World Economic Forum’s Platform for Shaping the Future of Mobility: Sustainability is Boosting Private-Public Partnerships
01  Introducing the World Economic Forum
02  Shaping the Future of Mobility Platform
03  Global New Mobility Coalition
04  Businesses reorient around MaaS
What is the World Economic Forum and who is involved?

The World Economic Forum is the international organization for public-private cooperation. Our mission is to improve the state of the world.

Focused on **advancing change** for business and society, we provide a **global, independent, impartial** and **future-oriented** platform for the world’s leaders to come together to **shape the future**.

The Forum focuses on **multi-stakeholder cooperation**, bringing together leaders from business, government, civil society, academia and youth to **achieve impact together** that they could not achieve alone.

Stakeholders can also use the Forum as a platform to scale their own projects.
## Thematic Engagement With The Forum

### Our Platforms

| Platforms | Regions | Communities
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**Companies can tailor their Forum engagement based on their strategic priorities, across Platforms, Regions, Communities, and Knowledge.**

**Shaping the Future of...**

**Regions**

Shaping the regional agenda and addressing critical challenges

- Africa
- ASEAN
- China
- Europe and Eurasia
- Latin America
- Middle East and North Africa
- North America
- South Asia

**Communities**

Interconnected communities of peers

- Family Business Community
- Global Shapers
- Young
- Schwab Foundation for Global Entrepreneurship
- Technology Pioneers

**Knowledge**

- Strategic Intelligence

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Today’s mobility system cannot accommodate tomorrow’s mobility demand. A safe, clean and inclusive mobility future is possible by applying systems thinking to generate impact against key challenges.

- Safe and secure global travel
- Net zero emissions in transport
- Liveable communities with safe and equitable access to mobility and higher quality of life
- Sustainable and reliable global end-to-end mobility supply chains
- Access to global supply and aid for remote populations

Changing mindsets through thought leadership

Building cooperation through a multistakeholder community

Shifting agendas and norms through new policy proposals and partnership models

Catalysing tangible action
Platform For Shaping The Future of Mobility: Four Focus Areas

01

Automotive and Autonomous Mobility

Aerospace and Drones

Aviation, Travel and Tourism

Supply Chain and Transport
Automotive Industry Dynamics Are Shifting
A New Mobility Paradigm Emerged

**Product Focus:** the car

- Customer *owns* the vehicle

**Personal:** Customer uses vehicle alone or with family and friends

**Driven:** Customer drives the vehicle

**Market Economy:** Innovation in house with trusted supply base

**Mechanical engineers** rule

**Linear production**

**Volume:** Sell more cars and achieve economies of scale

**Service Focus:** the mobility experience

- Customer *uses* the vehicle

**Shared:** Customer shares vehicle with social network or strangers

**Autonomous:** Algorithms drive the vehicle

**Platform Economy:** Innovation ecosystem with dynamic partnerships

**Software engineers** rule

**Circular economy**

**Value:** Deliver targeted profitable mobility solutions for people
How can global automotive and technology leaders help reinvent mobility?

Shape the emerging business and regulatory environment concerning:

- Electrification and alternative powertrains
- Automated technologies
- Connectivity
- Shift to MaaS

Demonstrate their commitment to clean, safe, and inclusive mobility while:

- Mastering industry disruptions driven by the Fourth Industrial Revolution
Preparing for AVs: Cities and Nations

Goal
Co-design policy frameworks for sustainable AV rollout.

Impact
The co-design of policy frameworks ahead of AV commercialisation will:

1. Forge coherent digital, infrastructure, and regulatory mobility systems readiness for maximising the societal, environmental and economic benefits of AVs
2. Guide the development of AV products and business models that are aligned with a sustainable mobility system vision

Next Steps
• Multi-stakeholder workshops for SF and Israel (October)
• Refine framework, socialize findings with SF city government (November)
• Release San Francisco findings (December); formal kickoff for Israel (April, 2020)

Core Participants
Led by the World Economic Forum in partnership with the city of San Francisco and the State of Israel’s C4IR Affiliate.

How can we help cities and nations meet their mobility goals in the face of rapid technological advancement?

- Reduce safety risks
- Reduce congestion
- Expand equitable and accessible mobility options
- Reduce greenhouse gas emissions
- Encourage high occupancy modes and trips
- Share data to evaluate service benefits and impacts
**Goal**
Leverage digital tools to design and execute catalytic multi-modal solutions to address the systemic gaps that result from population growth, lagging infrastructure investment and technological disruption.

**Impact**
1. Improve regional mobility options
2. Increase regional mobility efficiency and access by defining the foundational digital integration layer for data sharing, governance, privacy, security, and standardization
3. Expand the regional connectivity network to facilitate the operations of autonomous technologies across the border

**Core Participants**
Led by the World Economic Forum in partnership with Deloitte and the cities of Ann Arbor, Detroit, and Winsor, partners include Via, Siemens, Hyperloop, University of Michigan, Bestmile, just to name a few.

**Next Steps**
- Multi-stakeholder workshops in pilot cities (on-going)
- Multi-stakeholder workshops with benchmark cities (on-going)
- Release of technical roadmap, framework for data sharing, list of technical requirements, analysis of employer-sponsored mobility pilot and mobility for underserved users pilot (January, 2020)
How can we apply technology advances to right-size mobility options?

**Goal**
Develop, test, and scale an operational framework for the widespread expansion of autonomous and urban mobility innovations to alleviate transportation deserts in rural and small cities in Japan.

**Impact**
1. Create resilient and cooperative systems for AV/MaaS operators and city governments
2. Develop sustainable public-private funding partnerships
3. Provide mobility to vulnerable populations

**Core Participants**
Led by The World Economic Forum, Centre for the Fourth Industrial Revolution in Japan, and McKinsey & Company, participants include MLIT, METI, Hiroshima Prefecture, Miyagi Prefecture, Akitakada City, MaaS Tech Japan, Sompo Digital Lab, Denno Kotsu, Toyota Motors, DeNA, University of Tokyo, DBJ, Atsumi & Sakai, Institute of Behavioral Studies

**Next Steps**
- Launch transportation sustainability index, ready-to-use toolkit and framework for rural mobility reform (December)
- Align suitable long-term solutions and pilot framework (beginning February, 2020)
Circular Cars

How can we apply circular economy principles to improve the automotive industry?

Project Overview
The automotive industry is undergoing a massive change toward mobility as a service, which necessarily means far greater asset utilization. Simultaneously, OEMs are seeing the value of designing for circularity and recyclability. These trends in combination can drive significant cost savings while contributing to clean air and climate action targets.

Project Objectives
1. Generate new insights, evaluate the economics of alternative options, and define a relevant research agenda
2. Trigger concrete industry action and develop policy proposals to make projects in the areas of materials, manufacturing, after-use, material platforms, and relevant metrics.

Core Project Participants
At the core of the project are the World Economic Forum, the WBCSD, Systemiq, and LeasePlan. The project is in cooperation with related initiatives of the Advanced Manufacturing, Advanced Materials, and the PACE initiative.

Next Steps
The project will convene a kick-off meeting in spring 2019, with interim work product and touchpoints leading to the Sustainable Development Impact Summit (September 23-24, 2019).
Global Battery Alliance

Project Overview
Batteries are a core technology enabling the transformative shift to decarbonize energy and transport systems. However, without deliberate intervention, the potential of batteries to support sustainable development and climate change mitigation is undermined by its own value chain.

Project Objectives
The Global Battery Alliance seeks to address these challenges. As a global collaboration platform and public-private partnership hosted by the Forum, it seeks to catalyze, connect and scale-up efforts to ensure that the battery value chain is socially responsible, environmentally and economically sustainable and innovative.

Objectives include building stable and transparent supply chains; develop the circular and low-carbon value chain required to unlock the capacity of batteries to help realize the 2015 Paris climate accord; and to support the innovative use of batteries to bring electricity and productivity.

Next Steps
The Alliance seeks to move from building and catalyzing partnerships to implementation and delivery. It seeks to take action and deliver measurable results across the Alliance’s areas of work in raw materials, circular economy, and innovation.
Global New Mobility Coalition

How can we harness technological advances to achieve:

- Efficiency increase > 70%
- CO2 emissions decrease > 95%
- Cost savings > 40%

**Goal**
Co-develop, pilot, and scale awareness-building and policy initiatives that promote the benefits of shared, electric, and automated mobility technologies (SEAM) to society and the environment.

**Impact**
1. Redress detrimental impact on climate and air quality from vehicles
2. Reinforce and communicate a comprehensive and positive vision for low carbon, more sustainable transportation in cities
3. Promote public-private partnerships to accelerate SEAM adoption

**Core Participants**
With over 100 members, steering members include the World Economic Forum, ClimateWorks, UC Davis, EV100, Uber, Energy Foundation China, Technion, Lyft, Via, BMW, Ford, and Uber. C40 and OECD-ITF are key knowledge partners. Was launched at SDI UN-Forum Summit.

**Next Steps**
- Oct. 2019: Release a first op-ed during C40 Mayor Summit
- Oct. 2019: Announce first pilot cities at the Global Future Mobility Summit
- Dec-Jan. 2019: Meeting and further city announcements at Conference of the Parties (Dec) and the Transportation Research Board (Jan)
The Global New Mobility Coalition (GNMC), conceptualized during the Climate Action Summit in San Francisco a year ago, is officially launched today as part of the Forum’s Sustainable Impact Summit highlights.
From MaaS to MaaSS: Ensuring sustainability is at the heart of mobility

- Indicators of success:
  - Time
  - (True) Cost
  - Safety
  - Equity
  - ...?
The Opportunity presented by Shared, Electric and Automated Mobility (SEAM)

- Seamlessly integrate mobility and urban development
- Prioritize active, shared micro-modes and shared-rides
- Prioritize zero-emissions mobility
- Pursue automated mobility as part of electric and high occupancy
SEAM for Faster and Higher Levels of Emissions Reduction

With SEAM:

- Efficiency increase > 70%
- CO2 emissions decrease > 95%
- Cost savings > 40%

SEAM air quality and climate benefits – 45-95% reduction in emissions if combined right

Note: VKT = vehicle kilometres travelled; ICE = internal combustion engine; AV = automated vehicle; SM = shared mobility; EV = electric vehicle
Avoiding the Adverse Effect of New Mobility on VKT and PKT

- Currently, emissions from mobility will double by 2050.
- Passenger vehicles account for 70% of these mobility GHG emissions and cause over 50% of city air pollution.
- SEAM can reduce number of vehicles from 2.1 billion to 0.5 billion in 2050.

https://steps.ucdavis.edu/gifsanimations-for-the-three-revolutions-in-urban-transportation/
GNMC Principles, Vision, Dimensions of Action, Informed Decision-making

A 4-Step approach:

Governance Work Principles
Governance Vision and Goals
Governance Instrumentation
Real-world Evaluation

A 2-Dimension effort:

Public, Private and Hybrid Instrumentation/Action

Preferential Space Allocation and Cost Determination for SEAM

ITF Modelling Framework

China Urban Transportation Emissions Calculator (CUTEC)

Automotive Deployment Options Projection Tool (ADOPT)

Behavior, Energy, Autonomy, and Mobility (BEAM) Model
Highlights:
Our SEAM Governance Framework

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Highlights: Ride-hailing fleet electrification in London

Reliance on public fast charging increases costs by about 30%...so, it takes two for Tango:

- London introduced aggressive goals (50% by 2021, 100% by 2025) and subsequent regulations
- Uber introduced a 0.5GBP per-km charge to subsidize the conversion to electric cars.
Designing loading hubs is a hard task, and the impact isn’t yet clear:

- Seattle tested two hubs with support from Amazon and two ride-hailing companies
- Washingtonian analysis yielded useful results for next steps
Highlights: Shared autonomous rides in Shanghai

Testing shared AV rides in China:

- Shanghai district permitted the testing of shared AV rides
- Didi committed to analyze and share pilot results
How do I engage with projects through the Platform for Shaping the Future of Mobility?

**Forum-Led Projects**
Projects created and led by the World Economic Forum.

**Known Traveller Digital Identity (KTDI)**
Piloting the KTDI concept with the goal of having Dutch and Canadian nationals enrol in the KTDI platform and complete an end-to-end journey in a contained live environment using their biometrics instead of passports by early 2020. Components of the journey will be tested and integrated in late 2019.

**Joint Venture Projects**
Projects the Forum leads as a joint venture with other stakeholders.

**Space Sustainability**
The Space Sustainability Rating project was launched in cooperation with European Space Agency, Space Enabled Research Group at MIT’s Media Lab, University of Texas and Bryce Space and Technology. The project promotes existing guidelines for orbital debris mitigation by increasing transparency and creating market pressure to drive the sector's sustainable growth.

**Partner-Led Projects**
Projects led by Partners of the Forum. We support, highlight and amplify these projects.

**Hydrogen Council**
Launched at the World Economic Forum’s 2017 Annual Meeting, the Hydrogen Council is a global initiative of leading energy, transport and industry companies with a united vision and long-term ambition for hydrogen to foster the energy transition.
THANK YOU!

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Automotive and Autonomous Mobility Lead
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Highlights: UC Berkeley for common language

SAE International with the support of UC Berkeley developed definitions for shared mobility terms — “Taxonomy and Definitions for Terms Related to Shared Mobility and Enabling Technologies – J3163™”
Data is the fuel of mobility. Don't spill it for nothing - Blog

SEAM Building Codes - Blog

Pricing – Cut Out

Debating SEAM Principles – webinar

Highlights: Our SEAM Governance Framework
Highlights: Via’s On-Demand e-AV Shuttle in Australia
Highlights:
Uber’s fleet electrification in London

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See [https://www.theicct.org/publications/policy-briefing-electrify-ridehailing](https://www.theicct.org/publications/policy-briefing-electrify-ridehailing)