

# The role of Mobility-as-a-Service in the modern office environment





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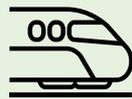
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# Summary

Mobility is critically important for the way we work. a.s.r. real estate was aware of this early on, and chose for the ASR Dutch Mobility Office Fund to focus primarily on offices within walking distance of an Intercity station in the G5. In this article we first analyse the importance of mobility in the trends that shape the way we work. Subsequently, we investigate how Mobility-as-a-Service (MaaS) solutions could be of value to offices, concluding that a large MaaS supply is associated with a better performance of an office area. We conclude with a case study of how the ASR Dutch Mobility Office Fund adds MaaS solutions where possible in offices owned by the Fund, such as within Wonderwoods, Utrecht.

## The key take-aways of this article



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Multimodal transportation makes up 15% of the total distance travelled in the Netherlands. The next generation workforce values having access to mobility office hubs, prioritises tech-savvy mobility solutions such as Mobility-as-a-Service (MaaS), and prefers public transport over car ownership. The further adoption of working from home will create additional demand for flexible MaaS solutions, often available near mobility hubs.



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The three core concepts of MaaS cover 1. Public transport, 2. Shared mobility, and 3. A platform (often in the form of a mobile application). The most well-known example of MaaS in the Netherlands is the NS Business Card, which can be used for the train and other forms of public transport (metro, bus, tram, etc.), as well as allowing users to rent NS bikes and shared cars (Greenwheels).



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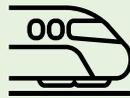
Our research has found a positive relation between a higher MaaS supply and improved real estate indicators for office areas. The top 20 MaaS enabled office areas show a twice as fast absorption rate of office stock than the national average. This leads to a lower vacancy rate: 9% in the top 20 MaaS enabled office areas versus 12% nationally. Average office rents are also higher in the top 20 MaaS enabled office areas than the national average.



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For Wonderwoods in Utrecht, a mobility plan aimed at maximising sustainable mobility was drafted. The plan has two main aims: 1. Minimising car usage and therefore reducing the need for parking places, and 2. Increasing shared mobility. To this end the mobility plan of Wonderwoods makes use of Parking as a Service (PaaS), a Mobility director and Shared mobility via an app.

# 1 The importance of mobility in the trends that shape the way we work



## Mobility

The pandemic has shifted **mobility patterns**, namely due to increases in both remote working and online meetings. Although train usage underwent the largest decrease, researchers now predict that train travel will exceed 2019 levels by 2026 despite supply shortages.

**Multimodal** forms of transportation make up 15% of the total distance travelled in the Netherlands (approximately 2.8b kilometres),

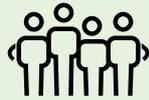
with trains being the most common choice in this regard. In terms of the number of multimodal transportations, the national average share is 3%, which is lower than the share amongst the five largest cities (see table below). The next generation workforce values having access to **mobility office hubs** that improve sustainability, amenities and the user experience.

**Table 1 Share of multimodal transportations in the Netherlands, in the G5 and in other cities**

	Share of multimodal transportations	Percentage of these that take place by train
Netherlands	3%	2% (=67%)
Amsterdam	11%	8% (=72%)
Rotterdam	8%	4% (=50%)
The Hague	8%	5% (=63%)
Utrecht	12%	10% (=67%)
Eindhoven	5%	4% (=80%)
Other cities (100,000+ residents)	5%	4% (=80%)

Source: CBS, OVIN 2015 – 2017, adapted from KiM, 2019.





### Next generation workforce

Future generations, such as those who belong to Gen Y and Z, will profoundly shape the workplace. Indeed, by 2040, they will comprise 73% of the workforce in the Netherlands (CBS, 2023). These workers prioritise tech-savvy mobility solutions, such as **MaaS**, and prefer **public transport** over car ownership, especially those who reside within urban areas. They are younger, highly educated, climate-conscious, and public transport-dependent, which, in turn, makes **flexible mobility solutions** a perfect fit for them.



### Hybrid working

Commuting habits have changed as a result of the pandemic. The next generation workforce values socialising and networking as well as the ability to **work efficiently anywhere they so wish**. Whilst Dutch employees have increasingly embraced working from home, the office continues to play an essential role in terms of collaboration and innovation. In the future, the office will transform from a “workplace” into a “**social meeting place**”, with accessibility the key feature of this transition. Therefore, **mobility hubs** that enhance sustainability and offer multifunctionality are in alignment with the evolving needs of modern office workers.



### Sustainability and well-being

Both the Paris Agreement and Dutch national legislation aim to minimise the effects of climate change. Large companies must report the **carbon emissions** from their employees’ commuting and travel from 2024. It is thus clear that **sustainable mobility** is moving towards the top of the agenda. Environmental, social and governance ambitions are increasingly important for institutional investors, whilst wellbeing measures seek to assess the impact that organisations have upon their employees’ physical and mental health, in an effort to encourage happier and healthier employees. We know that younger, highly educated people prefer working in **healthy buildings**.



### Technology

The rapid development of **internet technologies** in recent years has made people’s lives both more insightful and convenient. The Netherlands ranks high amongst its European counterparts with respect to the number of internet-connected households. Indeed, 98% of Dutch households have access to the internet compared to the European average of 93% of households (Eurostat, 2022). Both the integration of internet technologies and the rise of **shared-use modes of travel** have led to the introduction of MaaS platforms in recent years. The further adoption of working from home will create additional demand in flexible **MaaS solutions** often available near mobility hubs.



Laan van Puntenburg, Utrecht

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## 2 The role of Mobility-as-a-Service (MaaS) solutions in the office environment

### 2.1 What is Mobility as a Service (MaaS)?

The **three core concepts of MaaS** cover 1. Public transport, 2. Shared mobility, and 3. A platform (often in the form of a mobile application). In an ideal situation, users should be able to use MaaS to travel throughout the country via sustainable modes of transport without any need for privately owned means of transportation (Hietanen, 2014).

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**MaaS is a multimodal online concept for browsing, booking and paying for door-to-door trips**

The most well-known example of **MaaS in the Netherlands** is the **NS Business Card**, which can be used for the train and other forms of public transport (metro, bus, tram, etc.), as well as allowing users to rent NS bikes and shared cars (Greenwheels). The fact that such a large operator like Dutch Railways NS uses MaaS can help to speed up the adoption of MaaS. Other examples of MaaS in the Netherlands include MyWheels (on-demand electric cars), Beamr (an app for sharing trips, bikes, and cars), Swapfiets (subscription-based bikes) and Tripkey (an all-access 'key' for tourists for biking, public transport, rental cars and parking).

Generally speaking, MaaS is more often embraced by **Millennials** due, in part, to their technological savviness and wanderlust (Zijlstra et al., 2019). MaaS also inherently promotes pay-per-use over ownership (e.g., car ownership), and, in so doing, promotes **sustainable mobility**. The use of MaaS, and, in turn, the increased use of public transport, is expected to increase even further in the near future.

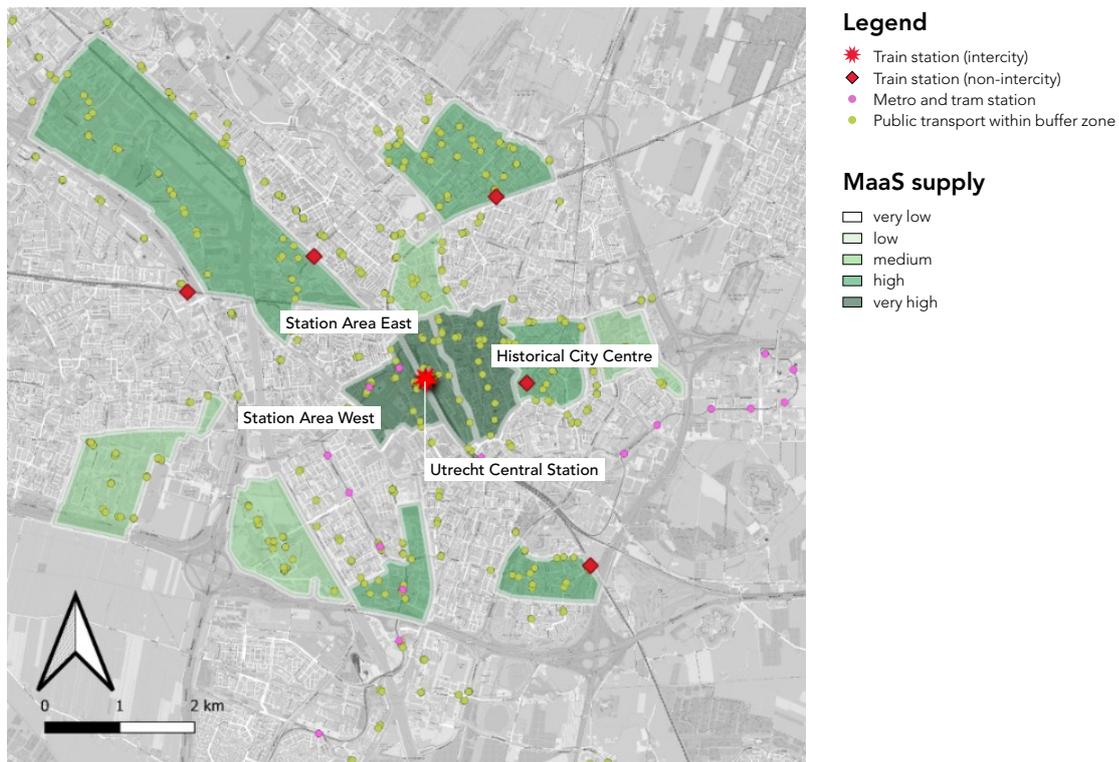
Current **challenges** include the coverage of MaaS solutions, potential barriers between competing mobility providers, and the somewhat disjointed view that this provides to customers (Witte et al., 2021). The end result is that customers are not yet fully able to embark on a seamless journey, albeit a number of trends do point towards the exciting potential of MaaS as a concept.

### 2.2 Evaluating MaaS supply in the Netherlands

As aforementioned, MaaS is still very much in the development phase; however, it is possible to estimate the **current MaaS supply** within a given area. Supply is highest in those areas where a combination of public transport and shared mobility exists in the service area of a platform app. For the purposes of this research, both the availability and presence of these two types of mobility service were measured.

Based on a custom geographical designation, **223 office areas** are defined by a.s.r. real estate, as representing the concentration of offices within major Dutch cities. Each office area was assigned two different scores: 1. Accessibility of **public transport** (maximum score of 6) and 2. Presence of **shared mobility**, including platforms (maximum score of 22). These scores were subsequently combined and recalculated into a five-point scale in order to **rank Dutch office areas based on their MaaS supply**. For example, the MaaS supply map of the city of Utrecht shown below clearly has a darker shade of green in the centre, that corresponds to a higher MaaS supply.

### MaaS supply of the office areas in the city of Utrecht



The office area in the Netherlands with the highest MaaS supply is located within the city centre of Rotterdam, surrounding Blaak and Coolsingel. Office areas in Amsterdam, Rotterdam and Utrecht account for most of the twenty highest-ranking areas.

These are the office areas in which a wide supply of MaaS solutions and public transport options are available. The top twenty MaaS enabled office areas can be found in the following table.

**Table 2 Ranking office areas by MaaS supply**

Rank	MaaS enabled office areas	Municipality
1	CBD - Coolsingel, Blaak, Boompjes	Rotterdam
2	CBD - Weena	Rotterdam
3	Bergwijkpark-Noord	Diemen
4	Amstelstation	Amsterdam
5	Centrum	Amsterdam
6	Nieuw-Zuid	Amsterdam
7	Teleport / Sloterdijk	Amsterdam
8	Westelijke Tuinsteden	Amsterdam
9	Zuidas	Amsterdam
10	Zuidelijke IJ-Oevers	Amsterdam
11	Zuidoost - Amsterdamse Poort	Amsterdam
12	Zuidoost - Bullewijk	Amsterdam
13	Stationsgebied Oost	Utrecht
14	Stationsgebied West	Utrecht
15	Historische Binnenstad	Utrecht
16	Zuidoost - Holendrecht	Amsterdam
17	Centrum/Station	Roermond
18	Brainpark 1	Rotterdam
19	Brainpark 2	Rotterdam
20	Brainpark 3	Rotterdam

Source: a.s.r. real estate 2023.

## 2.3 Linking existing MaaS supply to the performance of an office area

Combined with market insights, there appear to be several **real estate indicators associated with a high MaaS supply**. This is especially the case when comparing the average value of real estate indicators amongst all office areas and the top twenty MaaS enabled office areas. We have looked at the following indicators for each office area:

- supply/take-up ratio,
- vacancy rate,
- average rental price,
- office stock and
- construction year of the office buildings.

### Supply/take-up ratio:

This ratio indicates the share amongst the supply of office space and the office space that is absorbed by the occupier market during the same period. A lower ratio suggests a faster absorption rate of office space. The supply/take-up ratio amongst the top twenty MaaS enabled office areas is, on average, twice as low than the national average, thus indicating **a twice as fast absorption rate** than the national average.

### Vacancy rate:

There is approximately **3% less supply of vacant office space** available in the top twenty MaaS enabled office areas than the national average (9% versus 12%).

### Average rental price:

Spatial demand in the top twenty MaaS enabled office areas translates into **average office rents that are relatively higher** than the national average.

### Office stock:

The total office stock amongst the top twenty MaaS enabled office areas is, on average, **three times larger** than the national average office stock.

### Construction year of office buildings:

Office areas in the top twenty MaaS enabled areas, which are mostly located in the larger inner-city areas, are, on average, **a couple of years older** than the national average.

**In short, there seems to be a positive relation between a higher MaaS supply and improved real estate indicators for office areas.**





Wonderwoods, Utrecht

# 3 How ASR Dutch Mobility Office Fund enables sustainable mobility

The **ASR Dutch Mobility Office Fund** focuses exclusively on offices that are located in the near vicinity of public transport hubs. More specifically, the Fund primarily invests in office assets that are within walking distance of an **Intercity station in the G5**. The Fund also seeks to increase sustainable mobility, both to and from its various assets. One important advantage of the Fund's public transport hub locations is the potential to **decrease CO<sub>2</sub> emissions of mobility**, through increasing the share of sustainable mobility. This includes the use of public transport, bikes or scooters, shared (e)cars and (e)bikes.

## Case study: Wonderwoods, Utrecht

In the case of forward funding acquisitions such as **Wonderwoods** in Utrecht, a mobility plan aimed at maximising sustainable mobility was drafted. For Wonderwoods, the two main aims of the mobility plan are as follows:

1. Minimising car usage and therefore reducing the need for parking places, and
2. Increasing shared mobility. To this end, the mobility plan of Wonderwoods makes use of the following solutions:
  - **Parking as a Service (PaaS):** in order to both minimise and optimise the use of parking spaces, a flexible parking "shell" is used. Next to the parking garage below Wonderwoods, tenants will be able to make use of the nearby parking garage of Croeselaan. Together, they form a virtual garage, designed for optimal use by both office workers and residential tenants, through an app bundling the parking capacity.

- **Mobility director ('mobiliteitsregisseur'):** a mobility director will be appointed to manage the parking garage property manager, and to make sure that the demand and supply of parking places remains in balance, and that the use of the parking places is therefore optimised.
- **Shared mobility:** in order to decrease car usage as much as possible, having a full range of options for shared mobility is crucial. In Wonderwoods, there will be several types of shared (e)cars, (e)bikes and scooters, both electric and traditional. Reservation and use will be possible via an app.
- **Other measures:** the Fund is currently investigating the potential impact upon the CO<sub>2</sub> emission reduction potential of other measures which can be introduced within the building, including, amongst other things, adding showers, lockers and other services that encourage sustainable mobility.

**Mobility is essential in relation to contemporary trends that are shaping the way we work. MaaS solutions could potentially add value to offices, insofar as having a large MaaS supply has been associated with a better performance of an office area. The ASR Dutch Mobility Office Fund is aware of this link and is continuing to add MaaS solutions where possible in offices that are owned by the Fund, such as in Wonderwoods, Utrecht.**

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