



Transportation trends 2022

ITS-verkostopäivä 18.8.2022

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Autamme laajalla osaamisellamme rakentamaan toimivampaa yhteiskuntaa

Deloitte on maailman suurin yksityinen asiantuntija-palveluorganisaatio.

Tarjoamme julkiselle sektorille laaja-alaista palvelua konsultointiin, riskienhallintaan, tilintarkastukseen, verotukseen ja yritysjärjestelyihin liittyvissä kysymyksissä.

Asiantuntijoita
Suomessa 700,
maailmanlaajuisesti
345 000

Teemme julkishallinnon
toimialalla tiivistä
kansainvälistä yhteistyötä.

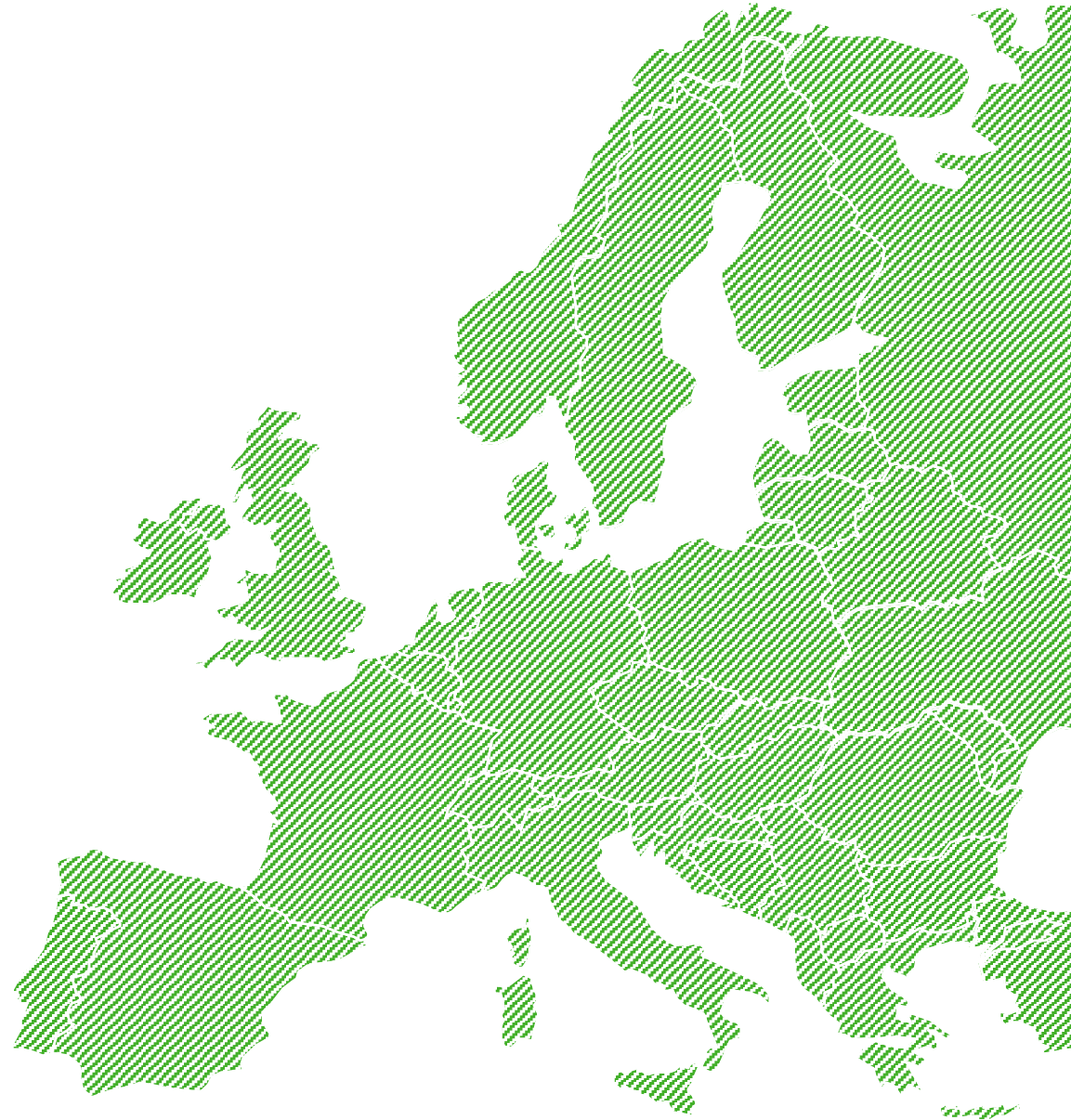
Liikevaihto
Suomessa 102,5 M€,
maailmanlaajuisesti
\$50,2 B\$.

Haluamme olla mukana
rakentamassa toimivampaa
yhteiskuntaa. Julkishallinto
on suurimpia toimialojamme.

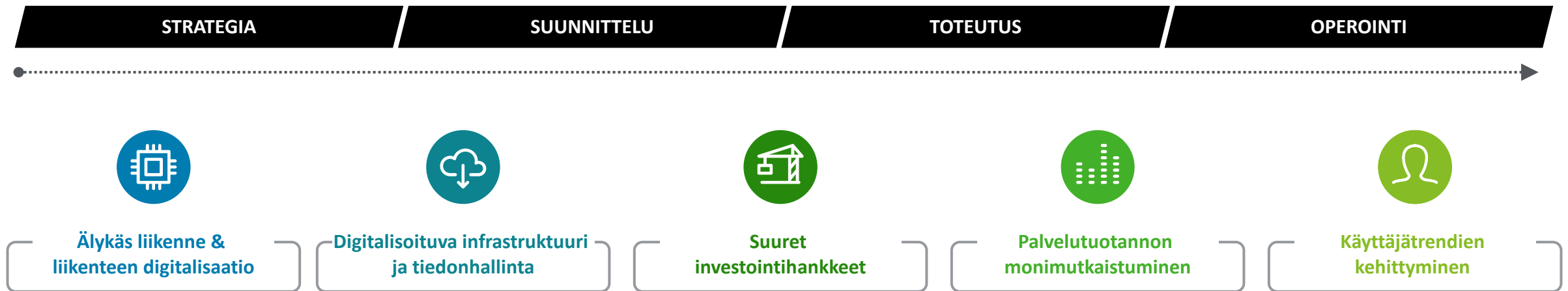
Konsultointi
Riskienhallinta
Tilintarkastus
Verotus
Yritysjärjestelyt

Toimistot
Helsingissä,
Tampereella ja
Turussa, toimintaa
150 maassa

Toimimme paikallisesti,
hyödyntäen vahvasti
kansainvälistä osaamistamme.



Toimintaympäristön trendejä liikennesektorilla



Transportation trends 2022



1. Transportation
funding/finance:
More and's, fewer or's



2. Inclusive and
equitable
transportation
systems



3. Transportation
electrification and
the rise of EVs



4. Digital
modernization and
customer
experience



5. Secure and
resilient
transportation
infrastructure

1. Transportation funding/finance

More and's, fewer or's

Transportation agencies face significant challenges to their traditional gas tax based funding model.

Agencies are exploring a broad set of solutions

Solutions like MBUF or road user charging, EV taxes, carbon tax, and land value capture.

The central challenge is no longer technological

It rather comes down to addressing data governance and the administrative burden associated with new models.



2. Inclusive and equitable transportation systems

Transportation is key to accessing opportunities e.g. in employment, education, health care, recreation

Governments are focusing on providing equal access to high-quality, reliable, and safe transportation options for all.

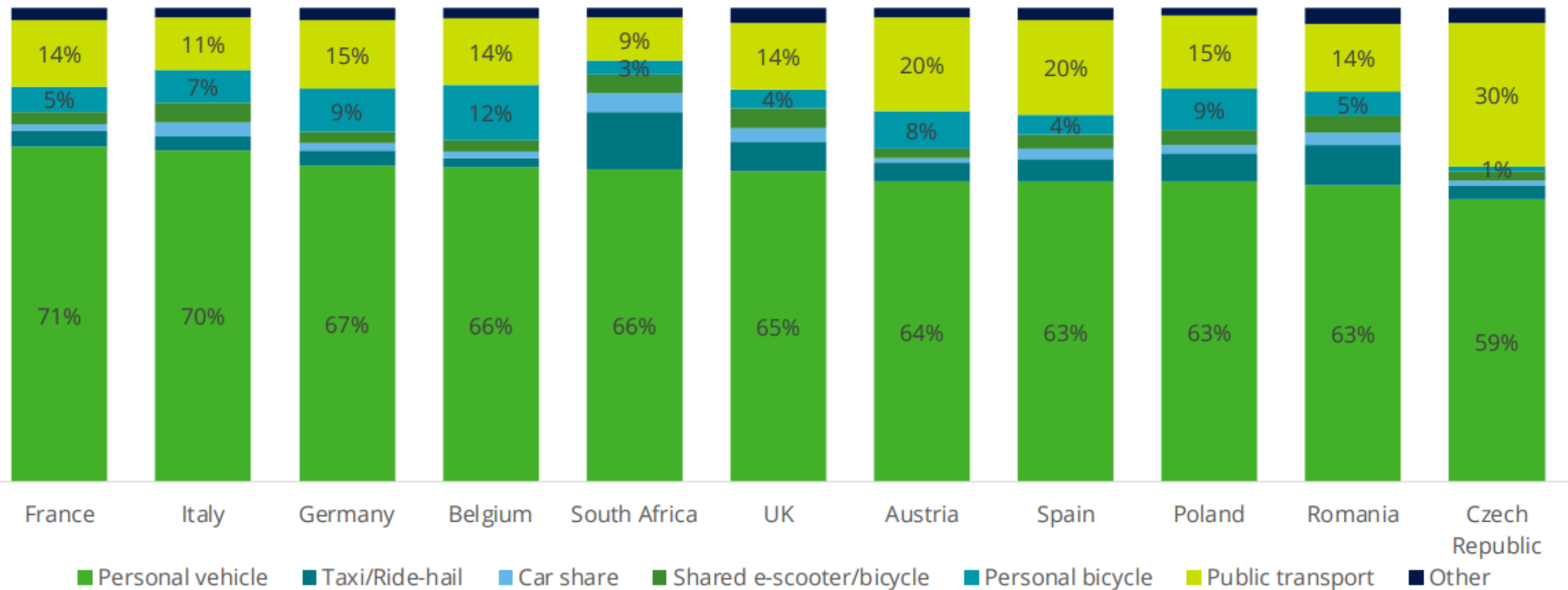
This will hinge on restoring transit ridership levels back to pre-pandemic levels.



Most consumers plan to use their own personal vehicles to get around.

In some markets, up to a fifth of mobility needs will be met by public transport.

Going forward, what percentage of your mobility needs will be addressed by each of the following types of transportation?



3. Transportation electrification and the rise of EVs

The move to electric is a massive technological and cultural transformation.

There is a broader effort to build the EV ecosystem

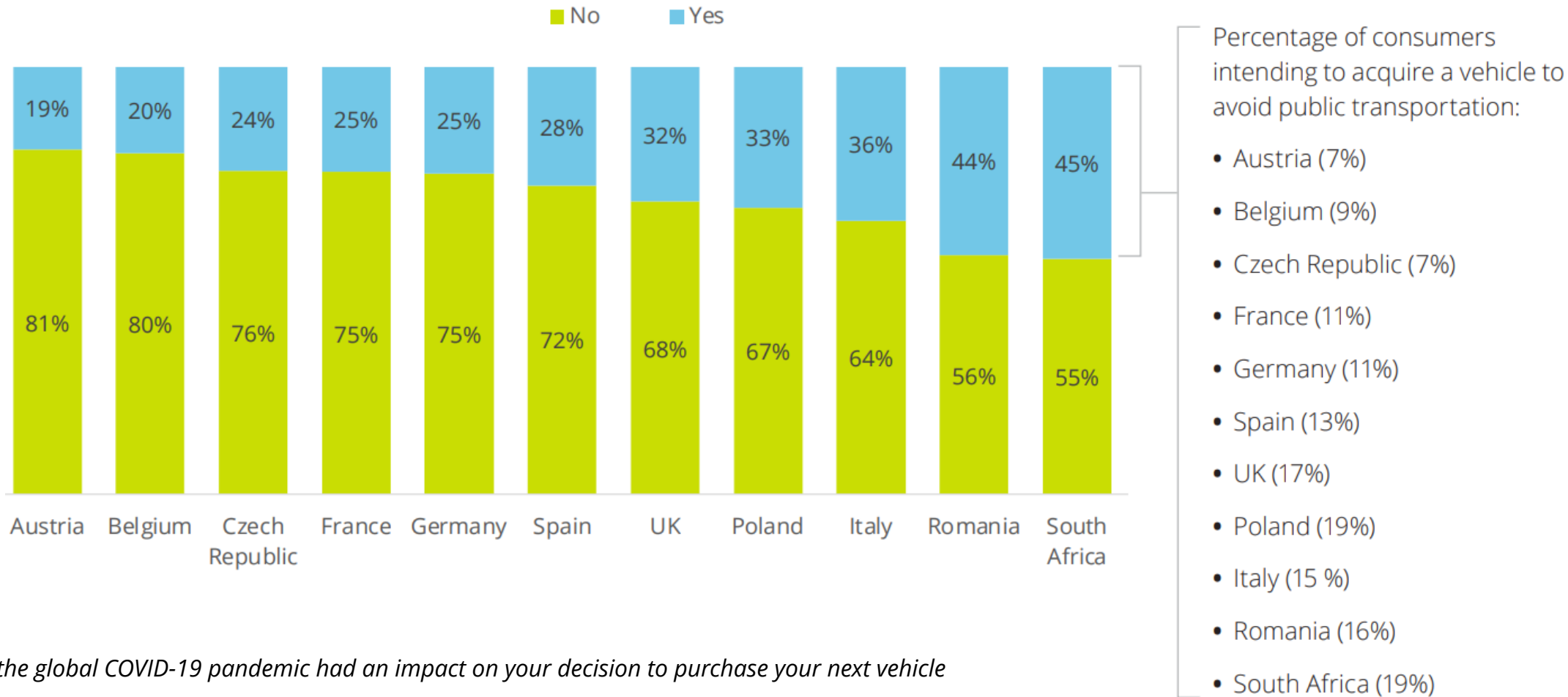
This includes charging infrastructure, workforce education and training, shift in agency and customer culture, and addressing electric battery supply chain concerns.

The transition to EV goes beyond EV vehicles and charging infrastructure

A whole ecosystem needs to be built around that including battery manufacturing capacity, investing in new battery technology, EV OEM ecosystem, maintenance infrastructure, workforce training, smart charging, and more.



COVID-19 has had a noticeable impact on consumers plans to purchase their next vehicle.
The desire to avoid public transportation has been a key consideration in some consumers decision making process.



Has the global COVID-19 pandemic had an impact on your decision to purchase your next vehicle

Consumer's vehicle demand has likely never been more difficult to predict than now
In US the market is following a slightly negative trajectory

FIGURE 1

The Vehicle Purchase Intent (VPI) Index for the United States has remained relatively flat over the past nine months



Source: Deloitte Global State of the Consumer Tracker Study (October 27, 2021 = 100).

Kysynnän muutosdriverit

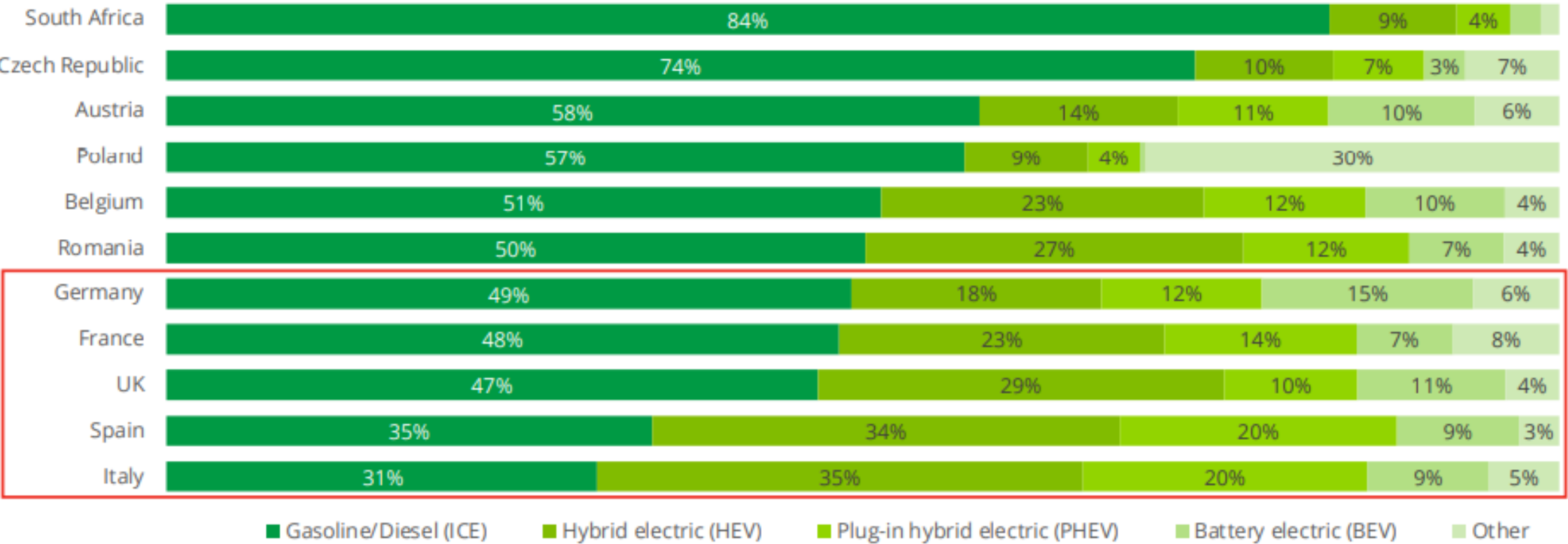
- ↑ Terveysyyt (covid)
- ↑ Kuluttajien ympäristötietoisuus
- ↑ Polttoaineen hinta
- ↑ Operatiiviset kustannukset
- ↑ OEMs omat päästötavoitteet
- ↓ Pitkät toimitusajat
- ↓ Ajoneuvojen kallistuneet hinnat (OVH + alennukset)
- ↓ Inflaatio jarruttaa kuluttajien suuria hankintoja
- ↓ "Paluu uuteen normaaliin"

Vehicle Purchase Intent (VPI) Index, a forward-looking measure designed to track the percentage of people who intend to acquire a vehicle in the next six months.

Consumers continue to make a gradual shift towards alternative powertrains.

Across five of the largest car markets in the region, the number of consumers intending to buy an ICE as their next vehicle has dipped below 50%

What type of engine would you prefer in your next vehicle?



People are drawn to an EV because of an expectation of lower fuel costs, or a concern about climate change.

Please rank the following factors in terms of their impact on your decision to acquire an electrified vehicle (highest to lowest).

Factors	Austria	Belgium	Czech Republic	France	Germany	Italy	Poland	Romania	South Africa	Spain	UK
Concern about climate change/ reduced emissions	1	2	2	2	1	1	2	2	1	1	1
Lower fuel costs	2	1	1	1	2	2	1	1	2	2	2
Concern about personal health	3	4	6	4	4	3	3	3	3	3	3
Less maintenance	6	5	4	5	7	6	6	6	5	5	5
Better driving experience	7	6	3	6	5	5	4	5	4	4	4
Government incentives / stimulus programs	4	7	6	3	3	4	7	4	7	6	7
Potential for extra taxes/levies applied to internal combustion vehicles	5	3	5	7	6	7	5	7	6	7	6

 Top three factors

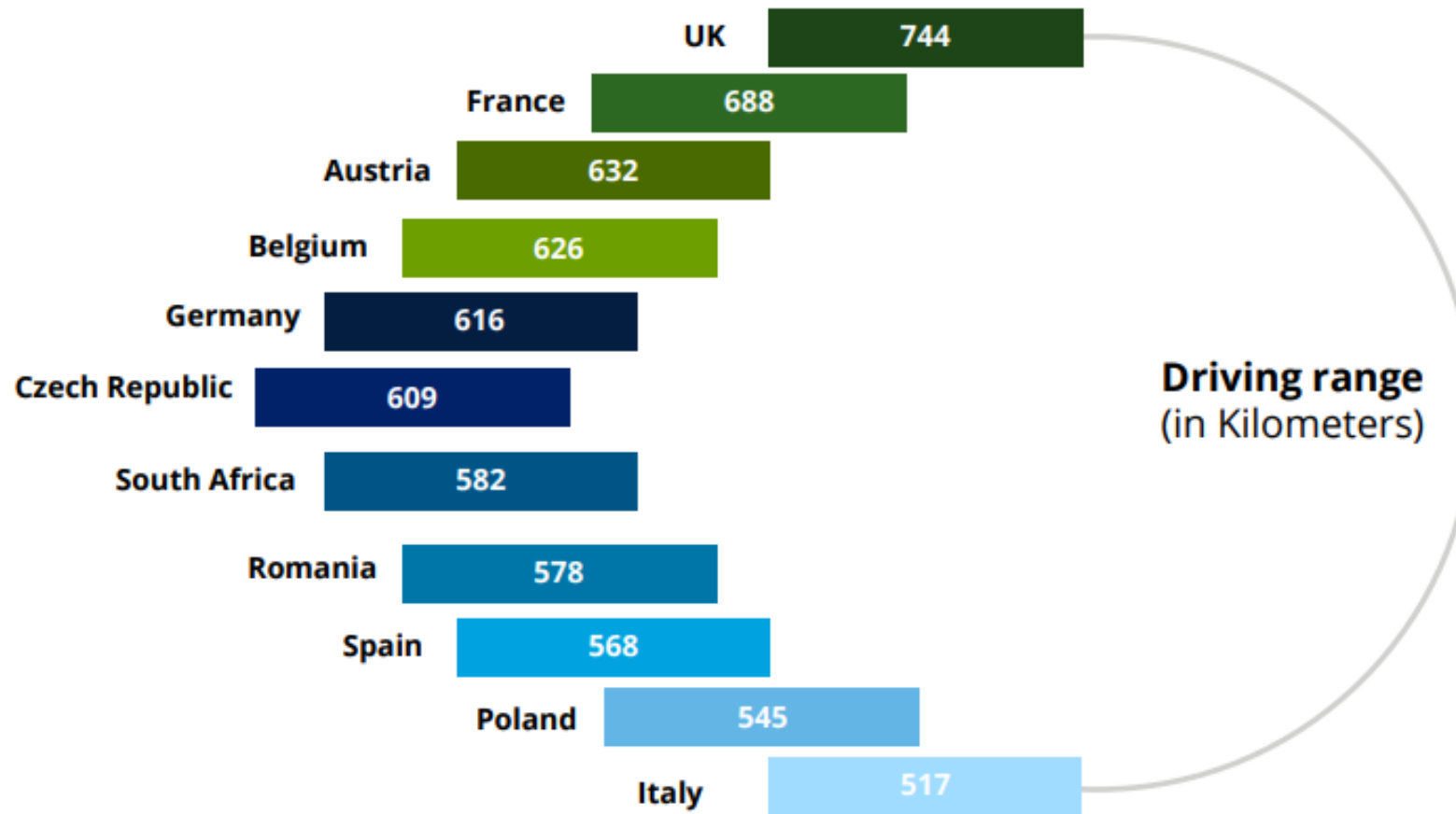
Biggest concerns not to buy an EV as their next vehicle are range anxiety and a lack of public charging infrastructure

Factors	Austria	Belgium	Czech Republic	France	Germany	Italy	Poland	Romania	South Africa	Spain	UK
Driving range	21%	21%	10%	25%	24%	22%	22%	16%	12%	21%	21%
Cost/price premium	13%	25%	10%	18%	12%	12%	16%	15%	10%	17%	18%
Uncertain resale value	3%	2%	3%	3%	2%	3%	2%	1%	4%	2%	2%
Potential for extra taxes/levies associated with BEVs	1%	3%	2%	2%	2%	3%	3%	2%	2%	3%	4%
Time required to charge	8%	8%	13%	10%	9%	11%	9%	12%	9%	11%	9%
Lack of public electric vehicle charging infrastructure	9%	11%	19%	12%	14%	19%	21%	23%	30%	18%	14%
Lack of charger at home	9%	8%	5%	8%	10%	10%	9%	8%	5%	9%	11%
Lack of alternate power source (e.g., solar) at home	4%	4%	6%	3%	4%	3%	3%	4%	7%	5%	3%
Safety concerns with battery technology	6%	4%	8%	4%	8%	5%	3%	4%	6%	5%	5%
Lack of sustainability (i.e., battery manufacturing/recycling)	20%	6%	12%	9%	10%	7%	5%	7%	6%	5%	6%
Lack of choice	1%	1%	2%	2%	3%	2%	1%	2%	2%	1%	3%

 Greatest concern

What is your greatest concern regarding all battery-powered electric vehicles?

ICE drivers would require EVs to have significantly improved driving range before they considered purchasing one.



Consumers would most prefer a subscription service that focuses on convenience, flexibility, and availability of vehicles.

Top three most important characteristics of a vehicle subscription

Top three most important characteristics of a vehicle subscription

Factors	Austria	Belgium	Czech Republic	France	Germany	Italy	Poland	Romania	South Africa	Spain	UK
Convenience (e.g., all relevant services included, except for fuel)	1	1	1	1	1	1	1	1	1	1	1
Increased flexibility (e.g., shorter contract durations)	4	3	4	5	2	3	4	4	2	3	2
Possibility to exchange vehicles	6	4	2	3	5	2	2	3	3	4	3
Possibility to subscribe to a vehicle segment (e.g., SUVs) instead of a specific model	10	8	11	10	9	8	8	7	8	8	8
Possibility to subscribe to a specific model instead of a vehicle segment	12	9	10	13	10	10	11	9	13	10	10
Availability of vehicles (e.g., short delivery times)	2	2	3	2	3	4	3	5	6	2	4
Home delivery services (e.g., vehicle is dropped off and picked up at desired location)	8	7	6	7	6	6	7	8	9	6	6
Hassle-free online contract closing/ full digital customer journey	9	12	9	9	8	13	10	14	11	13	12
Full cost control due to transparent and predictable fixed monthly fees (e.g., no surprises via all-in offers)	3	5	7	4	4	5	6	6	5	5	5
Availability of complementary premium services (e.g., concierge services, valet parking)	14	14	14	14	14	11	14	13	14	14	14
Premium vehicles / brands offered	11	10	13	11	12	14	12	10	10	11	11
Selection of only brand-new vehicles (for a comparable higher monthly rate)	13	13	12	12	13	12	13	12	12	12	13
Selection of brand new as well as certified pre-owned vehicles (for a comparable lower monthly rate)	7	11	8	8	11	9	9	11	7	9	9
Possibility to test new vehicles for a certain period without consequences	5	6	5	6	7	7	5	2	4	7	7

Top 2 most important

Source: Deloitte 2022 Global Automotive Consumer Study

The majority of consumers are willing to share personal data in exchange for an improved driving experience.

Consumers are most interested in updates related to congestion, safety or vehicle health.

How interested are you in the following benefits of a connected vehicle if it meant sharing your own personal data and vehicle/operational data with the manufacturer or a third party?

Interest (somewhat/very interested) in a connected vehicle if it provides benefits related to...	Austria	Belgium	Czech Republic	France	Germany	Italy	Poland	Romania	South Africa	Spain	UK
Updates regarding traffic congestion and suggested alternate routes	57%	61%	57%	60%	55%	63%	56%	68%	79%	62%	62%
Suggestions regarding safer routes (i.e., avoid unpaved roads)	40%	47%	44%	45%	41%	61%	51%	66%	76%	59%	51%
Updates to improve road safety and prevent potential collisions	53%	60%	50%	59%	51%	71%	61%	74%	81%	69%	57%
Customized/optimized vehicle insurance plan	38%	47%	35%	48%	38%	65%	46%	63%	72%	58%	51%
Maintenance updates and vehicle health reporting	55%	60%	54%	59%	54%	66%	56%	71%	80%	69%	59%
Maintenance cost forecasts based on your driving habits	43%	54%	38%	57%	44%	61%	50%	65%	73%	60%	52%
Customized suggestions regarding ways to minimize service expenses	45%	53%	41%	52%	45%	62%	52%	64%	76%	56%	49%
Over-the-air vehicle software updates	52%	46%	41%	52%	53%	54%	53%	54%	62%	52%	48%
Access to nearby parking (i.e., availability, booking, and payment)	46%	43%	41%	44%	46%	56%	52%	66%	66%	58%	52%
Special offers regarding non-automotive products and services related to your journey or destination	21%	27%	19%	31%	29%	44%	35%	48%	57%	44%	41%
Receiving a discount for access to a Wi-Fi connection in your vehicle	30%	37%	33%	36%	35%	45%	44%	56%	70%	48%	46%

 Top three interests



4. Digital modernization and customer experience

The pandemic accelerated the rate of digital adoption in transportation agencies.

Agencies are focused on improving customer experience in a digital-first environment.

This means e.g back office modernization and self-service and digital payment innovations.

5. Secure and resilient transportation infrastructure

An expanding cyber threat landscape is inevitable due to the growing convergence, interoperability, and integration of physical and digital systems.

Increasing the resiliency of the transportation system goes beyond addressing new cyber vulnerabilities.

Transportation agencies must also ensure infrastructure is able to withstand the increasing frequency and severity of extreme weather events.



Growing connectivity in the transportation industry makes it vulnerable to cyberattacks. Hackers are increasingly targeting not only the business IT systems, but also the operational technology (OT) and traffic control systems

Economic and international trends encourage actors to act on vulnerabilities.

- Cybersecurity threats can impact both the internal and external operations of transportation companies and service providers.

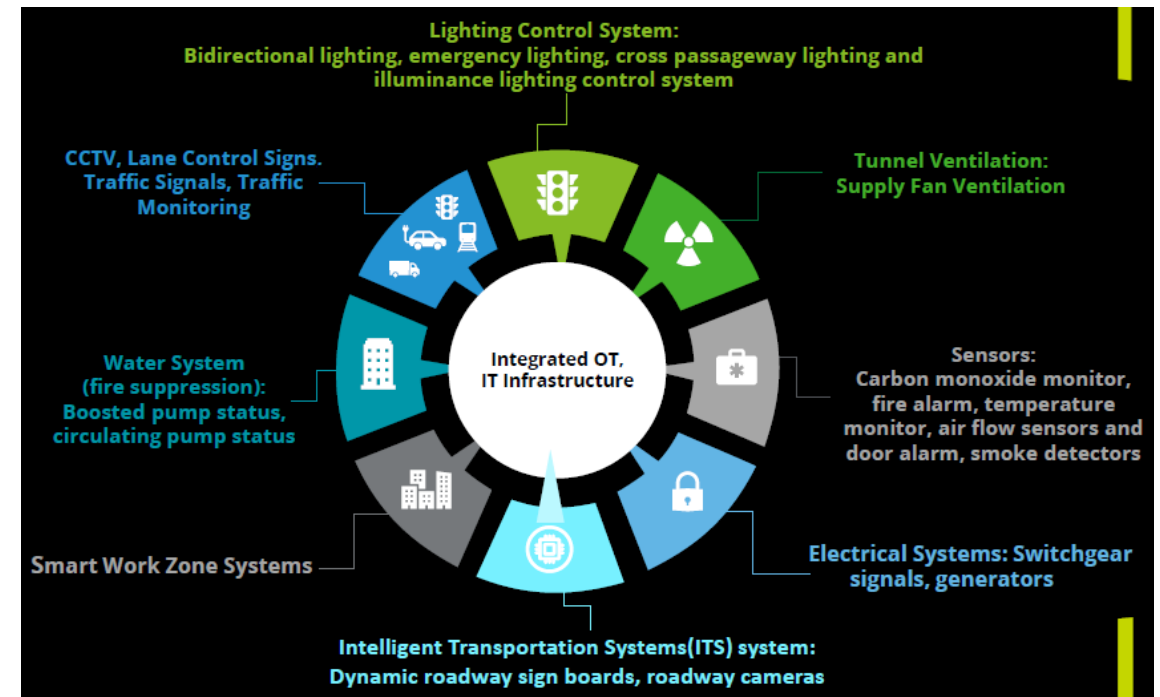
False feeling of security?

- Transit agency technology leaders feels prepared for a cybersecurity threat, *yet only 60% have a cybersecurity program in place.*
- Many transit agencies do not have many of the basic policies or personnel in place to respond to a cyber incident
- Only 1/3 of agencies have a cyber crisis communications plan (*Mineta Transportation Institute (MTI)*)

Not only a technical but also a governance challenge

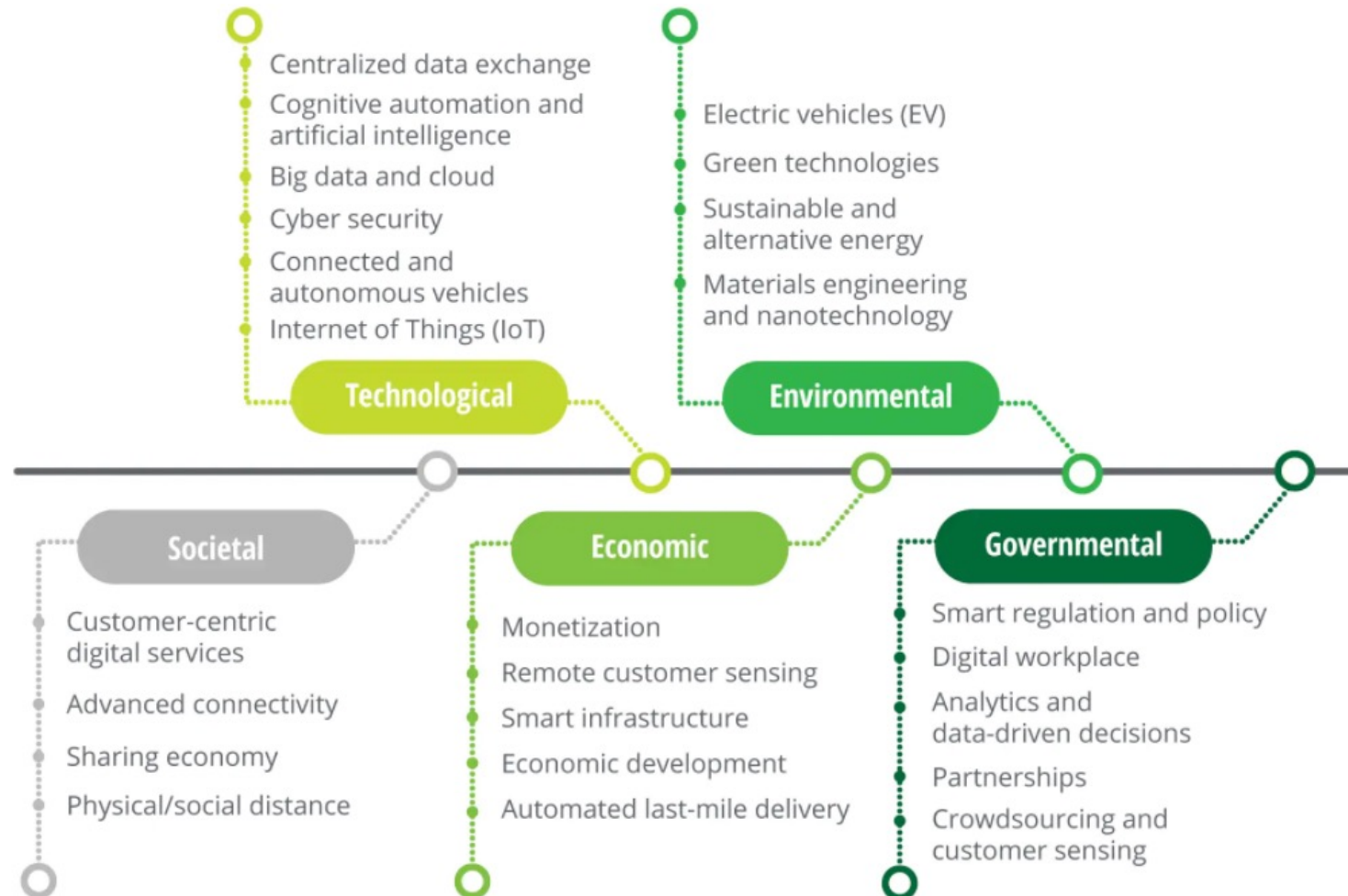
- Increasing number of physical-digital devices (critical systems end-points) makes protection difficult when the attack surface that must be defended is nearing infinity.
- Growing number of end-points also increases the human/organizational problem of having to collaborate with even more manufacturers, vendors, and contractors to maintain the security of all those systems.

Need for basic policies, skilled personnel, co-operation and shared insentives across the industry

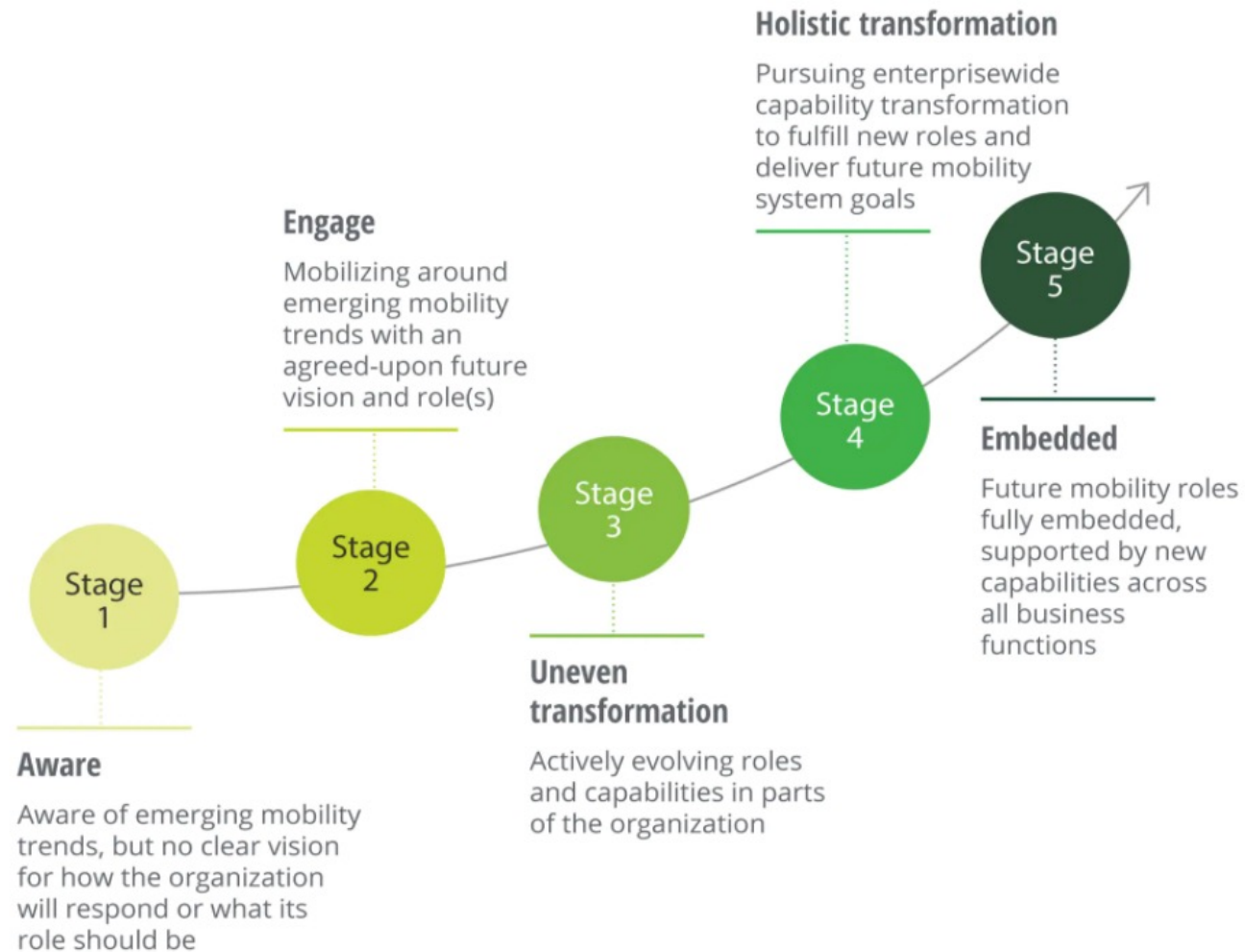


Transportation disruptors

Significant forces challenging transportation agencies to operate in new ways...



Are we ready to harness the future of mobility?



Further Reading

Reports

[Transportation trends in 2020 | Deloitte Insights](#)

[2022 Global Automotive Consumer Study | Deloitte](#)

[Improving the cybersecurity of critical infrastructure | Deloitte Insights](#)

[The future of transportation agencies | Deloitte Insights](#)

[Toward a mobility operating system for urban transportation | Deloitte Insights](#)

[Micromobility with e-bikes | Deloitte Insights](#)

Websites

[Infrastructure, Transport & Regional Government | Deloitte Global](#)

[Government and Public Services | Deloitte Insights](#)

[Transportation | Deloitte Insights](#)

