700,560 units by the conclusion of 2022. According to MMfE's report, the volume of e-scooter journeys on the continent witnessed a remarkable 17-fold increase, soaring from 14 million in 2021 to surpass 240 million in 2022 (Pinheiro, 2023).

Table 1 displays the present market valuation in 2022 and the anticipated market size in 2032 for Shared Mobility. The projection suggests that Shared Mobility is poised to more than double during this period, with an expected Compound Annual Growth Rate (CAGR) of 12.2%. Notably, Europe is anticipated to contribute significantly with a revenue share of 32%.

**Table 1**. Europe's market as a part of global shared mobility (Source: Market.us (2023))

| **Report Attributes** | **Details** |
|---|---|
| Market Value (2022) | *$266.1 Billion* |
| Market Size in 2032 | *$817.4 Billion* |
| CAGR (2023 to 2032) | *12.2%* |
| Europe Revenue Share | *32%* |

*CAGR – Compound Annual Growth Rate

## 4 Conclusion

The sharing economy stands as a practical response to multifaceted challenges, particularly within the domain of urban transportation. It underscores the collaborative use of resources, moving away from ownership-centric models and facilitating efficient time and resource management. In the realm of mobility, the sharing economy is poised to bring about a fundamental shift in resource allocation, reduce reliance on privately-owned vehicles, and enhance overall sustainability. The current landscape encompasses a multitude of entities, surpassing 10,000 companies, with an anticipated sectoral revenue nearing $335 billion by 2025, highlighting its significant economic impact. The European Commission's categorical taxonomy identifies five primary sectors within the sharing economy. Foremost among them is the realm of shared accommodations, exemplified by platforms like Airbnb. Simultaneously, the burgeoning sector of transportation between individuals includes dynamic services such as carsharing, bike sharing, carpooling, and the emergent e-scooter sharing model. Projections indicate that the Shared Mobility market is on a trajectory to reach approximately $817 billion by 2032. Notably, the market valuation in 2022 amounted to $266 billion, reflective of an impressive surge nearing 300% over a decade. The anticipated Compound Annual Growth Rate (CAGR) stands at 12.2%, with Europe commanding a substantial market revenue share of 32%. This underscores the empirically grounded evolution of shared mobility, positioning it as a pivotal force in transforming urban transportation paradigms.

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