

MaaS preparations in Tallinn

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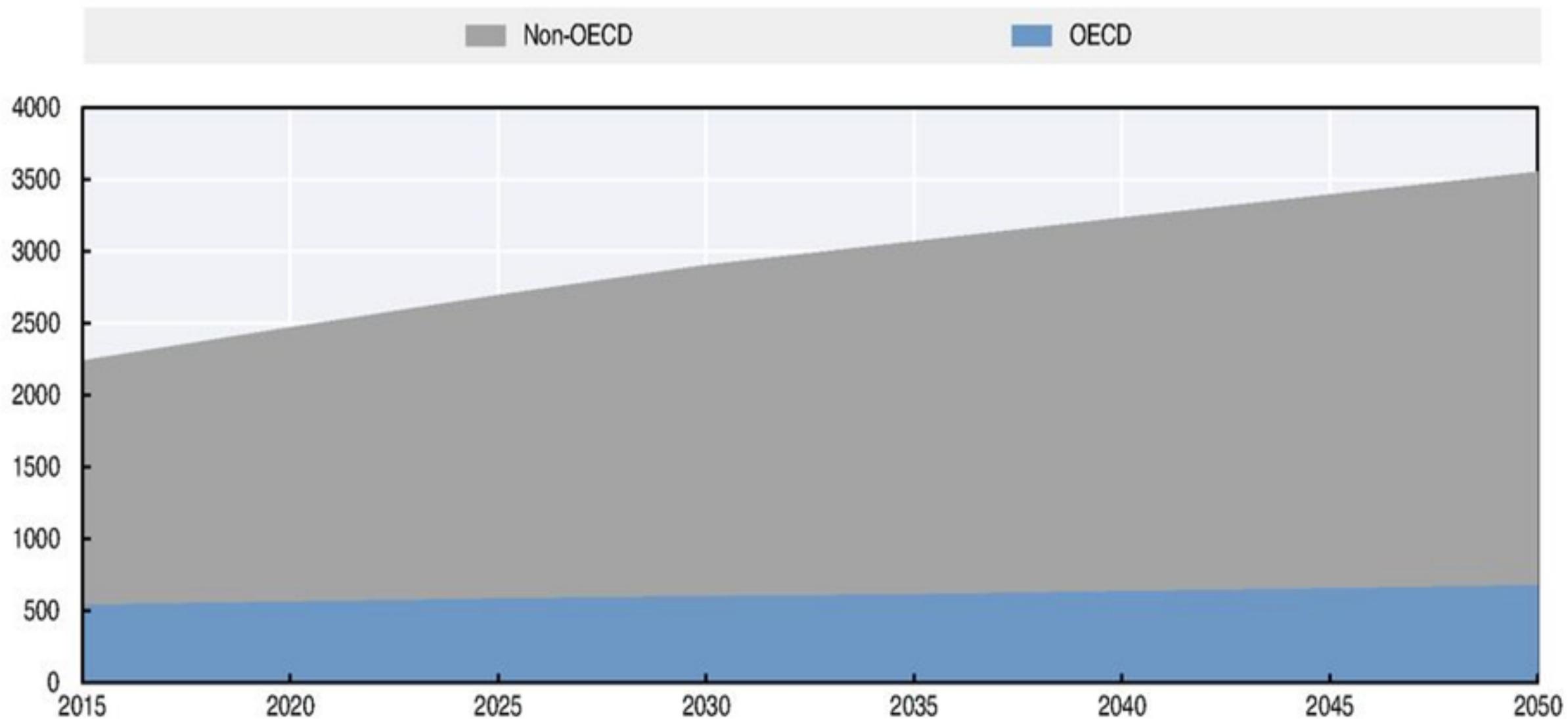
Transportation is being hit by a
DIGITAL TSUNAMI

A long-exposure photograph of a city street at night. The street is filled with light trails from cars and streetlights, creating a sense of motion and energy. The buildings on either side are illuminated, with many windows glowing. The sky is dark with some clouds. The overall atmosphere is one of a bustling, modern city.

CITIES WILL CHANGE

Total population of cities over 300 000 inhabitants

Million inhabitants

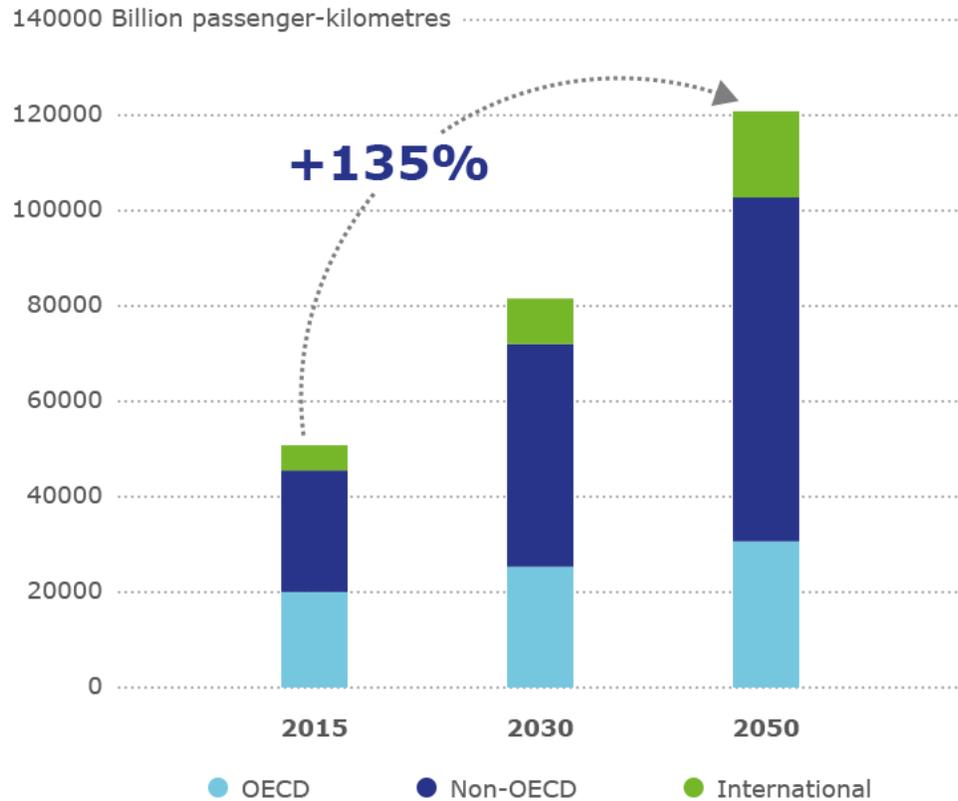


Source: United Nations (2014), *World Urbanization Prospects: The 2014 Revision*.

StatLink  <http://dx.doi.org/10.1787/888933442738>



Passenger transport volumes

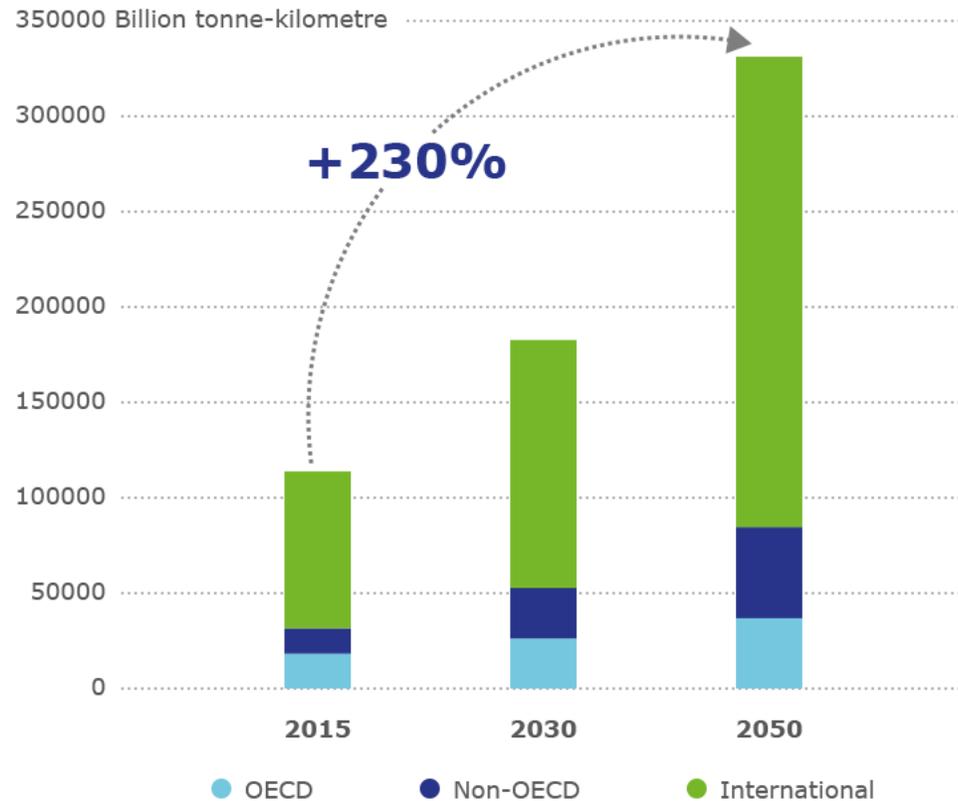


Global transport volumes will continue to expand

- Passenger transport will more than double by 2050
- Global car stock: from 1 billion in 2015 to 24 billion in 2050
- Freight transport is projected to triple



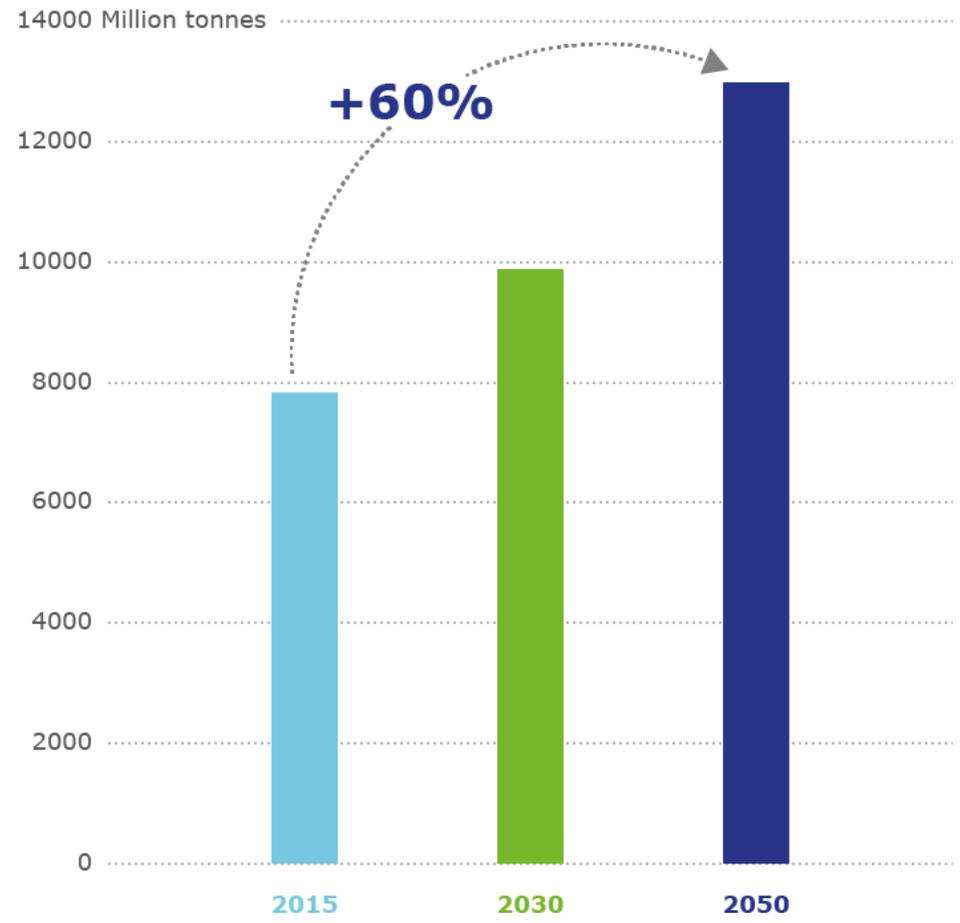
Freight transport volumes



Global transport volumes will continue to expand

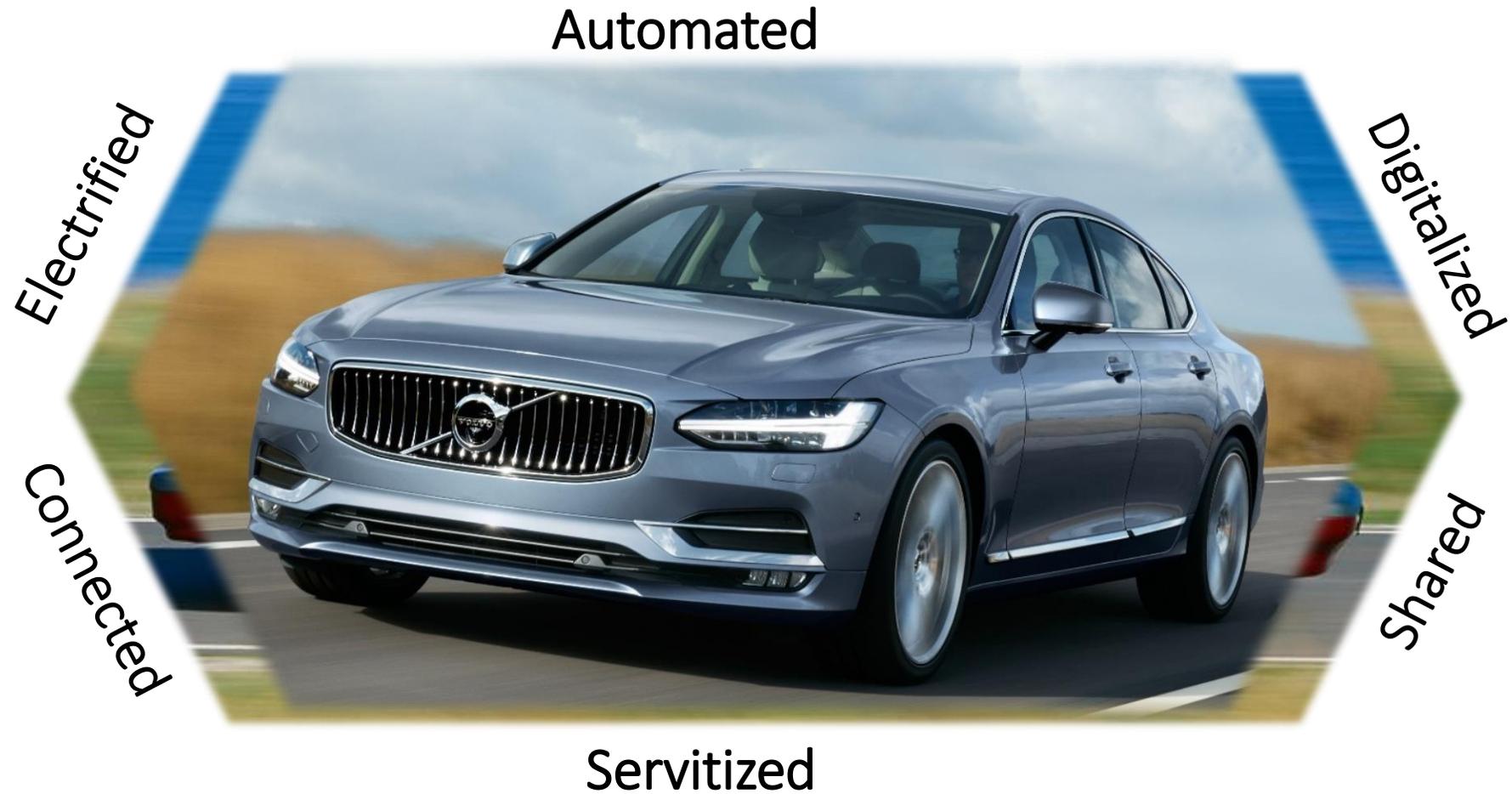
- Passenger transport will more than double by 2050
- Number of cars worldwide will grow to 2.4. billion in 2050, from 1 billion in 2015
- Freight transport is projected to triple

ITF Transport Outlook 2017



If unchecked, transport CO₂ emissions could increase 60% by 2050

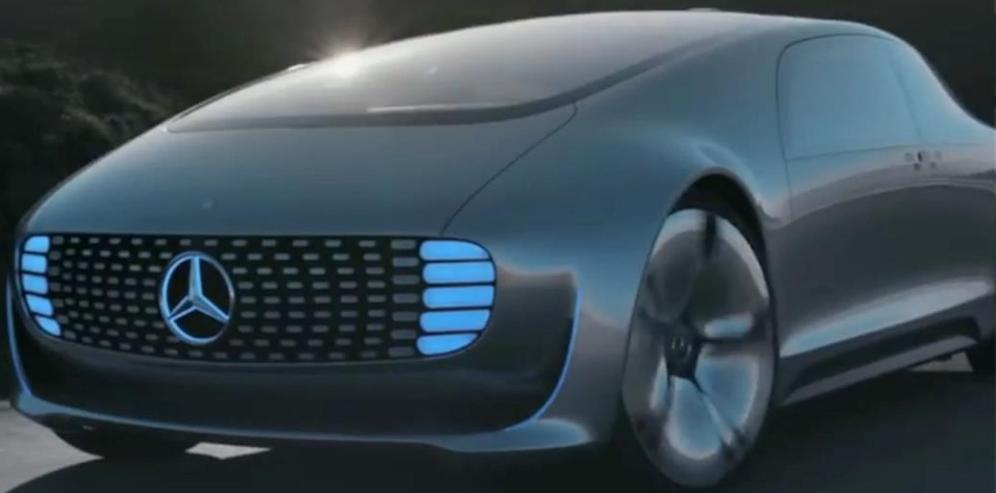
Automotive megatrends shaping our future mobility



What if, all these cars were suddenly self-driving?



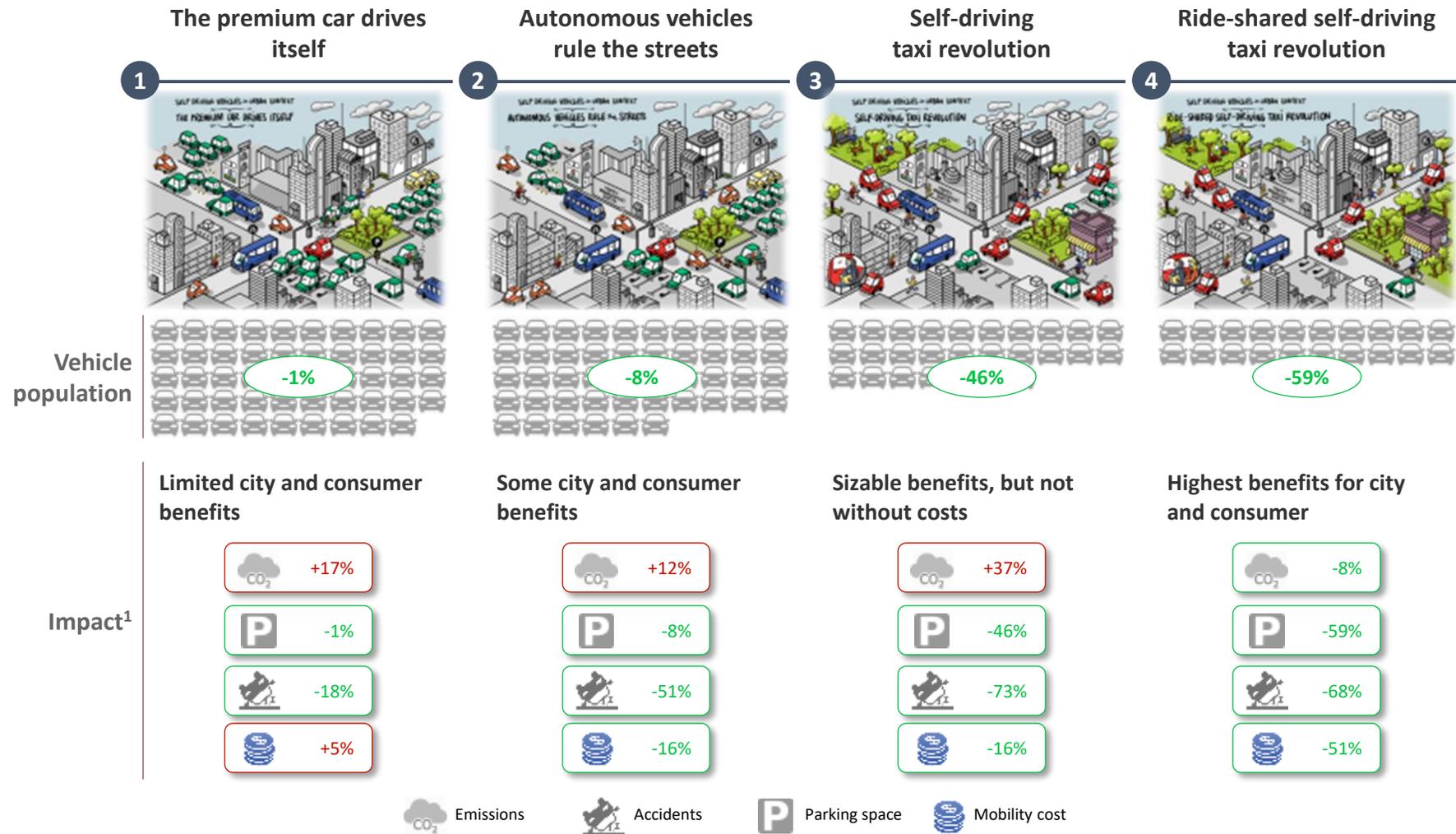
What if, all these cars were suddenly self-driving?



Four scenarios of future mobility including SDVs modeled

	1 The premium car drives itself	2 Autonomous vehicles rule the streets	3 Self-driving taxi revolution	4 Ride-shared self-driving taxi revolution
Primary ownership model	Private ownership of vehicles	Private ownership of vehicles	Fleet ownership by mobility broker	Fleet ownership by mobility broker
City policy	No major city involvement	Cities promote self-driving vehicles	City disincentivizes private car ownership	City disincentivizes private car ownership
Description	<p>SDVs complement existing mobility offer</p> <ul style="list-style-type: none"> — Consumers own and use SDVs like traditional cars 	<p>SDVs replace most traditional cars</p> <ul style="list-style-type: none"> — Private SDVs replace most traditional cars and some bus public transport 	<p>SDV taxi is primary mobility option</p> <ul style="list-style-type: none"> — Private cars rare within city; citizens use shared mobility, SDVs replace some buses 	<p>Ride-shared SDV taxi is primary mobility option</p> <ul style="list-style-type: none"> — Private cars rare, taxi rides are shared, most buses are replaced

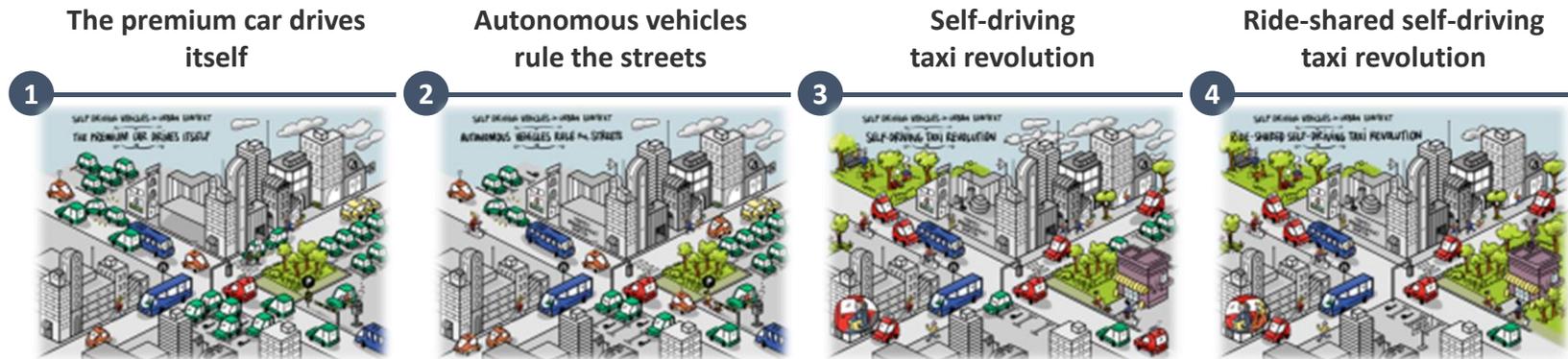
City and consumer benefits highest in scenarios 3 and 4...



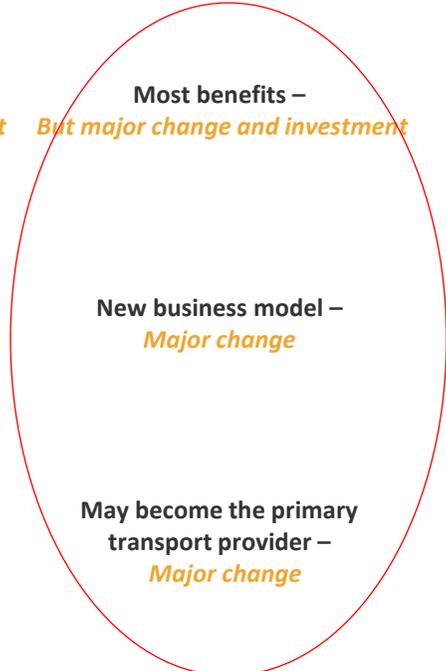
1. In year 10; Note: calculations based on model city with tidal-style traffic and approx. 5M inhabitants and 1.34M private vehicles and taxis, modeled over a 10 year horizon; assumes no powertrain mix shift; Source: World Economic Forum; BCG analysis



..but scenarios 3 and 4 also require fundamental change



	1	2	3	4
Implications for cities	No benefits – <i>No major change</i>	Some benefits – <i>No major change</i>	Considerable benefits – <i>But major change and investment</i>	Most benefits – <i>But major change and investment</i>
Implications for car manufacturers	Business model as is – <i>No major change</i>	Business model as is – <i>No major change</i>	New business model – <i>Major change</i>	New business model – <i>Major change</i>
Implications for mobility brokers	One transport mode out of many – <i>No major change</i>	One transport mode out of many – <i>No major change</i>	May become the primary transport provider – <i>Major change</i>	May become the primary transport provider – <i>Major change</i>



Source: World Economic Forum; BCG analysis

MaaS offering levels

- **Level 0 = no integration.** This basic level refers to the situation in which separate services are provided for different means of transport.
- **Level 1 = integration of information.** At this level, travel information is provided through (multi-modal) travel planners, which may or may not include information on routes and costs. The added value level 1 holds for users is that it facilitates the choice regarding the time of day, the route, or the mode of transport to be used.
- **Level 2 = integration of finding, booking, and payment.** At this level, MaaS facilitates the finding, booking, and payment of individual trips. The added value of level 2 is that users can find, book, and pay for their trip at a single service point (e.g., through an app with a pre-registered credit card).
- **Level 3 = integration of transport services into passes and bundles.** At this level, MaaS does not just cover individual travel movements; the service also meets the full daily mobility needs of individuals and families by offering different means of transport through bundles and/or passes. The added value of level 3 is that MaaS now offers users an alternative covering all their daily mobility requirements. Thus, it also constitutes an alternative for individual car ownership (according to Sochor et al., 2017).
- **Level 4 = integration of societal goals.** At this level, MaaS extends beyond liaising between the demand for and supply of mobility. Supply and demand are now combined with goals such as reducing the use of cars or promoting liveability in the cities.

Tallinn is targeting min Level 2!

4

Integration of societal goals
Policies, incentives, etc.

3

Integration of the service offer
Bundling/subscription, contracts, etc.

2

Integration of booking & payment:
Single trip - find, book and pay

1

Integration of information:
Multimodal travel planner, price info

0

No integration:
Single, separate services



Strategic choices for Tallinn

- MaaS operator - we attract one to implement their service in Tallinn
- The city is developing its own MaaS platform – in connection to the ticketing system
- The city announces the procurement for the MaaS platform separately
- The city only deals with the middle layer - it connects all other systems and collects / analyses data

MaaS operator

- Makes integrations with local operators
- Is responsible for operations and failures during the journey and needs to find new alternatives to move people on the failure of one leg – still is financially protected with very strict contracts (city can help)
- MaaS operator maybe the city, but in such a case it is procured as white label app, not developed from scratch.
- MaaS operators are anyhow always welcome to implement in Tallinn

Biggest challenges

- MSPs (specially Bolt) is reluctant to open up their fleet to third parties
- Small population -> maybe it is wise to propose all Estonian cities as one shot (all MSPs are the same)?
- MaaS can be sustainable only if the business model is B2B, and even then it should be supported by the municipality or state government
- To be as dynamic as the market – MaaS market is still under development and nobody knows exactly, which kind of business models will arise and will remain sustainable