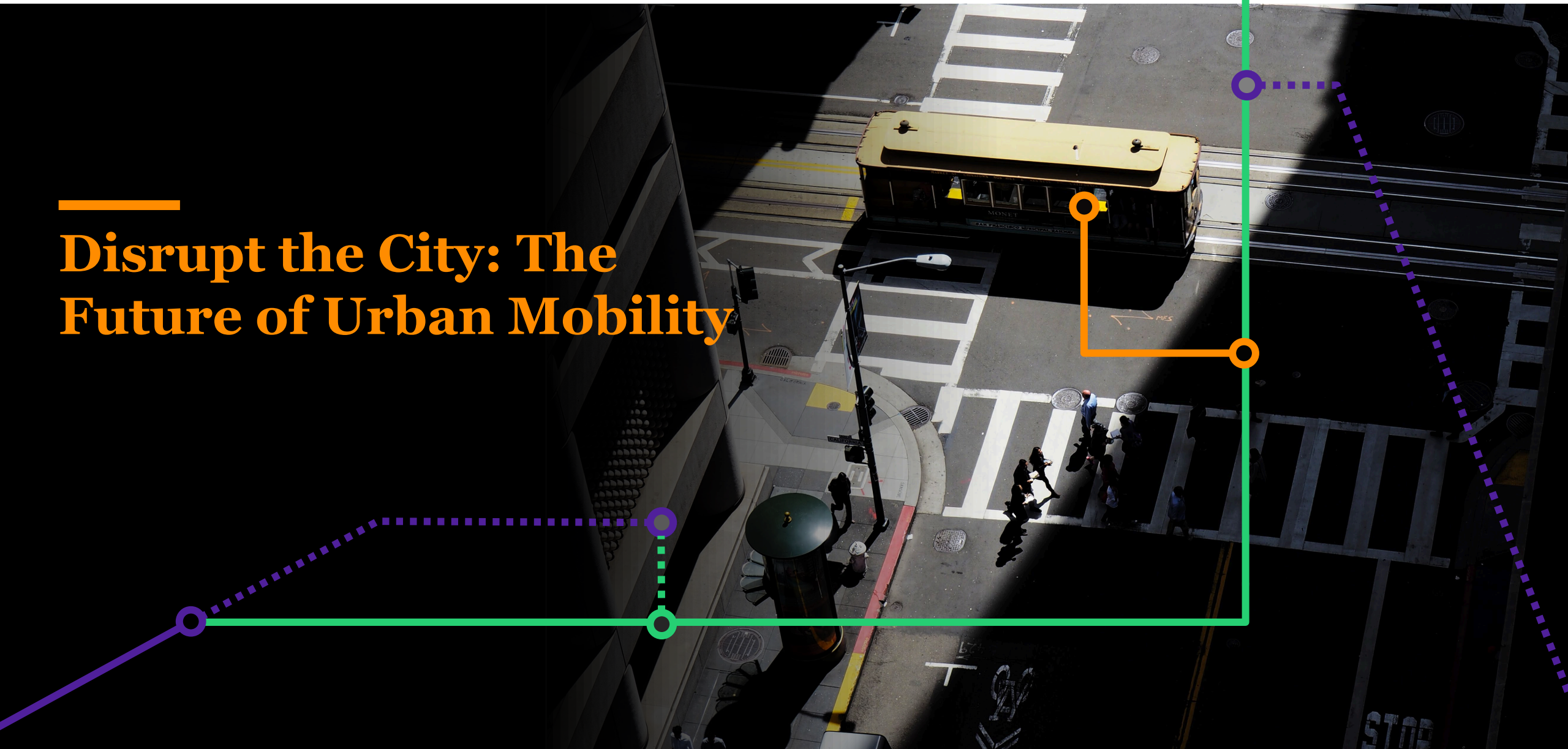
OLIVER WYMAN

# Disrupt the City: The Future of Urban Mobility



# Key Theses

**One**

Accelerated adoption of **mobility substitutes** driven by COVID 19

**Two**

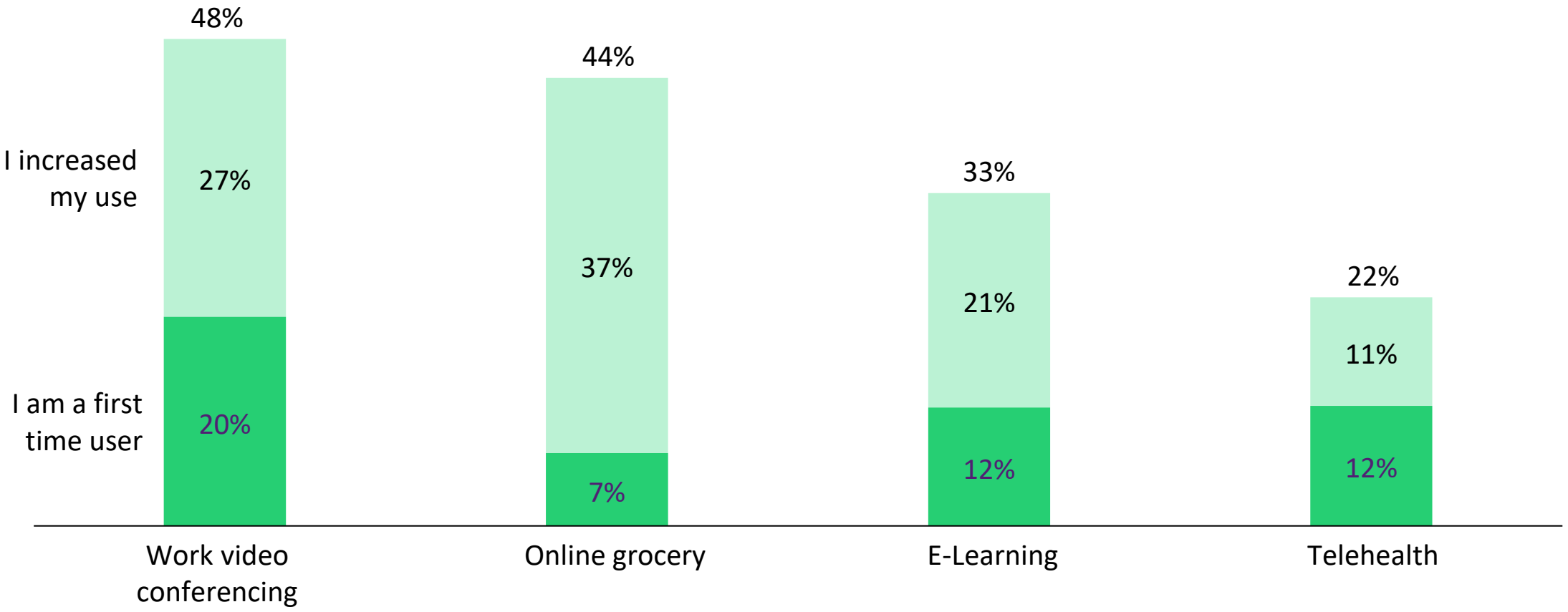
Uncertainty about the future of mobility leads to **6 scenarios for the future**

**Three**

**The stakes are high** – differences between scenarios have major implications for society, the environment and business

# COVID-19 has accelerated the adoption of digital substitutes for mobility

How has the COVID-19 pandemic impacted how much you use the following technologies?




Source: Oliver Wyman Forum COVID-19 Survey, n=6686

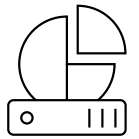
# Three reasons why behaviors might endure

**Behaviors that endure because of economic fallout**

- Consumers are not able to afford pre-crisis alternatives
- Businesses shutter due to financial instability or regulatory changes

**Behaviors that endure because of risk perceptions**

- Consumers and businesses change behaviors to avoid virus transmission
- Expectations for traditional mobility are higher

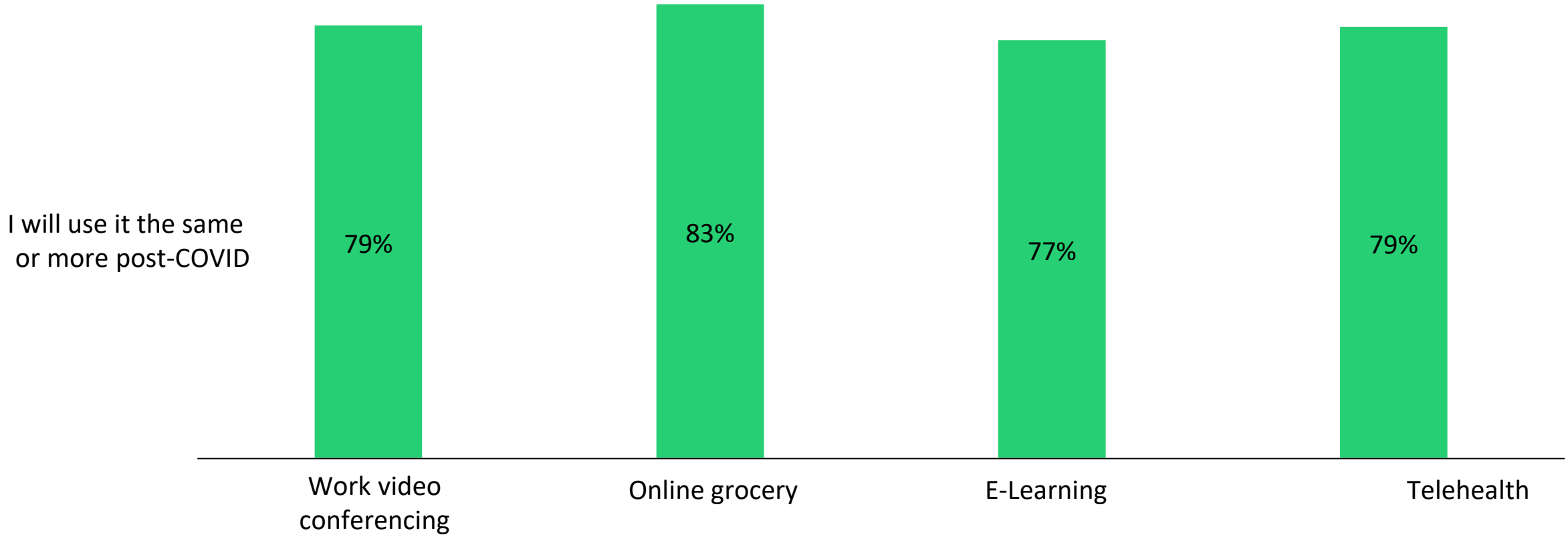


**Behaviors that endure because of accelerated tech adoption**

- Switching costs were the biggest barrier to adoption pre-COVID
- New solutions are better, faster or cheaper

# Most respondents say they will continue to use mobility substitutes post-COVID

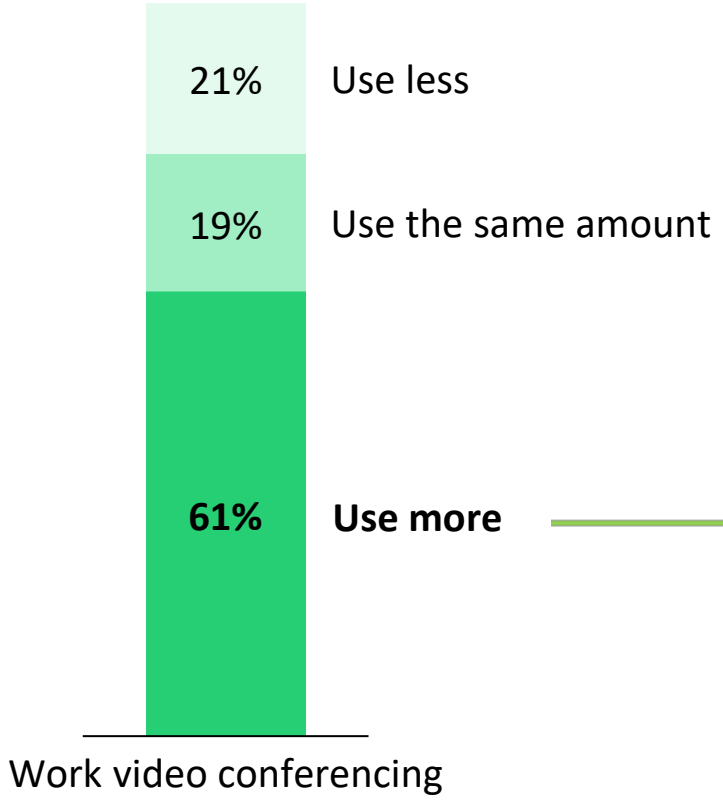
How frequently will you use these technologies once stay-at-home orders end?



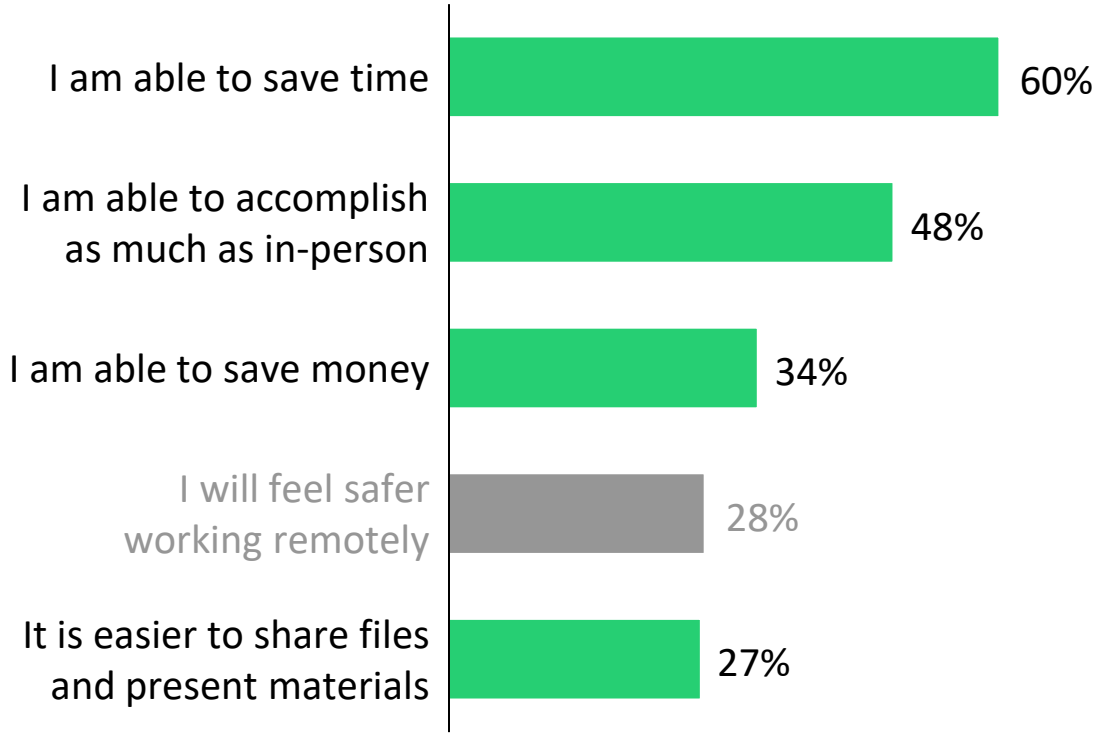

Source: Oliver Wyman Forum COVID-19 Survey, n=6686

# Mobility substitutes will endure as they provide a faster, cheaper, and effective alternative to in-person interaction

**Work video conferencing:** How much will you use once stay-at-home orders end?




**This group plans to increase use because they can accomplish as much in the same or less time**




Source: Oliver Wyman Forum COVID-19 Survey, n=6686

# We interviewed 30+ mobility professionals to better understand the future of mobility

## Trends – areas of agreement

Everything will become more:

- Connected
- Electric
- Autonomous
- Managed by Digital Mobility Services

## Uncertainties – areas of disagreement/less sure

- **How fast will new technologies develop and be adopted?**
- **What business models** will prevail; who will build, own, and operate future transportation systems?
- **What are the interactions among the different technologies?**

# We envision six possible scenarios for urban mobility over the next decade

Scenario 1:
**Baseline**

Scenario 2:
**EV Grows/ AV Stalls**

Scenario 3:
**Independent DMS**

Scenario 4:
**Private Autonomy**

Scenario 5:
**Autonomous MaaS**

Scenario 6:
**Multimodal MaaS Network**

*More rapid adoption of new technology and business models*

# What's at stake – shifting trends in Mobility & uncertainties about adoption create large differences in future macro-level outcomes

| **Range of scenario outcomes over 10 years** (2020-2030, Global) | | **Causes/Factors** |
|---|---|---|
| **25 Trillion** | Fewer kilometers driven by ICE vehicles | • More public transportation and multi-modal options reduces dependence on personal cars<br>• EV's capture some market share from ICE vehicles |
| **6.2 Billion** | Metric tons of $CO_2$ could be conserved | • Growth of EVs creates additional demand for electrical power |
| **610 Billion** | Kilowatt-hours could be needed | • Reduced dependence on personal vehicles and electrification combine to lower net emissions |
| **260,000** | Lives saved from avoided motor vehicle accidents | • Autonomy drives a reduction in deaths and accidents per mile driven |
| **3,500** | Fewer organ donations may be available | • Fewer deaths from motor vehicle accidents reduces the supply of organ donations |

Source: Oliver Wyman Forum Future Mobility Scenarios analysis

# What's at stake: Tailpipe emissions

The uncertainty in EV adoption creates a wide range of possible environmental outcomes

**Independent DMS:**
Less efficient, disjointed network results in increased driving and slower shift to more efficient transportation modes

**Multimodal MaaS Network:**
Hyper-efficient network uses low-emission EVs, public transit, and micromobility

**6.2 Billion**

Metric tons of $CO_2$ could be conserved

Or, **14 months** worth of US carbon emissions

Sources: Oliver Wyman Forum Future Mobility Scenarios analysis; U.S. Energy Information Administration

# Scenario outcomes will differ by geography

## Singapore

*Mobility Index score = 74.1*

- Centralized government pushes top-down agenda
- Best-in-class for pioneering innovations and collaborative initiatives

**Multimodal MaaS Network**

## Amsterdam

*Mobility Index score = 72.4*

- Highest public transport density of all indexed cities
- Large-scale, smart-city initiative encouraged investment in local mobility industry

**Autonomous MaaS**

## San Francisco

*Mobility Index score = 70.7*

- Global hub for MaaS services with many competing tech players[1]
- Limited access to public transport results in a high rate of private car use

**Private autonomy**

## Cairo

*Mobility Index score = 35.7*

- Laggard in preparedness for mobility transformation
- High pollution from a lack of clean air technologies and residents have limited access to metro stations

**Independent DMS**

1. MaaS = Mobility as a Service; integration of various transport services into a single mobility service accessible on demand

# Parting Thoughts

**Accelerated adoption of mobility substitutes** due to COVID-19 are likely here to stay – and will have a lasting impact on primary demand for mobility

**There is a lot at stake** – technology changes across five areas are reshaping mobility and have the potential for large impacts on society and across major industries

**None of these scenarios are set in stone** and we don't view any as 'most likely' – we have the opportunity to shape and prepare for these potential futures