

Mobility Data Analytics



Data as the key to the future

From Insights to Impact

As a defining feature of modern life, connectivity can significantly improve many aspects of mobility and transportation. This applies particularly to new settings like Mobility as a Service (MaaS): With passengers demanding easy access to convenient and fast transportation from A to B using a combination of available modes – be it a bus, a train, a ferry, a shared bike or one’s own feet – it is essential to keep a close eye on operational efficiency and service quality. While suitable data is increasingly available to address this challenge, the potential of data analytics remains largely untapped. However, it represents a rich source of information that can be utilized to enhance the passenger experience and drive operational excellence in the digital era.

From Big Data to Smart Data

Mobility apps and their users are an essential source of data. A mobility app, designed according to operators’ specific visuals and requirements, is the starting point for data insights. Each transaction made in a mobility app creates data, such as a HAFAS-based trip planner. Using this as a basis, data analytics is capable of understanding and determining patterns of mobility demand and their impact on the transportation network. These patterns can be used to make predictions on future passenger flows. Consequently, data analytics not only offers insights into current activity at particular locations, but also major commercial impact based on predictions on future mobility.

As data protection is a sensitive issue, it is important to mention that many insights and results can already be gained by analyzing usage statistics. This can be done without collecting any person-specific data. Nevertheless, it remains true that more data leads to more insights and greater potential for improvement: travelers’ willingness to share additional data can thus be rewarded with value adding services, such as more personalized and proactive information.

In addition to passenger apps, other sources like vehicle weight and occupancy, gate signals, road traffic information and weather data can be taken into consideration to gain further insights.

Mobility data analytics open the treasure chest to create added value – for both travelers and operators



Mobility data analytics answer operators' and cities' most important questions, e.g.:

- **Incident detection in real time:** What is the impact of current incidents on the transportation network? How many travelers are affected and what mitigation measures are expected to be most effective?
- **Event management:** Where do most visitors come from to see e.g. a soccer game or concert? Are there any bottlenecks to be expected? Could a "fan bus" be of any help? On which routes should it be deployed?
- **Interconnections:** What are the most important transfer points? Which changes would enhance the service for the majority of travelers?
- **Demand-Responsive Transport (DRT):** In which areas is mobility demand not addressed effectively? Which areas are suitable for the operation of a DRT service?
- **Ticketing:** What is the impact of marketing on ticket sales?
- **Rail replacement services:** How many passengers have the same origin-destination combination? What is the capacity and direction of a replacement bus service in case of rail disruptions?
- **Demand-Responsive Operation:** What passenger numbers have to be considered for an effective management of trains (e.g. headway) and stations (e.g. escalators)?
- **KPIs:** How do the most significant performance indicators (KPIs) change over time? How do certain measures (e.g. new bus line, change of schedules) affect these KPIs?

Data analytics can provide the answers and thus have a true impact on both mobility strategy and planning as well as real-time operations.



www.siemens.com/simobility
simobility.mobility@siemens.com
+49 174 1525037



www.hacon.de
info@hacon.de
+49 511 33699 0



www.eos-uptrade.com
info@eos-uptrade.com
+49 40 808070 0



www.bytemark.co
sales@bytemark.co
+44 797 314 5472

Together, Siemens Mobility, HaCon, eos.uptrade and Bytemark provide a unique and holistic ecosystem of digital services and solutions. From trip planning across passenger communication to mobile ticketing, payment and comprehensive Mobility as a Service (MaaS) solutions, fleet management to train planning systems and mobility data analytics, we share one common goal: enhancing the passenger experience – with our combined power for mobility.