Afgestudeerd

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Project: A user-centered design concept and vision on
                         Schiphol's seamless connection to the Netherlands
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COGNITIEF

Introduction

Although the core business of an airport is its air-side activities, it could not function without fluent, multi-modal and resilient land-side connectivity with its surroundings. The AirportCity of Amsterdam Airport Schiphol (AAS) is located in a dense urban area and therefore the most important land-side transport interchange of the Netherlands. Due to the growth of air travellers on a global scale (6.3% in 2016, IATA), it has been decided Schiphol will expand their terminal by building an extra A-pier and Terminal. This allows for a 30% growth expected in the number of passengers from 2023. However, the land transport modalities nearly reach their limits and the capacity has to grow along the aviation capacity in the future.

Method

With this graduation project, the land-side connectivity of AAS is approached by Design Thinking method to take a passenger's needs and wishes as a guiding principle for the 2025 vision, design concept and following the functional requirements for the transport hub tender. The user-centered approach is complementary to Schiphol's business perspective and their ambition to become Europe's preferred airport. The land-side transportation capacity has to grow along the aviation growth ambition on air-side from 2023, so, for this reason, it is time to take action and be prepared for 2025. The consequences of disruptions are hardly manageable when they cannot be absorbed by the (by then overloaded) alternatives.

Result: 2025 vision

In my 2025 vision, an underground land-side transport hub with trains, buses and a shuttle train is located in a large welcoming AirportCity hall (figure 1). The design of the transport hub is based on the following aspects, which were found to be important for a pleasant passenger experience: short walking distances, natural wayfinding, separating different passenger flows and the identity of Schiphol as AirportCity. During field research, it was found that the arriving passengers' experience was neglected compared to the departing passenger. Therefore, the needs and wishes of meeters and arriving passengers, the second largest choice for transport (Schiphol annual report, 2016), were defined as a focus area. The first group of dominant practically motivated meeters and arriving passengers is located on the two North and South remote hubs connected with a high-frequency shuttle train. Facilities for the dominant emotionally motivated meeters and passengers are located in the AirportCity hall: here, the meeters can wait close to the arriving passengers.

Design concept

To make time management for the meeter more predictable, the arrival process is visually presented on the interactive flight track floorplan in the AirportCity hall (figure 2). With a real-time service via his mobile device, he receives personal information updates about his passenger. This empowers meeters to manage their time and spend it at the commercial facilities. The entertainment of the interactive waiting environment
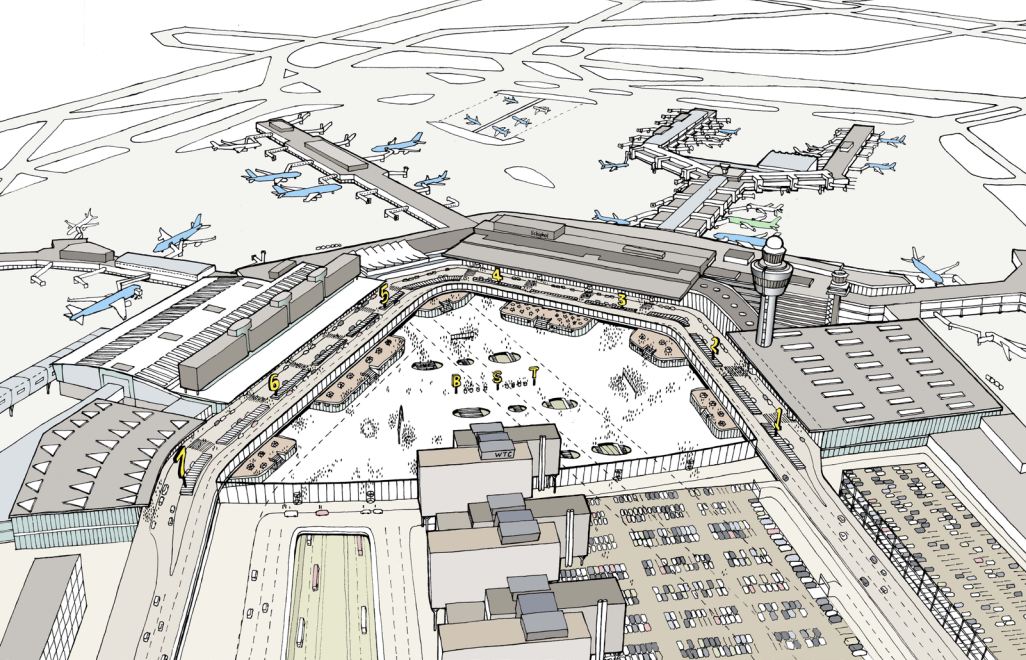
Figure 1. Underground land-side transport hub. The following innovations were indicated as being valuable for improving the landside access and included in the 2025 vision: Luggage travel services to travel hands-free. Biometric technology to make the border control a seamless process. High-quality Wi-Fi on board: the passenger is always connected to real-time information. Autonomous cars cause new transport behaviour.

emphasizes the 'Schiphol experience'. To balance the mood between the meeter (excited) and the passenger (devoted to the air lines schedule), the passenger receives a welcoming 'wake-up' message during landing. A digital guide helps to continue the journey and find the meeter in the AirportCity hall. After meeting, the meeter and passenger can stay for a drink in the lively 'arena' of the AirportCity hall.

Following the peak-end rule from psychology science, the highlight and the last part of an experience is what people remember of the total activity (Kahneman et al., 1993). Therefore, the land-side connectivity as the last Schiphol impression of the arriving passengers' journey should get extra attention.

Conclusion

Making the land-side transport hub seamlessly connected to the Netherlands, as a last step of the Schiphol journey, may have a significant positive impact on the passengers' experience and create more satisfied end-users of Schiphol. The 2025 vision serves as inspiration towards the future land-side expansion plans and therefore helps to create an environment that fits the passengers' needs and wishes at Schiphol.

Reflection

The intersection between service design and how the built environment can facilitate the process is a tight collaboration in the aviation industry. Schiphol's limited space for expansion, in the middle of the dense urban area in the Netherlands, creates a complex design brief with many different stakeholders involved. However, during the iterative process with many mobility and aviation experts, new insights appeared when the main focus was to develop a user-centered transport intersection. I hope to be able to repeat this 'Design Thinking' process for many more complex urban areas towards the unknown future of smart cities and aim for seamless mobility systems.

References

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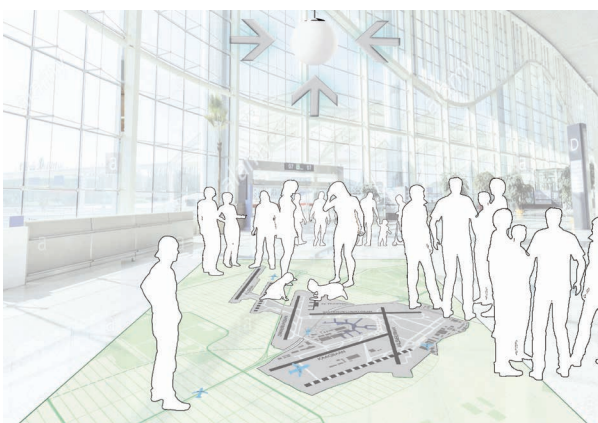
Figure 2. The interactive meeting point in the AirportCity hall and digital service for dominant emotional meeters and arriving passengers at Schiphol airport.