

Problem Statement No.: 24-991

Impact of Mobility-as-a-Service (MaaS) at Airports

Recommended Allocation: \$400,000

Tags: Operations, Policy, Finance-Economics, Information-Technology, Landside

Staff Comments: No comments.

Average Airport Employee Review Rating (out of 5): 3.20

ACRP Oversight Committee (AOC) Disposition: This problem statement received an average rating of 2.08 on a scale of 1 to 5 among voting AOC members. There was no discussion. Not funded.

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Topic Areas

Operations
Policy
Finance-Economics
Information-Technology
Landside

Background

Mobility-as-a-Service (MaaS) can be defined as a type of service based on digital applications that enables users to plan, book, and pay for different mobility offers and combinations of services. Such service could be enabled by combining transportation offers from both public and private mobility providers through unified digital portals performing journey planning, comparing available offers based on customized criteria (e.g., time, cost, comfort, accessibility, waiting times, GHG emissions, number of connections, safety awareness, etc.) which users can pay for with a single account at once. MaaS could have significant impact on airport ground access, including but not limited to: - Increased efficiency & utilization of mass transit; - Decreased cost of trips for users; - Enhanced access to mobility; - Offers integration to emerging technologies; - Encourages user experience supportive to safety operations; - Promotion of greener options. Under the 2016 FTA "Mobility on Demand Sandbox Program" in 2016, demonstrations were conducted in different parts of the country e.g., Palo Alto, California's "Adaptive Mobility with Reliability and Efficiency" (AMORE) and the Puget Sound First/Last Mile Partnership. Since 2020, FTA's Integrated Mobility Innovation program is supporting further demonstration projects and effective implementation across the United States. Southern Nevada, Central Ohio, Tri-County Metropolitan District (OR), and other public transportation providers have developed integrated mobility apps with MaaS features. The rise of connected and automated vehicles (CAVs) enabling a new era of personal on-demand mobility, as well as the emergence of urban air mobility (UAM) that could leverage MaaS to compete with TNCs but also combine its offer with theirs to provide first and last mile from/to vertiports, which could accelerate the implementation of MaaS platforms. The creation of MaaS platforms could have impact similar, in their aspects and amplitude, to the advent of transportation network companies (TNCs). Indeed, MaaS could reshape how passengers and airport employees elect to commute to the airport, and tremendously change modal choice, especially where several options "including mass transit" is available. Furthermore, this approach could increase the connectivity and accessibility of smaller airports by combining offers from different providers, both public and private (e.g., MaaS fosters intermodal trips).

Objective

The research project should develop a guidebook providing the following: - Description of the MaaS concept and potential implementation timeline. - Discussion on how MaaS may change the landside/ground access stakeholder ecosystem, and what would be the role of MaaS platforms regarding the ecosystem. - Evaluation of the potential impacts of MaaS on airport ground access in terms of market size and potential shift in modal choice to advance emerging technology for user

experience to serve as a guide in system integration. - Assessment of economic and financial impacts of MaaS implementation for airports. - Guidance on how to anticipate and plan for these changes.

Research Approach

N/A

Cost Estimate and Backup

\$400,000. This estimate was developed based on a benchmark of CRP projects with scopes of similar size.

Related Research

ACRP Project 10-33: Incorporating Emerging Transportation and Ground Access Technologies at Airports (ongoing). This project focuses on emerging modes and technologies. While it discusses MaaS as part of a broader mode integration conversation, its scope does not include a "deep-dive" into MaaS and its economic and financial implications for airports. Other publications and industry research efforts: - US FTA Integrated Mobility Innovation. portal: <https://www.transit.dot.gov/IMI> - ACRP Research Report 243: Urban Air Mobility: An Airport Perspective - Le Bris, G. et al. The Future of Airports: A Vision of 2040 and 2070. ENAC Alumni, April 2020.

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Airport Employee Comments

Opportunity for multi modal gains.
Looking at the customer experience, there is a disconnect between where the airline's responsibilities begin and end on the customer journey. Having a standard within airports to provide this MaaS would help make the airports far more efficient and accessible.
I don't feel that MaaS has matured enough as a transportation mode to meaningfully inform airport operations and/or development at this point.
There are fundamental misunderstandings and mischaracterizations of the concept of MaaS. We have had such "technology" for decades in the form of taxicabs.
Addresses a gap in the need for using ground transportation to promote airport sustainability. Examples mentioned demonstrate the availability of data. Can be immediately applied.

TRB Committee Comments

AV050	AIRPORT TERMINALS AND GROUND ACCESS (AV050): The proposed research overlaps with work being performed under ACRP 10-33 and other on-going projects jointly sponsored by ACRP and TCRP. Any information about the impact of MaaS on airport landside/ground access is speculative at this point because it is not possible to ascertain stakeholder ecosystem, market size, or modal shifts.
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