

Understanding The Impact Of COVID-19 On Urban Mobility Trends

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Introduction



The COVID-19 pandemic is having profound economic, social and political impacts across the globe. Its effects are spreading throughout the entire transport sector, and urban mobility is no exception. Public transport agencies, operators and other companies working in the mobility space are having to contend with the fact that commuting and travel patterns may not recover to their pre-COVID-19 levels for several years. In addition, new mobility patterns will emerge, based on changing consumer behaviors (i.e. trust issues, greener mindset), economic constraints (i.e. less disposable income) and new policy priorities (i.e. sustainable policies, budget deficits, health policies, etc). Therefore, the organizational strategies of these agencies and companies will need to be realigned to the new realities, long term investment programs may need to be re-prioritized, and pricing schemes, tariff mechanisms and subsidies will have to be revisited.

As such, this white paper aims to assess the short to medium term implications of COVID-19 on the urban mobility trends.

Major Uncertainties in Mobility Trends Post COVID-19

There are multiple uncertainties that can shape all the future mobility trends, with the two most relevant ones being the degree of economic recovery and the containment of COVID-19. Multiple scenarios can be derived from this, ranging from a deep-steep (L-shaped economic growth) to an optimistic (V-shaped) recovery. Within this range, there are all manner of possibilities, as key variables are widely unknown, including virus containment, ripple and systemic effects of economic shutdowns across the world, impact of economic stimuli, among others. In addition, major uncertainties could have a highly disruptive impact on mobility, such as the shape of tourism recovery, whether or not populations will adapt social distancing protocols (or would they fade quickly), and how companies and organizations assimilate to a more remote working style and relax

(or modify for the long term) the need to work from offices.

Regardless of what scenario may take shape, we will be entering the 'new normal' phase post COVID-19, where not only economic, but also social behaviors will drastically change. This 'new normal' will be comprised of changes in social dynamics (i.e. social distancing, restricted public events/entertainment, working from home), values (i.e. support to local businesses, value added to consumers/users, impact on wellbeing), consumer behavior (i.e. different expenditure priorities, less disposable income, online over brick and mortar) and international travel patterns (i.e. quarantine while traveling inside/outside countries), among others.

Methodology

This white paper has been constructed using different methods. First, we conducted an extensive trend scanning exercise, identifying key trends that we aggregated into five mega trends, and deemed most relevant to the future of mobility. For each mega trend, we scanned the most relevant signals of what is happening worldwide. In parallel we connected

with twelve worldwide renowned experts in different mobility-related fields for a series of in-depth interviews. Based on these factors, we were able to provide indicators on whether we believe the mega trends will accelerate or decelerate, and what will be the impacts for cities and for public transportation.

Sector	Mega Trend	Trend
Mobility	 Micro & Mini Mobility	Rise of Cycling E-scooters/Mopeds/Nano-vehicles
Mobility	 Autonomous, Connected, Electric and Shared Vehicles (ACES)	Autonomous & Connected Vehicles Electric Vehicles Car/ride Sharing Integrated Maas
Mobility	 Low-touch Economy	Safety-based Operations Advanced Operational Technologies
All	 Virtual Presence	Remote Work Virtual Reality
Urbanism	 Sustainable Living	Car-free Cities Deglobalization De-urbanization

1. Micro & Mini Mobility



All expert interviews, as well as our research, converged on the following: the rise of personal mobility will be accelerated by COVID-19 for customers using their own assets. For sharing solutions, there will be a temporary deceleration, until either a vaccine is found or consumers become more confident whilst living under social distancing measures, and have faith that sufficient COVID-19 related precautions have been taken. Given the low levels of investment required and flexibility of these solutions, it is easier for cities to rapidly repurpose streets and public spaces to expand their capacity.

While other transport infrastructure requires large investments and has a long bureaucratic process, light, individual transport initiatives can be deployed rapidly and in a short period of time. This flexibility makes this transportation mode an important tool for cities to adjust well to the uncertainties imposed by COVID-19 (i.e. virus containment, new waves, vaccination) and cope with volatile demand. Nevertheless, due to the low capacity of this mode of transport (in most cities, it accounts for a marginal percentage of total trips), it does not represent an adequate replacement for mass public transport, but just a complementary mode.

Micro & Mini Mobility Trend Summary



Short-term: Acceleration for owned assets /
Deceleration for shared assets



Medium-term: The trend will accelerate



Impact on cities: Positive – micro & mini mobility can help to help reduce stress on the demand for public transport commuting due to social distancing



Impact on public transport authorities and operators: Opportunities to enter the micro & mini mobility space, or achieve synergy by partnering with companies in this space.

What the experts say:

“You can see many European cities where bike lanes and subsidies for micro mobility are increasing. Also, you will see many innovations in this sector popping up”.

Anne-Marie Idrac

Former RATP CEO and Former French Secretary of State for Transport.
Current Senior Advisor at Sia Partners.

“Private bicycles sales are surging in the US”.

Radcliffe Dacanay

Principal Planner at Seattle Department of Transportation.

“Personal mobility has a marginal share of total trips conducted in a metro system. Even if it increases by 10x, it will not reduce metro demand significantly”.

Ildefonso de Matias

Former CEO, Metro de Madrid.

Signal Scanner

Accelerating



USA

New York City is showing record levels of cyclists. The city's Department of Transport reports a 50 percent increase in cycling over the same period last year, and a 67 percent increase (May 2020) in usage of New York's Citi Bike sharing system. There is also a surge in demand in many of the bike sharing systems in cities like Minneapolis, Chicago, Oakland, San Diego, Portland and San Francisco, which are creating "slow street" networks.

Australia

Sydney and Melbourne committed more than \$400M USD to develop pedestrian and cycling infrastructure in the next 4 years.

UK

The Government approved a £2 billion package to create a new era for cycling and walking. The government will fund and work with local authorities across the country to help make it easier for people to use bikes to get around. In addition, subsidies are being directed for people to repair their old bikes and get them out on the streets again.

Italy

Many cities are hoping to encourage people to use alternate forms of transportation. Milan has unveiled an ambitious plan to remake its streetscape, to discourage car use and make it easier for people to walk and cycle.

Belgium

Brussels is re-timing traffic lights to give more time to pedestrians and cyclists, and avoid crowding at junctions.

Singapore

The country has published its post COVID-19 transport plan, which establishes, walking, cycling and riding as the preferred modes of transport.

2. Autonomous, Connected, Electric and Shared Vehicles (ACES)

Electrical Vehicles (EVs)

COVID-19 will have an immediate impact on the rising car ownership levels, as it will give a greater sense of safety to users. This sentiment is also aligned with recent consumer surveys (source: IBM-IBV), which indicate that regular users of public transport plan to switch to their cars (circa to +20% or more). Nevertheless, the increase in car ownership will not necessarily be translated into new vehicles, as people will have less disposable income, and consumers will opt for fewer and cheaper cars. Therefore, the implications for EVs are far from straightforward.

As a result of COVID-19, consumer behaviors will change positively and a more “sustainable mindset” will be adopted. In parallel we can expect more EV friendly policies in pro-electrification countries. However, expected cheaper gasoline prices could have some negative impacts in certain geographies (EV adoption is mainly geographically based). Although the total cost of maintaining an EV is lower than a combustion engine car, most people look at the short-term costs, i.e. the cost of the vehicle and the cost of gasoline, before making their purchasing decisions. Finally, as EV adoption is highly related to local context, we can expect an important acceleration in China and Europe, mainly driven by the localization of EV supply chains, and ambitious policy targets. Considering all factors, COVID-19 should have a moderate effect on this trend, although constrained by local policies, incentives, and geographical considerations.

EVs Trend Summary



Short-term: The trend will maintain its pace



Medium-term: The trend will accelerate



Impact on cities: Countries with sustainable policies will accelerate EV adoption. Others may take a step back and de-prioritize



Impact on public transport authorities and operators: Trend to be closely observed and monitored. EV projects in the pipeline to gain momentum



Impact on other transportation companies: Opportunities to electrify fleets and shift to EVs, based not only on sustainability grounds, but in economic ones

What the experts say:

“Climate change will get a new focus in a post COVID-19 world... We will see a very rapid shift towards electric vehicles. China has invested \$50B in the EV industry”.

Jean Pierre Corniou

Former Senior VP & CIO at Renault SA.
Current Partner at Sia Partners.

“Countries that have the highest adoption of EVs have strong supportive policies and regulations. Mass adoption is correlated to policies”.

Scott Kubly

Ex-Chief Programs Officer of Lime.
Founder of Cabana.

“The future is electric. Companies will start looking at sustainability more seriously”.

Avinash Rugoobur

President at Arrival.

“The world is going to move quickly towards Electric Vehicles (EVs) as governments are very clear that they don't want to go back to pre COVID-19 levels of pollution”.

Timothy Papandreou

Former Chief Innovation Officer San Francisco MTA.
Founder of Emerging Transport Advisors.

“Adopting EVs will accelerate current environmentally friendly policies and the rising car ownership trend.”

Anne-Marie Idrac

Former RATP CEO and Former French Secretary of State for Transport.
Current Senior Advisor at Sia Partners.

“Electric vehicle (EV) adoption will take time – the game changer could be if people realize EVs also make more economical sense”.

Radcliffe Dacanay

Principal Planner at Seattle Department of Transportation.

Signal Scanner

Accelerating

China

Shenzhen became the first city in the world to convert its entire public bus fleet to electric buses.

Germany

The German government has included several measures to promote electric mobility, including doubling EV subsidies, removing EV vehicle taxes until 2030, investing €2.5B in charging points and battery cells, and switching public transportation to fully electric vehicles.

Singapore

Post COVID-19 Transport plan – 2nd pillar: rapid adoption of EVs and ban of internal combustion engine by 2030.

South Korea

Kia announced a micro EV to be used in cities to cope with increase in demand of affordable private transportation.

UK

45% of respondents in the Venson Survey considered buying an EV in the wake of COVID-19. An additional £10M was committed by the UK Government in a post COVID-19 plan to increase charging points at the residential level.

US

- Rivian, an EV startup, has received an order of 100,000 electric delivery vans from Amazon.
- A recent Harvard University study shows a correlation between an increase in long-term exposure to PM2.5 and a high rate of death due to COVID-19.
- Stanford engineers have published a research with claims that they have taken steps towards making it practical for EVs to recharge as they travel along highways built to “refuel” vehicles wirelessly.
- Lyft has committed to transition to zero emissions by shifting to 100% EVs on its platform.
- California has announced that 50% of truck sales must be electric by 2035, and 100% by 2045.

Maintaining

China

By mid-April 2020, road traffic levels in 70% of Chinese cities were at least 90% or more of their 2019 levels (OECD's International Transport Forum research).

US

More than 17% of people surveyed surveyed have increased the use of their personal vehicle as a result of COVID-19, with 1 in 4 making it their exclusive mode of transport. (Institute of Business Value).

Autonomous Vehicles (AVs)

The case of AVs is considerably different to EVs, and needs to be considered on a longer trajectory. While some experts argue that safer COVID-19 mobility requirements will accelerate the use of autonomous driving to replace human drivers, multiple other indications point towards this trend continuing its regular course, perhaps even experience a slowdown. Simply, implementation of AVs is a long-term initiative, and delays could occur as capital is diverted to other pressing priorities. AV testing programs, which are essential milestones in the development of the technology, could very well be put on hold by cities and authorities. In addition, automotive manufacturers will face severe financial pressures that can slow their R&D efforts.

In the shorter term, the largest sub-trend identified for AVs so far is the demand for “moving things” rather than people, with the most immediate use

cases recently being in delivery. The fact that all our AV experts interviewed concurred, in addition to the level of funding that is currently being raised (even during COVID-19) for this activity, makes it an interesting sub-trend to closely monitor. However, there are several challenges that are yet to be addressed with autonomous delivery; for example, the last 100 feet could be a potential issue for autonomous vehicles, as mapping the indoor areas of buildings will not be easy. The second sub-trend which could come to fruition in the near-term is the implementation of AVs for passenger transportation under controlled circumstances (i.e. shuttle buses / point A to B buses), as the technology is close to being ready, and policy changes required for them are not as complex as for open autonomous transportation. When autonomous vehicles have a dedicated route to take without any deviations, they are usually able to maneuver easily and do not need to change lanes very often.

AVs Trend Summary



Short-term: The trend will maintain its pace



Medium-term: The trend will maintain its pace



Impact on cities: Cities with a large e-commerce and delivery base could explore last mile delivery opportunities using autonomous vehicles



Impact on public transport authorities and operators: Opportunities to enter into new fields of play (i.e. “moving things” rather than “moving people”)

What the experts say:

“This is a long-term trend and should not be affected by COVID-19”.

Timothy Papandreou

Former Chief Innovation Officer San Francisco MTA.
Founder of Emerging Transport Advisors.

“Autonomous vehicles (AVs) are the most complex inventions in transportation of all time, and we still have way to go”.
“AV short-term opportunities are in shuttle buses / dedicated itineraries.”

Jean Pierre Corniou

Former Senior VP & CIO at Renault SA.
Current Partner at Sia Partners.

“In the short-term, we see public shuttles from point to point and industrial vehicles as a viable options”.

Rahul Razdan

Senior Director, Special Projects (AV) at Florida Polytechnic University and Forbes Guest Author.

“Mobility of people will decrease; mobility of things will increase”.
“Main use cases of AV will be deliveries, freight & e-commerce”.

Anne-Marie Idrac

Former RATP CEO and Former French Secretary of State for Transport.
Current Senior Advisor at Sia Partners.

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Accelerating

EU
The FABULOS project will trial and evaluate three robot bus prototypes in real-life conditions in five European cities by 2021.

- China:**
- In February, the Chinese government issued a blueprint for the development of AVs, to speed up the mass production of high-level autonomous cars by 2025
 - According to Baidu, COVID-19 could accelerate robotaxi adoption. Baidu is rolling out a fleet of its Apollo robotaxis across 3 cities in China.

- US**
- Amazon bought Zoox for (circa) \$1.2B, a startup aiming to bring AVs to complex city environments.
 - Tesla has indicated that its robotaxi will be ready (functionality wise) at the end of 2020.

Maintaining

UK
Development of a 300km AV test environment road by the Midlands Future Mobility consortium.

- US**
- Waymo has raised \$3B year-to-date, including \$750M during a funding round at the peak of COVID-19 in USA.
 - Intel/MobilEye announced their intention to launch robotaxis by 2022 in Israel, France, Korea and China.
 - Tortoise and Go X announced their pilot rollout of autonomous scooters in Georgia.
 - Autotech Ventures raised \$150M to companies around ACES post COVID-19, mainly for industrial AVs and surrounding digital technologies.

Decelerating

US
Ford: to delay launch of the robotaxi service to 2022 because of COVID-19.

Ride-hailing / Car-sharing & Mobility as a Service (MaaS)

The impact of COVID-19 on this trend in the short-term is significant, as the use of ride-hailing and car-sharing services has fallen across the world. Nevertheless, all indications point to a rebound in use, as per the first indications coming from China and recent numbers reported by Uber (May 2020), where moderate growth is being consistently measured.

Short-term concerns about car-sharing/ride-hailing services will eventually be offset due to users becoming more comfortable with strict cleanliness protocols. In the case of this trend, trust is the main factor, and the trend will recover as long as trust starts increasing among users.

The large pressures on this trend in the medium and long term do not necessarily come from concerns related to COVID-19, rather from two fundamental factors; the resilience of the business models of the

aggregators as well as the regulatory aspects, especially given an increase in debate regarding their future.


All things considered, the trend points towards a short-term deceleration followed by a smoother rebound, maintaining the trend in the medium term.


In the case of Mobility as a Service (MaaS), there are no indicators to either accelerate nor deaccelerate this trend, other than the shape of the economic recovery post COVID-19. Economic recession combined with COVID-19 has had a dual impact. On the one hand, it is accelerating the comeback of the personal car. On the other, it is having a severe impact on disposable income. Therefore, the rise in this trend will be limited, despite holding its position. Furthermore, COVID-19 has revealed the importance of a user-friendly experience across all sectors.

Our belief, as well as that of all the experts, is that in the long term MaaS is still the “future” (or at least a very important part of it) of transportation.


Trend Summary


Ride-hailing / Car-sharing


 Short-term: The trend will decelerate

 Medium-term: Trend will accelerate

MaaS

 Short-term: The trend will maintain its pace

 Medium-term: The trend will accelerate

 **Impact on cities:** Trust issues and policy discussions will be at the center of discourse

 **Impact on ride-hailing and car-sharing companies:** Figure out ways to rapidly build back trust

What the experts say:

“There will be a huge trust issue between drivers and passengers with barriers to overcome, although car-sharing will continue”.

Scott Kubly

Ex-Chief Programs Officer of Lime.
Founder of Cabana.

“In the long term, transportation will follow the Amazon Web Services (AWS) model... MaaS will be the future”.

Rahul Razdan

Senior Director, Special Projects (AV) at Florida Polytechnic University and Forbes Guest Author.

“There will still be demand for ride-hailing services, but safety measures will increase”.

Timothy Papandreou

Former Chief Innovation Officer San Francisco MTA.
Founder of Emerging Transport Advisors.

“Riders lacking confidence in public transport will increase cars in the city – this could increase car-sharing/ride-hailing services”.

Anne-Marie Idrac

Former RATP CEO and Former French Secretary of State for Transport.
Current Senior Advisor at Sia Partners.

“There will definitely be consolidation in the AV market, which is the right course of action. We will get a more realistic perspective of it than we did 2 years ago”.

Sven A. Beiker

Managing Director of Silicon Valley Mobility.

Signal Scanner

Accelerating

EU

A consortium of European Mobility companies launched 'CORE MaaS' (COVID-19 Resilient Mobility as a Service): an open middleware platform that integrates all types of mobility providers, while optimizing social distancing.

US

Intel acquired Moovit (during COVID-19 peak), a MaaS company for \$900M for an urban mobility app.

Maintaining

China

China's biggest ride hailing firm 'Didi Chuxing' says its ride-sharing orders recovered to pre-pandemic levels upon easing restrictions.

US

- Uber has established its first SaaS partnership with Marin Transit, a public bus agency based in Marin County, California, to bring on-demand public transit to the Uber app.
- Lime has introduced new daily and monthly passes to its LimePass suite of micromobility subscription services in the wake of COVID-19.

Decelerating

China

Decrease in demand for cab aggregators (Didi, Meituan), given the adoption of stringent sanitization measures by public transit agencies that are not being enforced on these companies.

US

- Lyft, Uber and other aggregators reported severe decline in customer volumes and large lay-offs during the pandemic. Uber reported (end of May) an increase in users during four consecutive weeks.
- Hertz: the world's largest car rental agency filed for bankruptcy.

3. Low-touch Economy

One of the most straightforward impacts that COVID-19 has had is the move towards a low-touch economy. In the context of public transportation, cashless and touchless solutions will need to be immediately addressed in order to regain the trust of passengers in public transportation post COVID-19. Consumers and businesses alike are keen to reduce the number of touchpoints between them. One of the most immediate effects is the acceleration of contactless payments across the world, including emerging economies, which are rapidly introducing “tap-and-go” cashless payments. A recent Amaiz survey conducted in the UK revealed that 54 percent of small businesses were now cashless or were planning to be and 21 percent of those businesses said that they had no plans to return to cash payments.

In addition, other than more immediate actions such as guaranteeing social distancing and moving towards low-touch interactions, COVID-19 will also affect the acceleration of the use of advanced technologies (i.e. deep technologies) for multiple purposes. From the role of artificial intelligence applied to video-surveillance, in order to detect health related concerns (i.e. infected cases) to enforce social distance within transport operators, to the increasing role of high-performance computing tackling complex analysis.

Finally, while health and safety protocols are deeply engrained in the transportation sector, this should evolve through incorporating new standards of cleanliness and sanitation.

Low-Touch Economy Trend Summary



Short-term: The trend will accelerate



Medium-term: The trend will accelerate



Impact on cities: Significant impact as cities will have to reconfigure towards the low-touch economy



Impact on public transport authorities and operators: Significant impact, as gaining trust is imperative, and low-touch solutions will help to do so

What the experts say:

“Transport operators need to take several safety measures and let the public know what they are doing to recover confidence in public transport”.

Radcliffe Dacanay

Principal Planner at Seattle Department of Transportation.

“The public transport load factor needs to be below 1 for social distancing. Copper & brass are self-sterilizing materials and could be used for high-touch areas”.

Scott Kubly

Ex-Chief Programs Officer of Lime. Founder of Cabana.

“Transport for New South Wales provides capacity data to app providers, who update subscribers on seat availability”.

Jon Lamonte

Chief Executive of Sydney Metro.

“COVID-19 is slowly starting to change human behaviors, and with this OEMs and transport companies will also need to adapt quickly. OEMs need to be able to rapidly make new vehicle types based on new behaviors that fit the low-touch economy”.

Avinash Rugoobur

President at Arrival.

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Accelerating



Worldwide

- The Touchless Sensor market is growing worldwide (it is expected to reach \$19.8B by 2027), driven by a revised compounded annual growth rate (CAGR) of 19.8%. RFID Technology is forecasted to grow at over 20.3% and reach a market size of \$9.2B (source: Global Industry Analysts).

Australia

- Avalon Airport in Australia introduced touchless self-service check-in.
- Sydney public transport is offering load factors through apps.

UK

- London North Eastern Railway: app with real-time digital maps showing seats availability, using sensors that detect whether a seat is free and passengers can view digital maps in real-time showing which availability.
- Six train operators to get Aventura electric trains with contactless doors, plastic visors, removable options for tables and non face-to-face seating.
- Voxly Digital: 1 out of 2 British people use voice assistants more since being home because of COVID-19.

US

- United Airlines introduced touchless kiosks for baggage check-in with dedicated app.

South Korea

- Seoul Metro has managed to quickly recover its pre-COVID-19 ridership levels, due to decreasing touch points, increasing emphasis on sanitation, and effective communications to build trust.

4. Virtual Presence

The rise of virtual presence will be accelerated by COVID-19, this has been proven during the pandemic, where there has been a deep shift in the mindset of people, who have been able to work successfully from home. Multiple signals are showing that many workers have gotten used to the new way of life. A survey conducted among working adults in the USA about their preferred work setup if COVID-19 was no longer a concern revealed that 38% of respondents indicated they would opt for a mix of working from home and working at the office. 26% said they wanted to work from home and 27% said they wanted to work from the office (source: HuffPost/YouGov).

A shift to virtual presence has wide-ranging implications in terms of cost efficiencies to businesses, such as office space and removing commuting time for greater efficiency. In the long run, telework could save firms up to \$11,000 per employee per year, when considering cutting the costs of renting, heating and furnishing an office.

We estimate that there will be a long-lasting shift in the way people perceive working for home, and this will have an important impact on mobility. First and foremost, there will be a reduction in the number of people that commute to work, therefore easing the demand on public transport during peak hours. Second, social interactions, large gatherings, sporting events and overall entertainment will become increasingly virtual, naturally reducing the demand for transport. This may have long lasting effects as people start changing habits and adopt new virtual interactions.

Virtual presence Trend Summary



Short-term: The trend will accelerate



Medium-term: The trend will accelerate



Impact on cities: A changing landscape with different patterns of mobility



Impact on public transport authorities and operators: Decrease in revenues (in the short-term), reduction in passengers/riders and lower demand peaks

What the experts say:

“Due to an increase in remote working trends, there will definitely be long-term changes with a reduction of at least 10-15% in public transport commuters. Transport operators will need to look to newer revenue sources to compensate for lost revenues”.

Timothy Papandreou

Former Chief Innovation Officer San Francisco MTA,
Founder of Emerging Transport Advisors.

“New trends such as working from home will smooth the peak load”.

Anne-Marie Idrac

Former RATP CEO and Former French Secretary of State for Transport,
Current Senior Advisor at Sia Partners.

“As remote working becomes a more common practice, video conferencing companies could potentially become competitors to transport operators”.

Rahul Razdan

Senior Director, Special Projects (AV) at Florida Polytechnic University and Forbes Guest Author.

Signal Scanner

Accelerating



Canada

Shopify, a Canadian e-commerce giant, offered their employees to work from home indefinitely.

Switzerland

Doodle reported a 42% increase in the number of virtual meetings created by its users.

US

- Zoom reported +300M daily meeting participants (April, 23rd) versus 10M in December.
- Twitter gave the option for employees to work from home indefinitely.
- Same for Facebook, where up to half of employees are to work remotely in the next 5 to 10 years.
- Steam, the largest online gaming platform (95 million monthly users) reported that the number of monthly connected VR headsets has been following an exponential growth trend since 2016, reaching nearly to 2 million devices.

France

PSA announced a “new era of agility” in which its non-production staff will work remotely from now on.

5. Sustainable Living



There has been a silver lining to the COVID-19 pandemic, and that is that it has created a “green awakening” for a large number of governments and citizens around the world. The lock down has driven down consumption of non-essential goods, as well as global carbon emissions. Our research indicates a decrease of 58% in carbon emissions in the EU per day of lockdown. Evidently there is a growing sustainable living trend stemming from the pandemic, which could help build the case for cities with less cars, more public transportation and stronger green energy agendas. Several European cities such as London, Milan, etc. have used lockdown as an opportunity to push greener initiatives by establishing several car-free zones in the city and making the city more friendly for pedestrians and cyclists. However, this change maybe temporary, as it will be very difficult to continue enforcing these initiatives once the economy is up and running.

In addition, forty years of globalization and urbanization being two of the world’s biggest driving forces are currently under threat, as countries following the pandemic could become more insular, and the remote working revolution allows for workers to move out of crowded and densely populated cities to the suburbs for larger living spaces.

Similarly, de-globalization could deaccelerate the attractiveness of mega-cities, and the reduction of global tourist flows would decrease the demand for public transportation.

Sustainable Living Trend Summary



Short-term: The trend will accelerate



Medium-term: Not foreseeable as there are not enough signals at this stage



Impact on cities: Green agendas gaining momentum. Decrease in tourism flows



Impact on public transport authorities and operators: Changing patterns of passengers. Momentum to embrace sustainability

What the experts say:

“Although, there are several challenges with localizing manufacturing, we believe that is the sustainable way forward”.

Avinash Rugoobur

President at Arrival.

“NSW has committed more than \$400M to develop pedestrian and cycling infrastructure in the next 4 years”.

Jon Lamonte

Chief Executive of Sydney Metro.

“It’s quite likely that private ownership of cars will increase as people continue to have safety concerns. Governments need to ensure that policies are put in place to avoid traffic congestions”.

Radcliffe Dacanay

Principal Planner at Seattle Department of Transportation.

“The biggest impact on mobility will be the economic fallout of the pandemic”.

Sven A. Beiker

Managing Director of Silicon Valley Mobility.

Signal Scanner

Accelerating

UK

Mayor of London and Transport for London (TfL) have announced plans to transform an area of the city into one of the largest car-free zones in the world.

Norway

Oslo has made its downtown car-free with an exception made for paramedics, delivery drivers and some taxis. By removing all unnecessary journeys since 2017, 90% of car journeys have been reduced.

Canada

Vancouver announced a transformation of streets into car-free spaces and 'slow streets' for pedestrians and micro-mobility.

Japan

Earmarking 220 billion yen of its record economic stimulus package to help its manufacturers shift production out of China.

Sweden

Following the Flygskam (Flight Shaming) movement, nearly one out of every five Swedes opted for the train instead of the plane last year. This resulted in an 8% decrease in the number of travelers through the country's airports.

US

66% of tech/finance professionals based in San Francisco, New York, and Seattle would consider relocating if there is a permanent remote working option (source: Blind).

Italy

- Milan has unveiled an ambitious plan to remake its streetscape to discourage car use and make it easier for people to walk and cycle.
- Venice is shunning “mass tourism” for “slow tourism”.

Decelerating

China

Non-car owners have higher intentions to acquire new cars, due to a lack of trust in public transportation. (source: Ipsos survey)

Conclusion

Transportation Trends	Short-term Impact	Medium-term Impact	Conclusion
Personal Micro and Mini Mobility Cycling / E-Scooters / Mopeds / Nano-vehicles	↑	↑	<ul style="list-style-type: none"> The rise of personal mobility will be accelerated by COVID-19 for users using their own assets. For sharing solutions, there will be a temporary deceleration. Given the low levels of investment required and flexibility of these solutions, it is easier for cities to rapidly repurpose streets and public spaces to expand their capacity.
Autonomous, Connected, Electric Shared Vehicles Autonomous & Connected Vehicles	=	=	<ul style="list-style-type: none"> AVs are a long-term trend, which should continue its regular course. In the short-term, the largest sub-trend identified in AVs is the demand for “moving things” rather than people, with the most immediate use cases in last mile delivery. In the medium-term, use cases of autonomous shuttles for passengers from point to point seem highly feasible.
Electric Vehicles	=	↑	<ul style="list-style-type: none"> COVID-19 will have a positive impact in shaping consumer behaviors, raising their “sustainable mindset.” In parallel, we can expect more EV friendly policies in pro-electrification countries. All factors accounted for, COVID-19 should have a moderate accelerative effect on this trend, although constrained by local policies, incentives and geographical considerations. Adoption will be highly related to local consumers realizing potential savings of buying a car (thanks to local incentives and a decrease in total cost of ownership).
Car / Ride-sharing	↓	↑	<ul style="list-style-type: none"> The impact of COVID-19 on this trend in the short-term is significant, as volumes of users of ride-hailing and car-sharing services have fallen across the world. In this case, trust is the main factor, and as long as trust starts increasing among the users, the trend may recover. The large pressures on this trend in the medium and long term come from two fundamental factors, the resilience of the business model of the aggregators as well as the regulatory aspects. All experts consulted and the research analyzed points towards a short-term deceleration followed by a smooth rebound, maintaining the trend in the medium-term.
Integrated MaaS	=	↑	<ul style="list-style-type: none"> In the case of Mobility as a Service (MaaS), there are no indicators to either accelerate nor decelerate this trend. All experts in MaaS that in the long-term this is still the “future” of transportation.
Low-touch Economy Safety Based Operations & Advanced Operational Technologies	↑	↑	<ul style="list-style-type: none"> The Low-touch Economy will be accelerated by COVID-19 and will impact heavily public transportation. Recovering trust and confidence in passengers is an imperative.
Virtual Presence Remote Working & Virtual Reality	↑	↑	<ul style="list-style-type: none"> The rise of virtual presence has been accelerated by COVID-19 and many workers have gotten used to the new way of life. A shift to virtual presence has wide-ranging implications in terms of cost efficiencies to businesses, such as office space and removing commuting time for greater efficiency.
Sustainable Living Car-free Cities / Deglobalization / De-urbanization	↑	<small>There are not enough signals at this stage to determine long term impacts on these trends</small>	<ul style="list-style-type: none"> The rise of sustainable living will be accelerated by COVID-19, with an impact on decelerating globalization and mega-urbanization. COVID-19 revealed the fragility of supply chains’ over-reliance on China, it could be expected that global firms will try to diversify their supply chains more, moving towards other manufacturing hubs.

Our trend analysis conducted via detailed interviews with experts, signal scanning, and expert research has indicated that COVID-19 will have impacts on mobility in two time horizons.

In the short-term, and most immediate impact, the need to accommodate social distancing (Virtual Presence and Personal Micro Mobility) and mitigate the spread of the disease (Low-touch Economy), which will take focus away from more longer term trends (Autonomous, Connected, Electric Vehicles), but enable others (Sustainable Living). In the medium-term horizon, we believe most of the transportation trends will see significant acceleration as society gets to grips with the ‘new normal’, however it is currently too early to tell if sustainable living measures are here to stay or are temporary fixes.

In the short-term, we have identified four immediate actions that we believe transport regulators and operators should focus on:

1. Prepare their operations for a low-touch economy.
2. Guaranteeing safety of employees and customers.
3. Clear communications on their actions in order to build back trust from users.
4. Plan their networks and capabilities to cope with a changing demand (i.e. remote working).

In addition, we believe that transport regulators and operators should keep analyzing these trends closely, as new business opportunities arise in areas such as:

- Autonomous vehicles, focusing on transportation of things rather than people.
- Technologies that facilitate a low-touch economy.
- Sustainable initiatives, including reshaping mobility towards a larger presence of EVs, and an increase in personal mobility.
- An increased share of mobility as a service (MaaS).

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