

The background of the slide is a blurred, colorful photograph of a city street at night. The image is dominated by streaks of light from moving vehicles, creating a sense of motion. Overlaid on this background is a grid of binary code (0s and 1s) that appears to be flowing or moving across the screen, suggesting digital data or connectivity.

# Mobility As A Service

*William El Kaim  
Oct. 2016 - V 3.2*



This Presentation is part of the

# Enterprise Architecture Digital Codex



ENTERPRISE  
ARCHITECTURE  
DIGITAL CODEX

INTRODUCTION

DIGITAL EA CODEX

DIGITAL REVOLUTION EXAMPLES

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<http://www.eacodex.com/>



# Plan

## Macro Economic Factors

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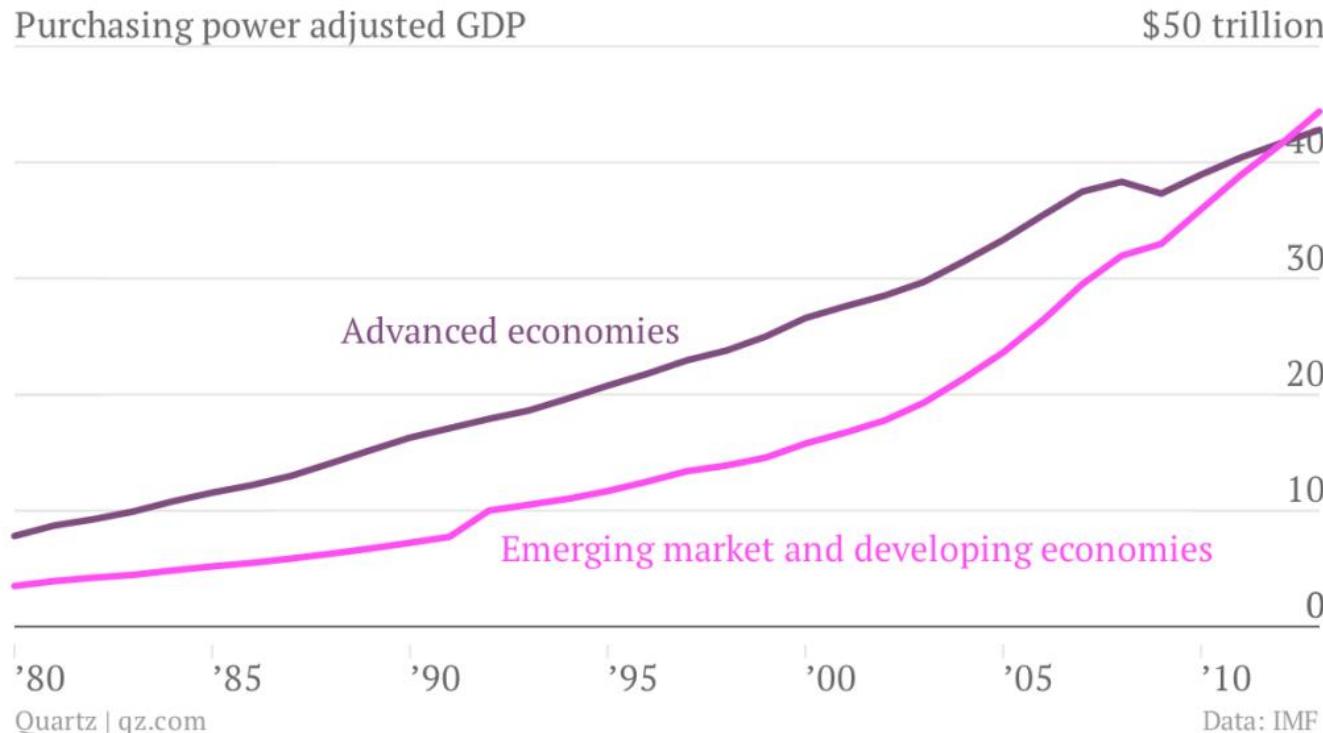
- New forms of Transportation
- Rise of Smart Mobility
- Smart Mobility Providers
- Smart Mobility Integrators
- Smart Mobility Aggregators
- Mobility As A Service (MaaS)
- Re-imagination is crucial
- Resources



There are more people living inside this circle than outside of it.



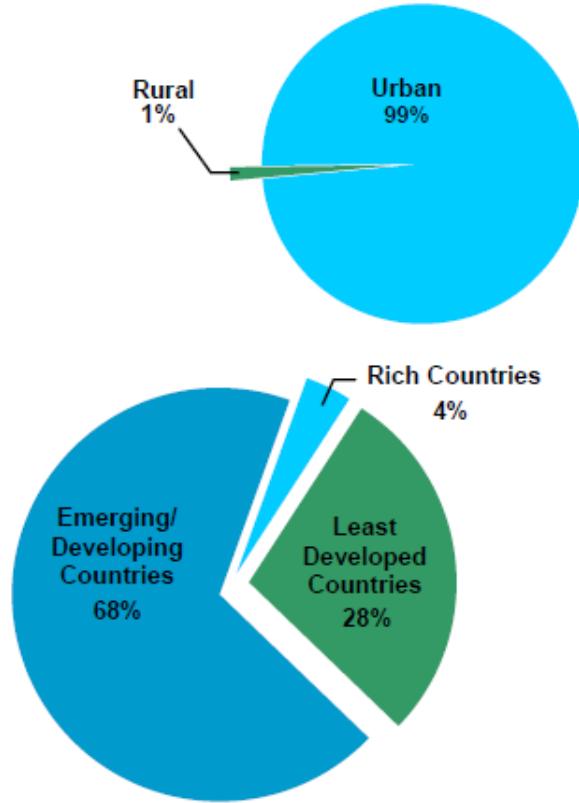
# In 2013 The Combined GDP Of Poor Nations Became Greater Than The Rich Ones



Quartz | qz.com



# World Population



Source: UN DESA Population Prospects (2008)

The world is entering **the final phase of a period of explosive growth** that peaked in the mid-1960s.

Between 2010-2025, the global population will increase from 7 to 8 billion people.

**The 'next billion' will be Asian or African, and will live in the towns and cities of the developing world.**

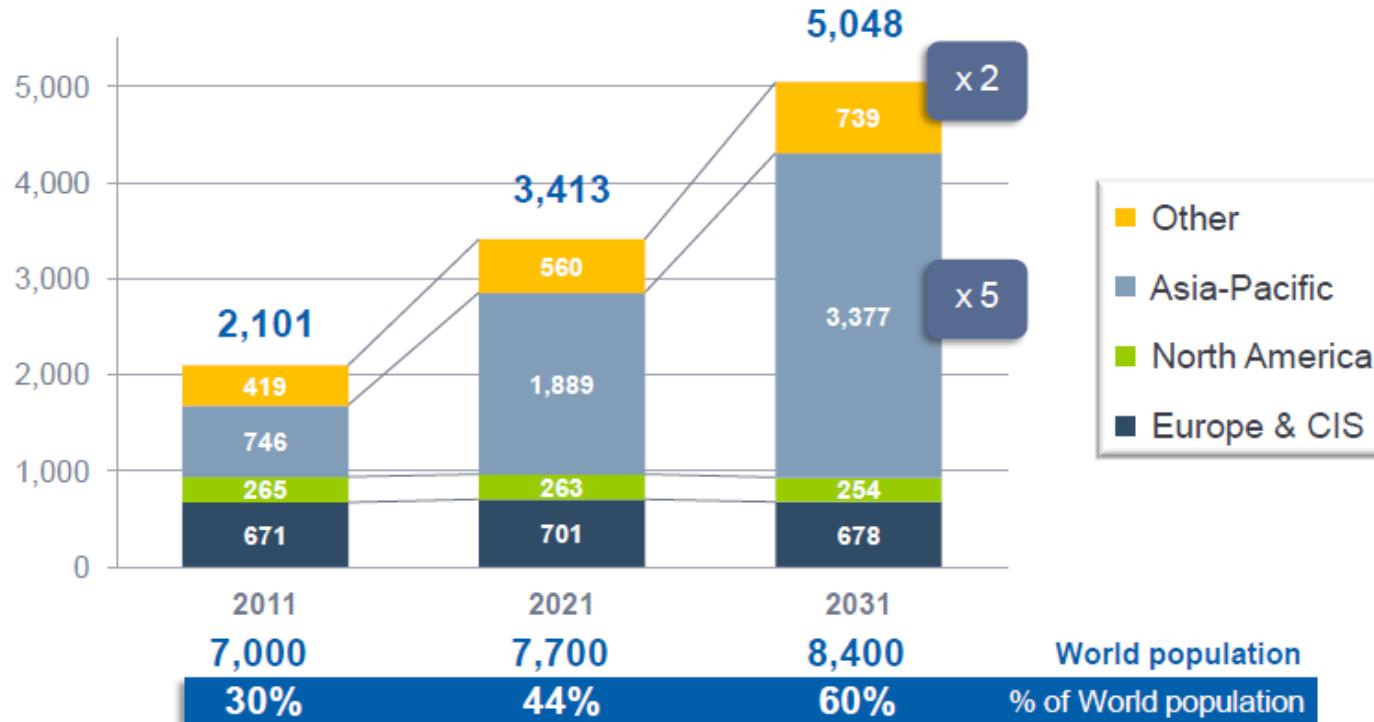
The world has now split into three broad demographic groups.

- In the first, population is more or less stable, or is shrinking (Europe, Japan).
- In the second, a population peak is in sight (China, India).
- In the third – which includes the world's most fragile countries (mostly in Africa) – population growth is still rapid, with the transition from large to small families slow, or stalled.

(The United States is an outlier – as immigration continues to drive the population up.)



# Middle Class Growing





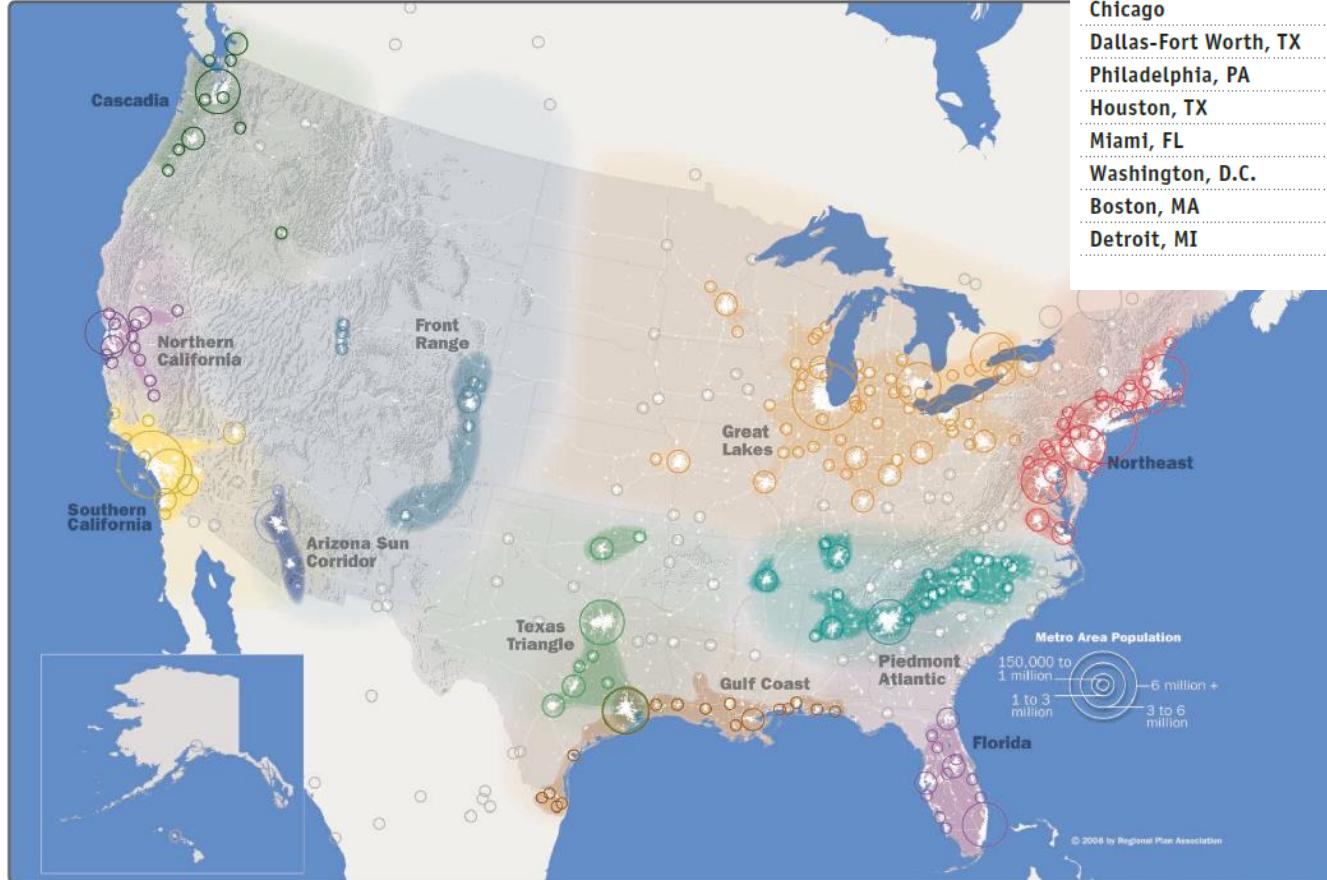
# Rise of Megacities



While the world total population will increase from 7 to 8.3 billion people in 2030, the urbanization growth rate is expected to be 2 % per year, representing 60 % of the world population or 5 billion people in 2030

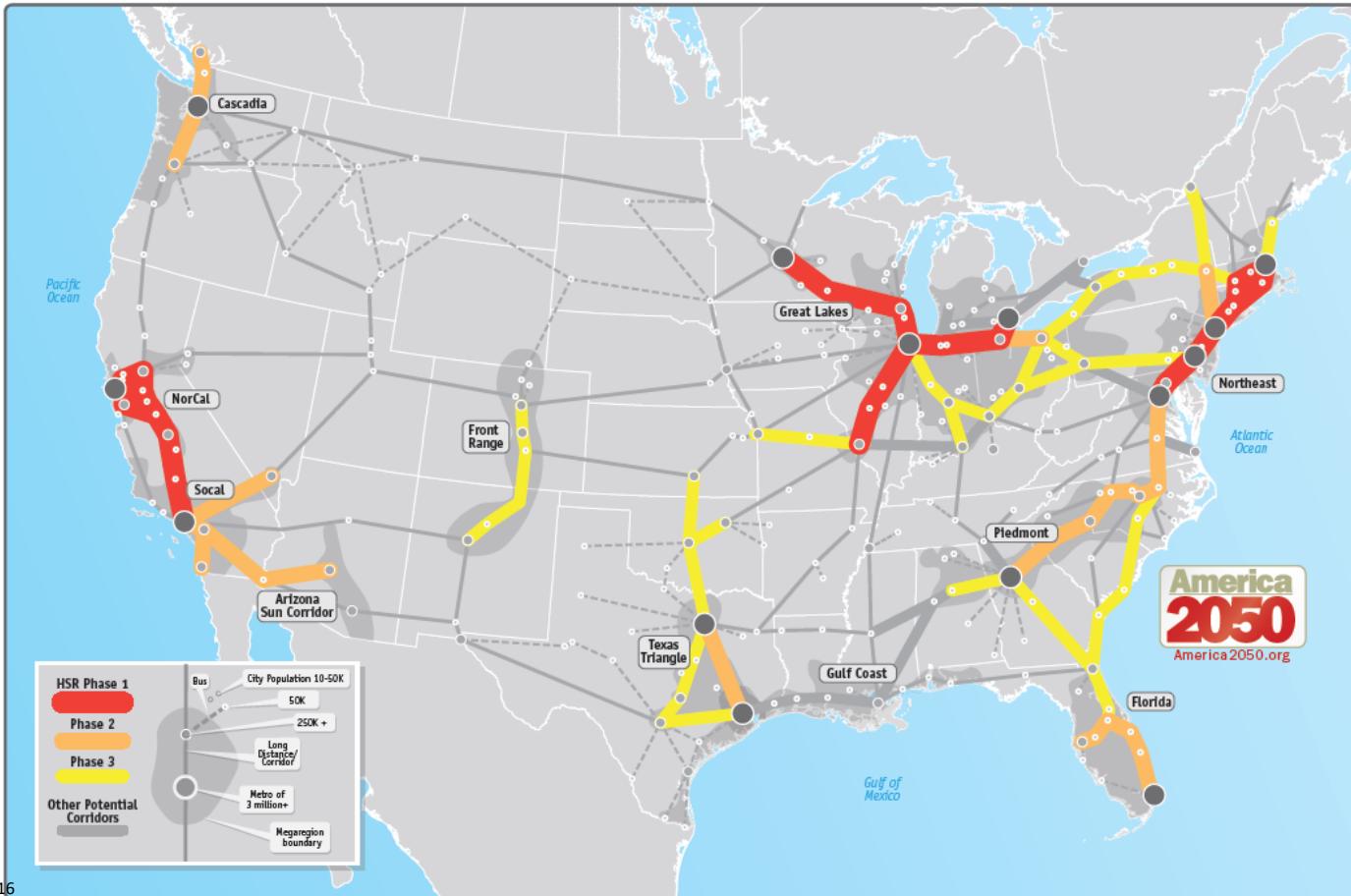


# USA Mega Regions



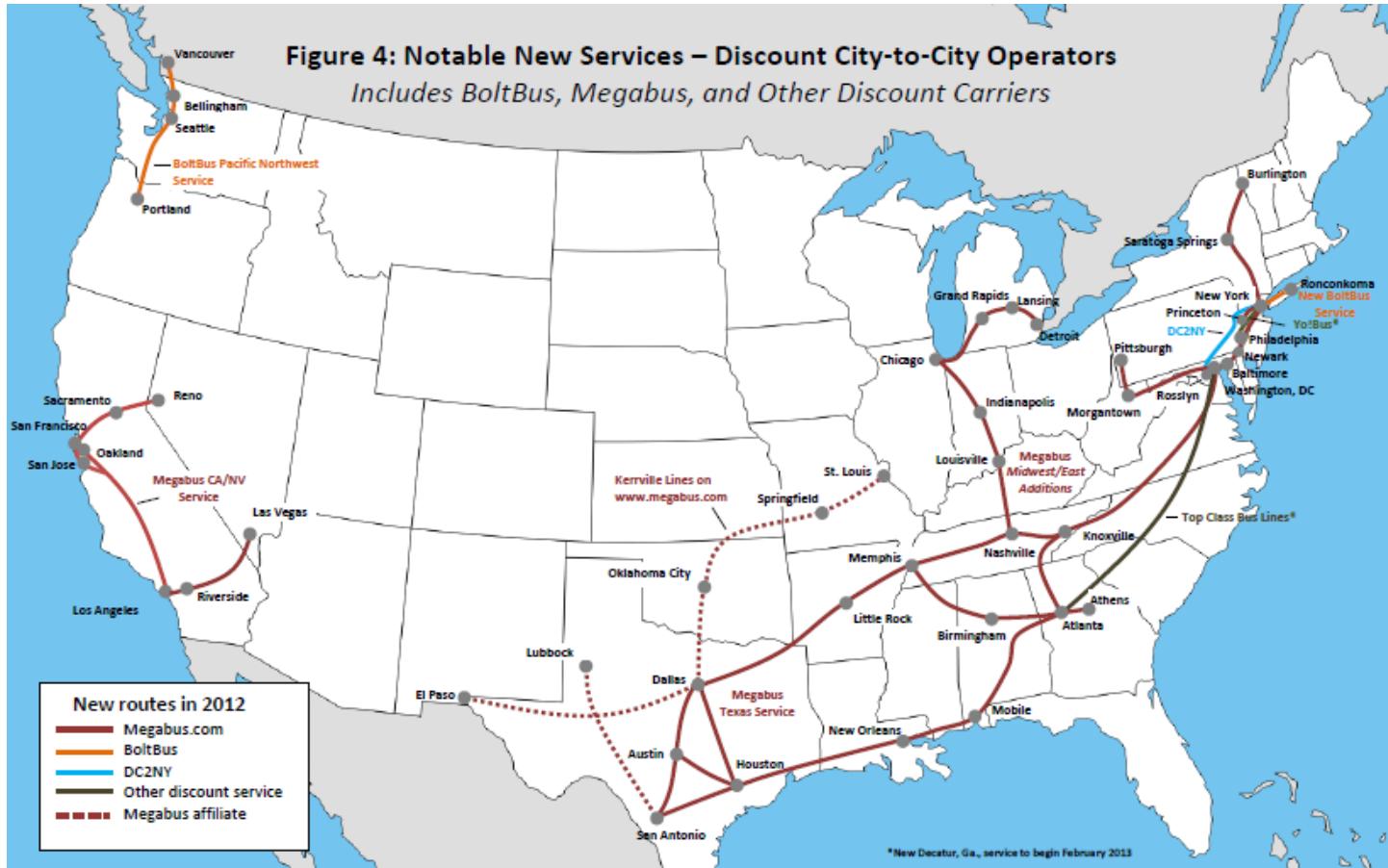


# Connecting Mega Regions is Key





# Inter-city Bus (USA)



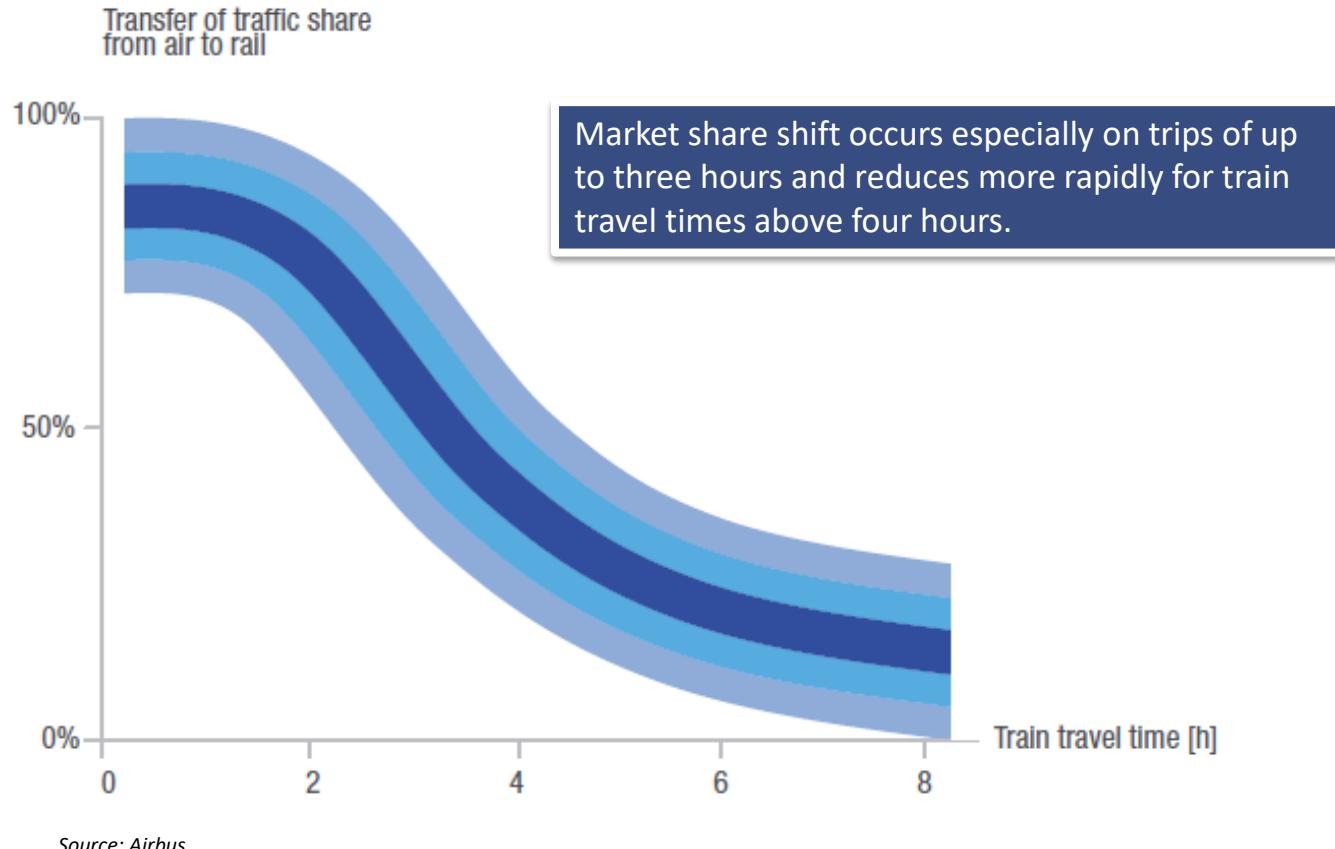


# Inter-city Bus (France – adter Macron Law)





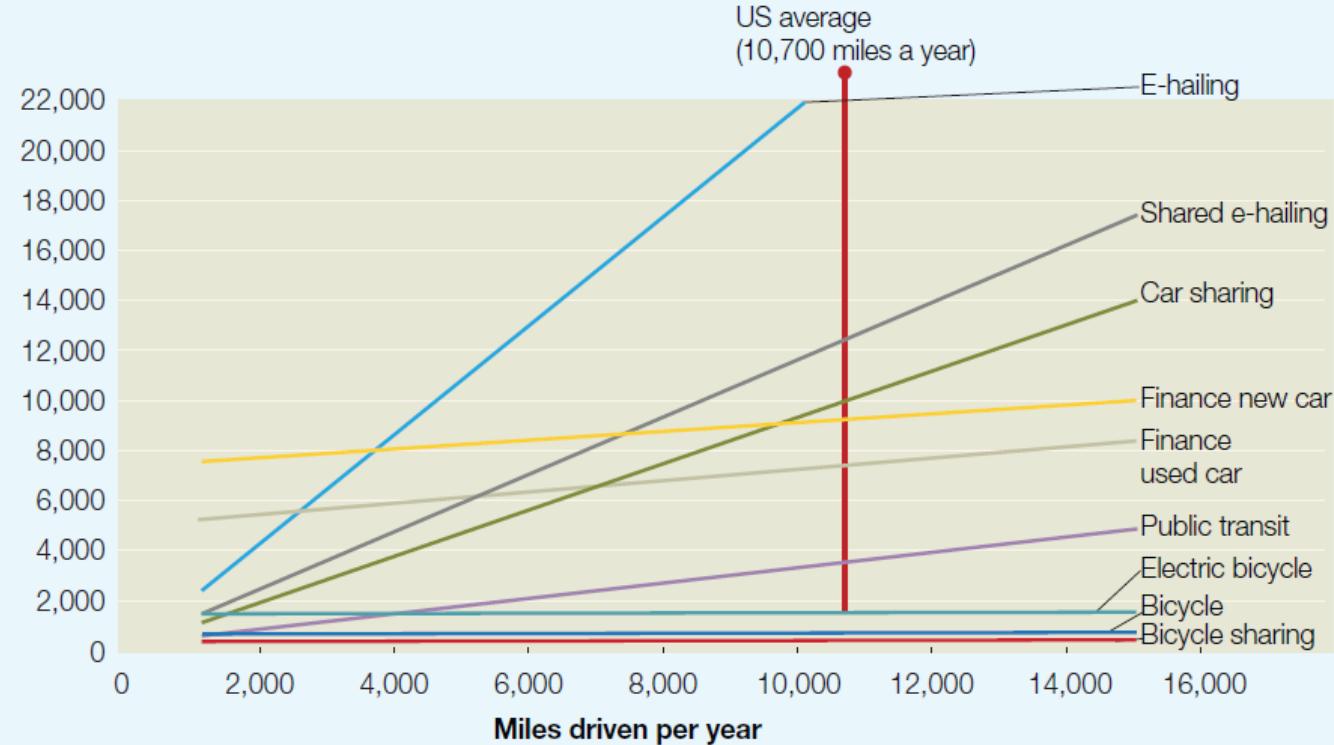
# Transfer of Traffic Share from Air to Rail





# Cost Per Mile Per Mobility Type

Annual cost of mobility in San Francisco Bay Area,  
\$ thousand per vehicle equivalent



Source: US Department of Transportation Federal Highway Administration; McKinsey analysis



# Plan

- *Macro Economic Factors*

## New forms of Transportation

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- Rise of Smart Mobility
- Smart Mobility Providers
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# Maglev trains



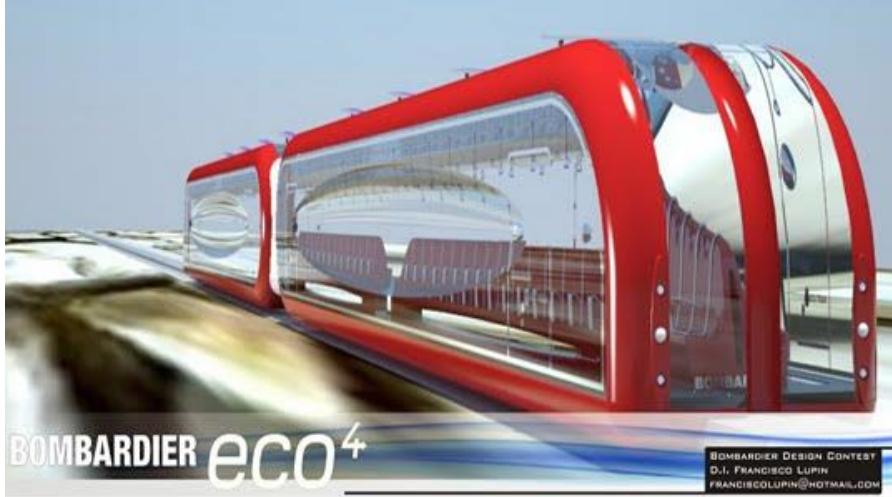
Magnetic levitation to move vehicles without touching the ground travels, along a guideway using magnets to create both lift and propulsion, thereby reducing friction and allowing higher speeds.

Across Japan by 2025

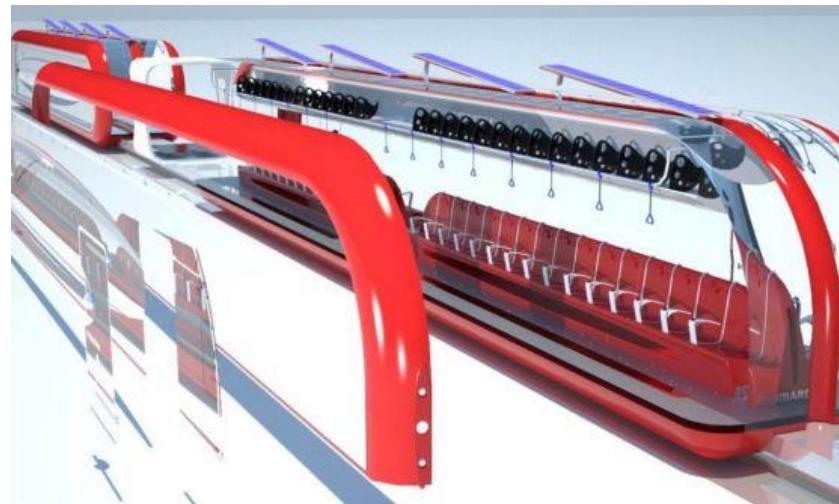




# Bombardier Eco4

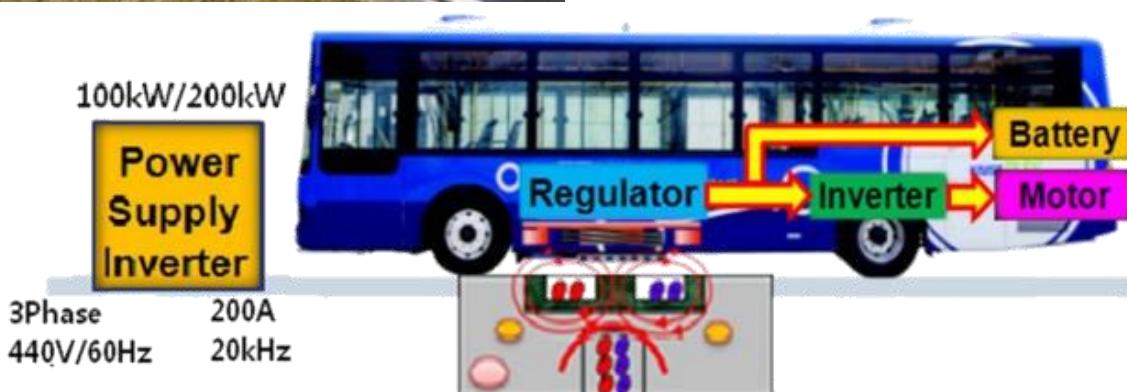


Bombardier claims 50% of energy economy for Eco4





# South Korea: Roads That Recharge Electric Bus As You Drive





# E-scooters and Smartphone

- Smart Scooter use an iPhone as its instrument panel, serving as combined speedometer, range indicator and GPS.



# >>> E-scooters and Smartphone

- Japanese manufacturer Terra Motors now appears to be following suit, with the A4000i electric scooter





# Autonomous Vehicle: Google

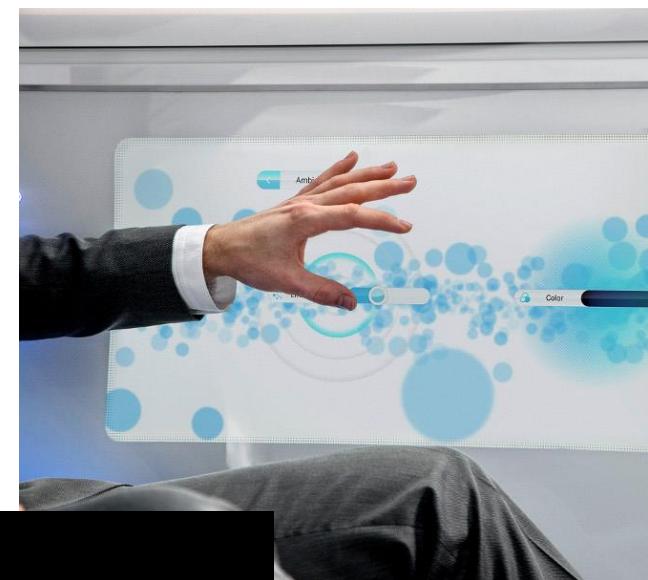




# Autonomous Vehicle: Mercedes



<https://www.mercedes-benz.com/en/mercedes-benz/innovation/research-vehicle-f-015-luxury-in-motion/>

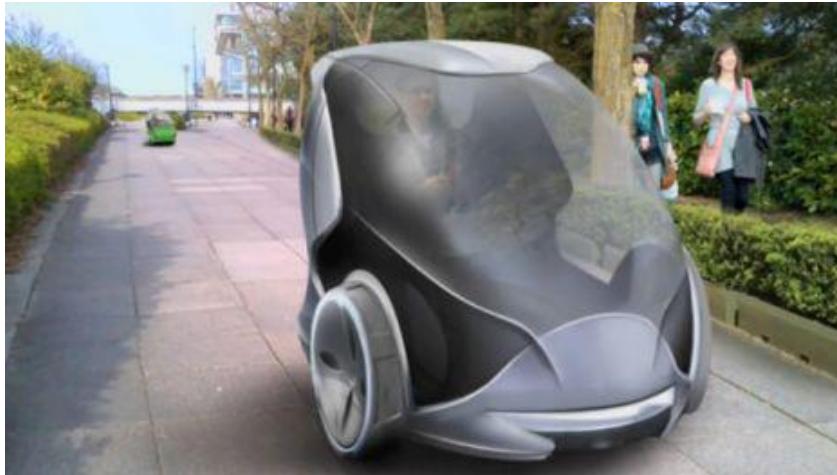




# Urban Transport Pods

- Human operator interacts with the pod using a touchscreen in the windshield.
  - Swipe to select a destination, and you can read the daily news, check your e-mail or even play a video game during the trip.
  - Built-in wireless hotspot to connect your gadgets. The pod operates on its own, showing its current route.

**Already being used in Masdar City in Abu Dhabi and at the London Heathrow airport, but both are used in tightly controlled areas.**





# Hitachi's ROPITS tablet-controlled, self-driving urban vehicle





# Aeromobil



[www.aeromobil.com](http://www.aeromobil.com)

 Plan

- *Macro Economic Factors*
- *New forms of Transportation*

### Rise of Smart Mobility

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- Smart Mobility Providers
- Smart Mobility Integrators
- Smart Mobility Aggregators
- Mobility As A Service (MaaS)
- Re-imagination is crucial
- Resources

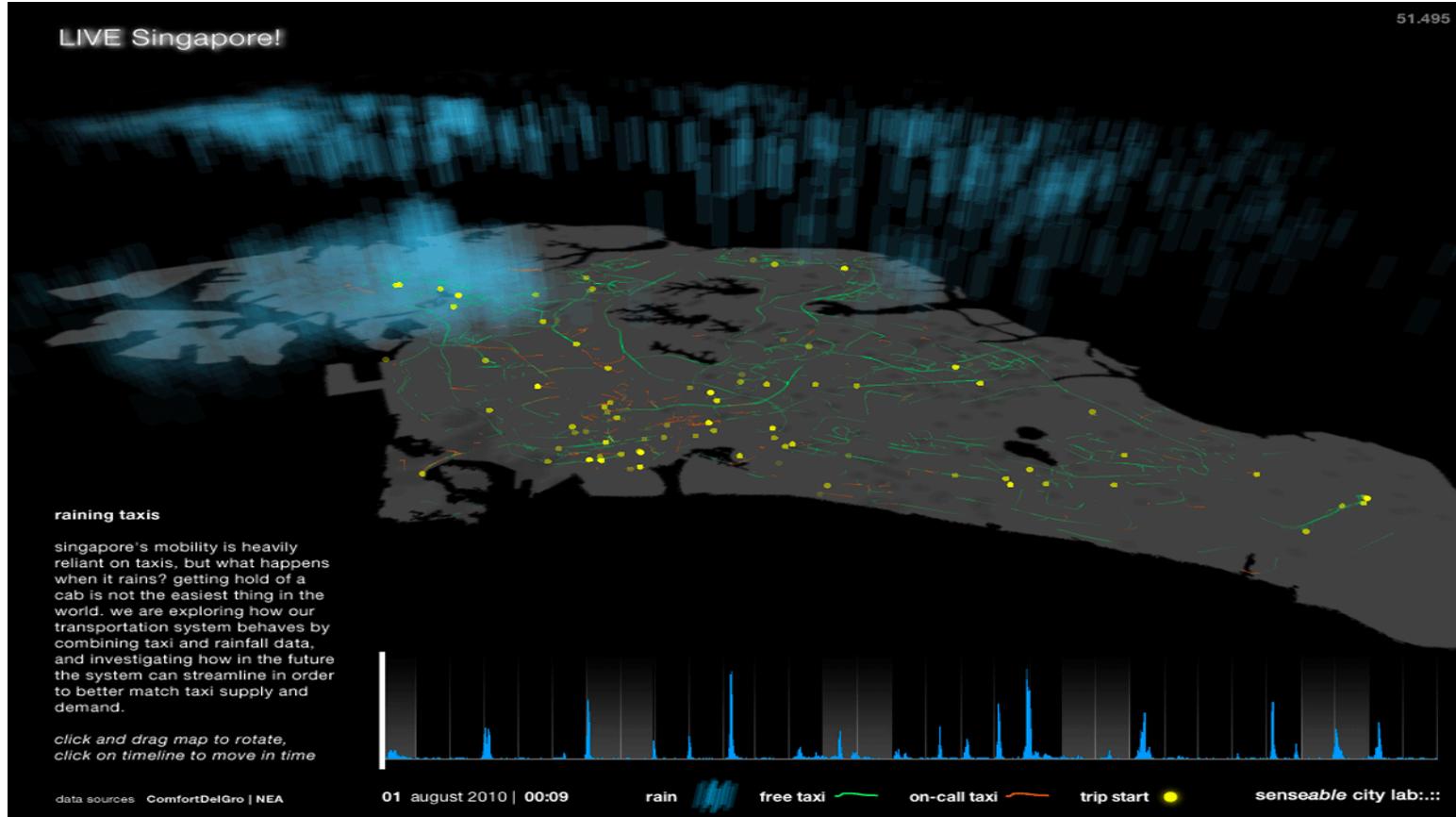


# City Constraints

- Urbanization creating massive and rapid pressure on mass transit systems
  - 80% of the world's population will be living in cities by 2050.
- A growing urban middle class also creates challenges.
  - Increasingly sophisticated, and web-connected consumers demand a better customer experience in mobility.
- Proliferation of sensors
  - Smartphones not only create the opportunity to provide services to users, but they are also in their own right and hence rich sources of data.
  - Sensors are being installed in cities to get a more precise vision of its “context”. **Data augmented cities are called Smart City!**



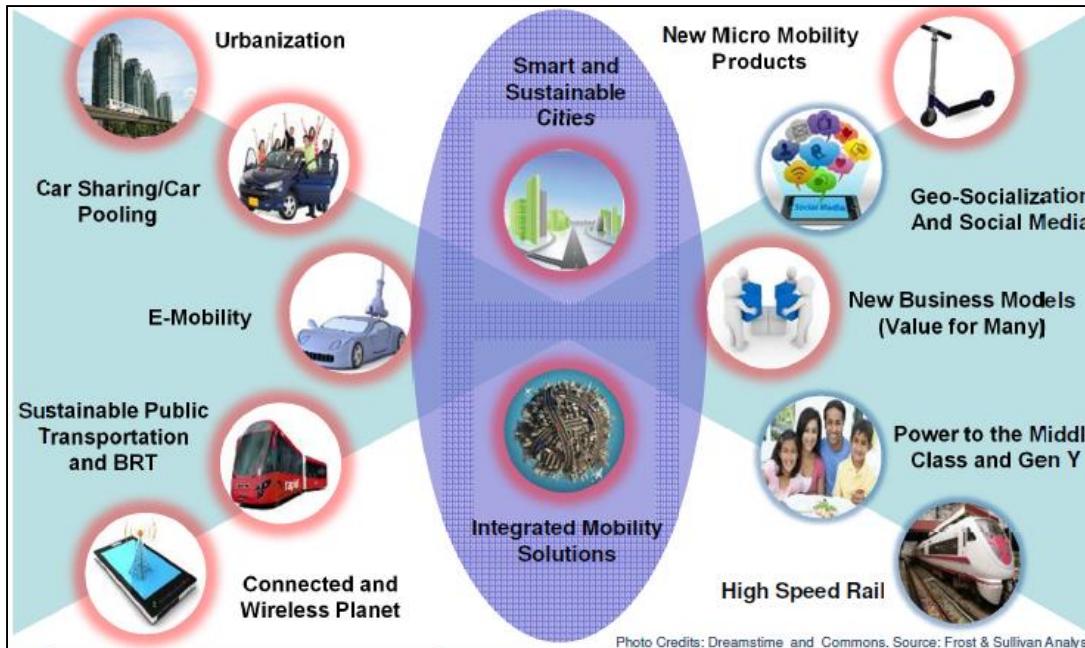
# Example: Singapore Smart City





# Welcome To The Mobility Era!

- Mobility is about seamless travel using all of the various modes of transportation available rather than relying solely on one transportation mode.



Source: Frost and Sullivan



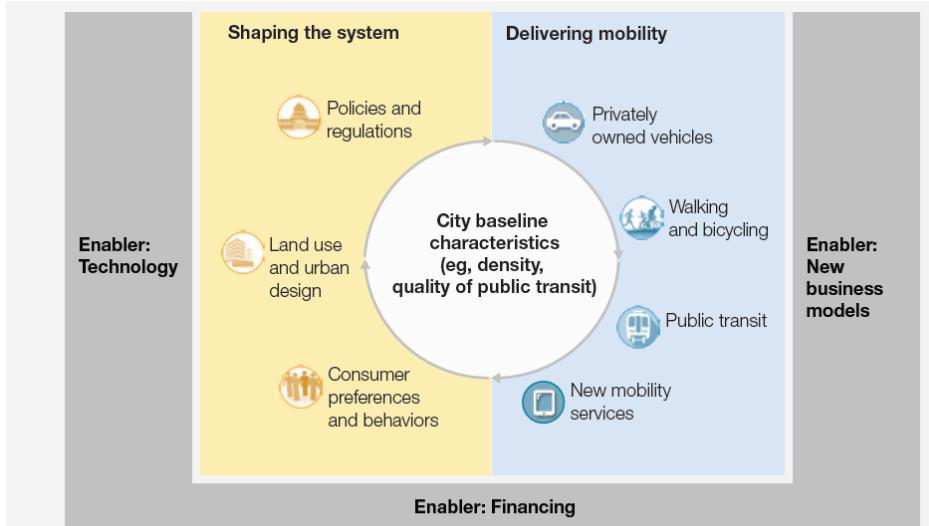
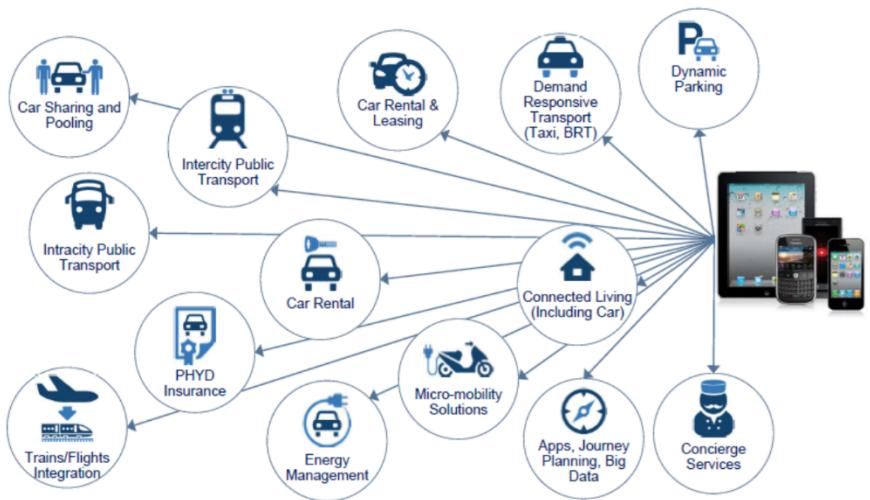
# Welcome To The Mobility Era!

- The "omnia illico" era (Everything Now !)
  - Impatient travelers willing to have a mobility solution Now and Here!
- Smart Mobility to the rescue ...
  - People will be “mobile” and Connected all the time.
    - Contextual mobility creates the opportunity for a better passenger experience and faster passenger flow, it also creates the opportunity for transport service providers to **market additional services**.
    - Algorithm will leverage user context to propose pro-active mobility solutions and create new habits
      - Door to door thinking and Multi-Mode of transportation will become the new normal.
    - In lieu of large civil infrastructure projects, transportation systems are increasingly being **augmented with a range of information technologies and new form of transports** that make them smarter, safer, more efficient, more integrated.



# Smart Mobility Ecosystem

## *One City at a Time*



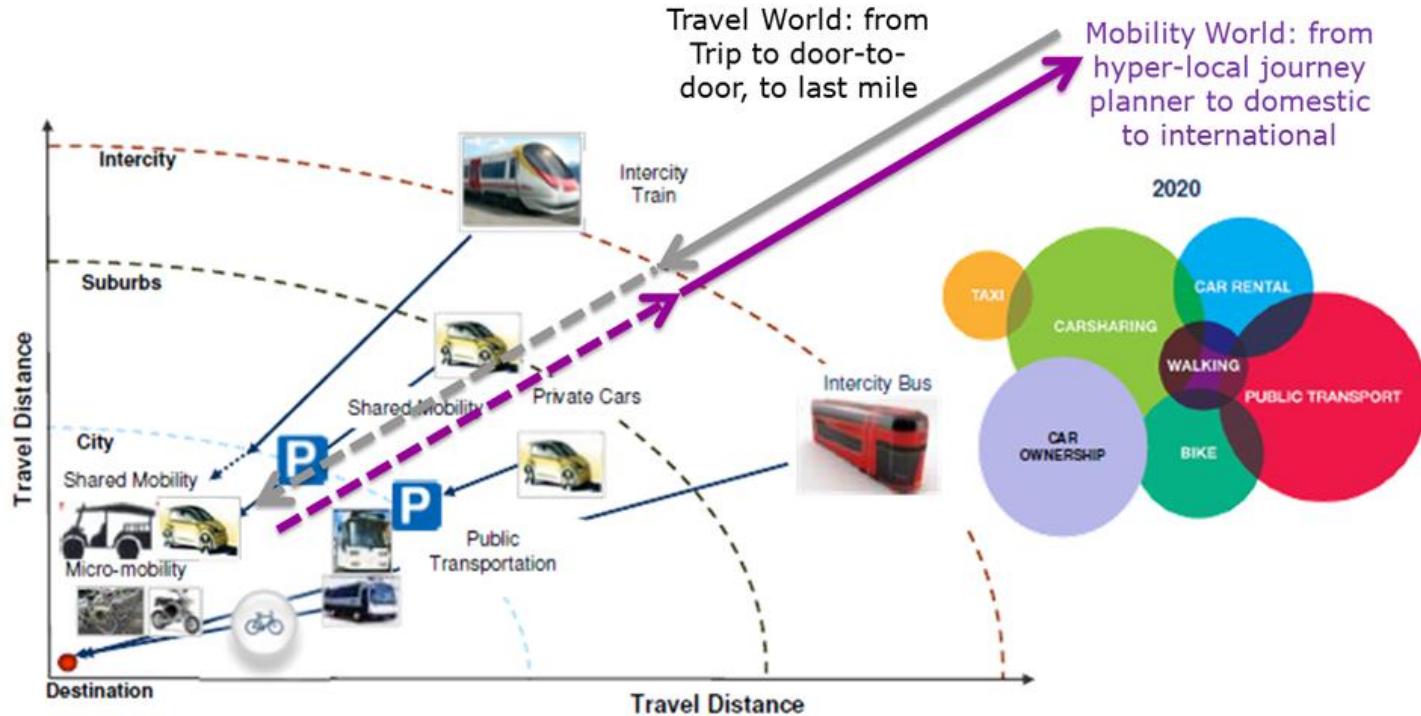
F R O S T & S U L L I V A N

Source: McKinsey analysis



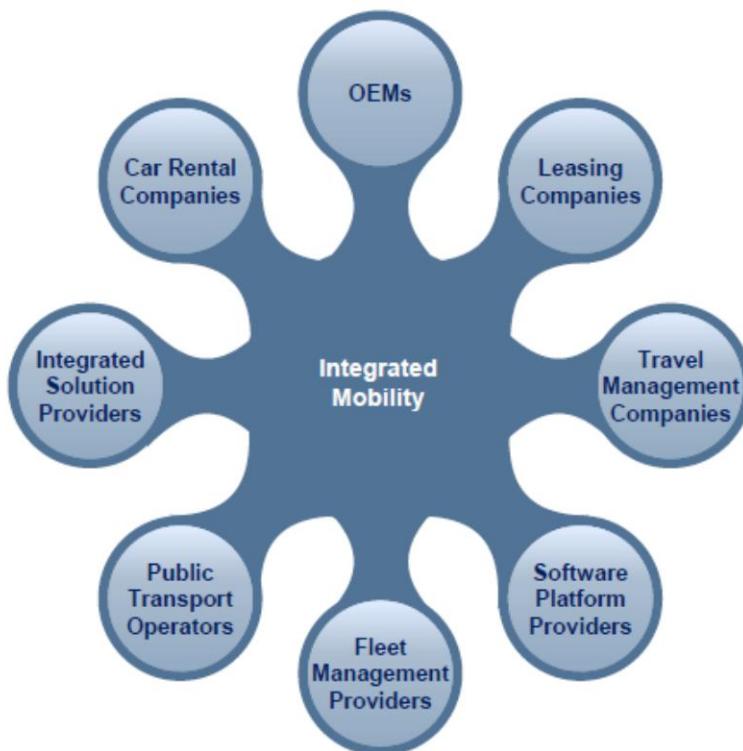
# Smart Mobility

*One City at a Time and then City To City*





# Smart Mobility Ecosystem



F R O S T & S U L L I V A N

	Taxi Services	U B E R		
	Bike Sharing			
	Micro-mobility			
	Car Sharing	zipcar		
	Corporate Car-Sharing	AlphaCity		
	Car Rental	Hertz	avis budget	
	Ridesharing			
	Parking	VINCI	JustPark	
	E-Mobility		ChargeNow	
	Public Transport	DB		
	Integrated Mobility	moovel	Qixxit	
	Ecosystem Partnership			



# Smart Mobility Actors Taxonomy

- Transformation of the transportation domain is now being driven mainly by the private sector
  - Cities are facing budget issues and could not subsidize Transport like before!
  - Cities were not used of offering smart on-demand mobility, but quite the opposite (also called "mass transit")
- Three kinds of private actors are rising
  - **Smart Mobility Providers** is a member in the value chain who enables or owns a new mode of transport and offers a programmatic access to its services (mobile app, API, etc.).
  - **Smart Mobility Integrator** is an entity which enables the existence of mobility programs through its current offering.
  - **Smart Mobility Aggregator** is an entity which offers a selection of mobility services as core business either as standalone providers or through partnerships.

 Plan

- *Macro Economic Factors*
- *New forms of Transportation*
- *Rise of Smart Mobility*

### Smart Mobility Providers

- Smart Mobility Integrators
- Smart Mobility Aggregators
- Mobility As A Service (MaaS)
- Re-imagination is crucial
- Resources



# Smart Mobility Providers

- Definition
  - Member in the value chain who enables or owns a new mode of transport and offers a programmatic access to its services (mobile app, API, etc.).
- **Smart Mobility Providers** target all transportation needs and niches
  - New entrants (like Uber, SpaceX, Kuaidi Dache, OlaCabs)
  - Established players in other business domains such as car manufacturers (BMW, Daimler, Ford), public transportation (Xerox Transportation, Keolis, Transdev, etc)
  - New shared transportation services (bike, car, motorcycles, boats, etc.).

Individual-based mobility	Traditional mobility solutions	New mobility services
	Private car ownership	Car sharing: peer to peer A peer-to-peer platform where individuals can rent out their private vehicles when they are not in use
Taxi	E-hailing	Process of ordering a car or taxi via on-demand app. App matches rider with driver and handles payment
Rental cars	Car sharing: fleet operator	On-demand short-term car rentals with the vehicle owned and managed by a fleet operator
Car pooling	Shared e-hailing	Allows riders going in the same direction to share the car, thereby splitting the fare and lowering the cost
Public transit	On-demand private shuttles	App and technology enabled shuttle service. Cheaper than a taxi but more convenient than public transit
	Private buses	Shared and Wi-Fi-enabled commuter buses available to the public or to employees of select companies. Used to free riders from driving to work

Source: McKinsey analysis



# Smart Mobility Providers Taxonomy

- *E-hailing:* Uber is already operating in more than 300 cities and 58 countries, and in some of them, it is already larger than the traditional taxi industry. In China alone, an estimated 170 million people use some form of e-hailing services.
- *Car sharing:* These services are growing 35 percent a year in the United States, reaching 1.6 million members in 2014. In Germany, car-sharing membership has grown 50 percent a year since 2010, reaching 1 million people in 2014.
- *Shared e-hailing:* Lyft shared e-hailing service, Lyft Line, already accounts for most of its San Francisco business. Both Uber and Lyft plan to roll out shared services to new cities in 2015.



# Smart Mobility Providers

- *On-demand private shuttles:* Using smaller, more flexible shuttles is not a new idea; New York City's "dollar vans" and the minibuses common in the developing world have been around for decades. But the new crop of connected, on-demand shuttle services is finding a loyal customer base and an operating model that is allowing the services to expand to new routes and new cities (like PADAM in Paris)
- *Private buses:* Some private employers, such as Google, Apple, and Genentech, are building transportation networks for their employees. This is happening in the developing world too. Tata Consultancy Services has more than 225 buses to help its employees cope with the notorious traffic jams in Chennai.
  - The "Home to Work" ride is rapidly becoming a major concern, and companies are looking for better solutions as urbanization rises and mass transit saturates.



# Smart Mobility Providers

## PADAM: Night Shared Bus in Paris

LE TRANSPORT COMME VOUS NE L'AVEZ JAMAIS VÉCU

- Place assise garantie**  
Vous êtes certain de voyager à votre aise et en toute sérénité.
- Chauffeur attentionné**  
Aux petits soins pour que vous passiez un agréable trajet.
- Haute qualité de service**  
Offrez vous un service VIP à un prix plus que raisonnable.
- Véhicule à taille humaine**  
Vous voyagez avec 7 à 8 personnes allant dans une direction similaire.
- Réservation en un clic**  
Paiement simple et sécurisé par carte bancaire : pas besoin de monnaie !
- Information en temps réel**  
Vous êtes informé de l'arrivée de votre bus minute par minute.





# Smart Mobility Providers

## *Beeline: Shared Bus in Singapore*

Book a seat on buses listed by private bus operators. If there are no routes suitable, suggest! New routes are activated by community demand. On the day of your ride, you will be able to track the bus you booked.

Introducing the new Beeline

Download the latest Beeline app to book seats on a direct shuttle to your destination. Experience a faster app and a more seamless commute.

GET IT ON Google Play   Download on the App Store

Go to the mobile web version

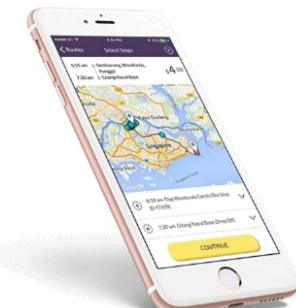
Kindly update your Beeline app if you are unable to book for the month of August.

Filter By Select A Region

Weekdays except PH:

- 1:00 pm @ Alexandra 1:23 pm @ Sembawang, Woodlands, Punggol
- 6:15 am @ Sembawang, Woodlands, Punggol 7:00 am @ Changi Naval Base
- 6:15 am @ Choa Chu Kang 7:45 am @ Changi Naval Base
- 7:20 am @ Tampines West, Bedok Reservoir 8:30 am @ Buona Vista, One North, Kent Ridge, Science Park
- 7:20 am @ Bedok Panjang 8:32 am @ Clean Tech Park, NTU

ROUTES TICKETS SETTINGS



3 easy steps...  
Suggest, book and ride.

Book a seat on buses listed by private bus operators. If there are no routes suitable, suggest! New routes are activated by community demand. On the day of your ride, you will be able to track the bus you booked. Beeline app is available on iOS, Android and mobile web.

<https://beeline.sg/>



# Smart Mobility Providers

## Karos: Ride Sharing in France

The screenshot shows the Karos website homepage. At the top, there's a navigation bar with links: "En route !", "Offre entreprises", "À propos", "Magazine", "Calculatrice", and "Des questions ?". A message "Press F11 to exit full screen" is displayed. The main visual is a photo of two women in a car, one smiling at the camera. Text overlay: "Le court-voiturage enfin possible !". Buttons for "Télécharger dans l'App Store" (with Apple icon) and "Disponible sur Google Play" (with Android icon). Below the photo are three smartphones showing the Karos mobile app interface. The app screens show trip details like "Travail" to "Maison" and "Ce soir", and a driver profile for "Aurélie G.".



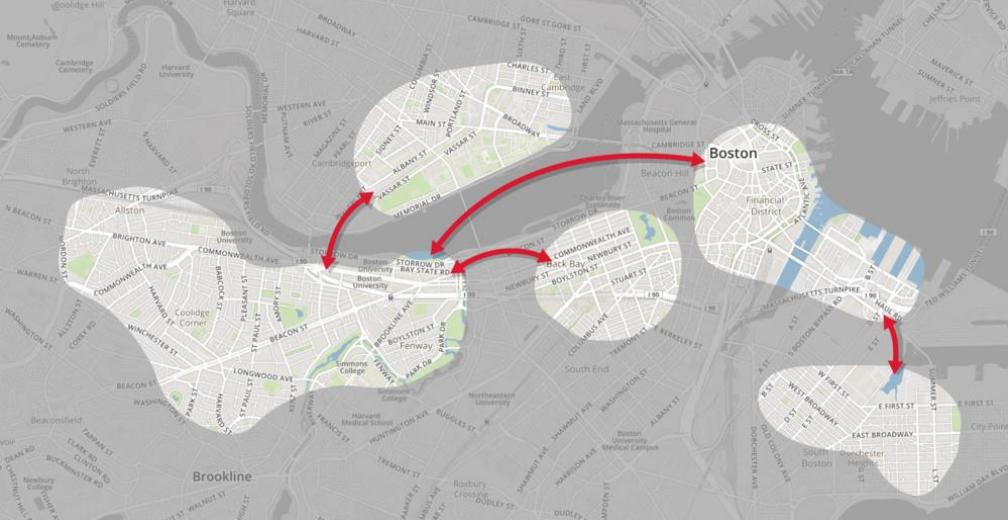
# Smart Mobility Providers

## Bridj: Shared Bus in DC



**Support**

Bridj is the world's first smart transit system which uses big data and luxury shuttles to adjust to your individual commuting needs. Scroll down to see how we are reimagining the way the world works. [Already sold? Sign up here.](#)



Luxury Shuttle on Demand in DC



# Smart Mobility Providers

## Bridj: Shared Bus in DC

Drop two pins, select the trip that meets your needs, purchase in-app and walk to your tailored Bridj pick-up location. We optimize pick-ups, drop-offs, and routing based on demand meaning a 40-60% more efficient trip (on average) than traditional transit at a \$2 to \$6 price point.

The image displays six screenshots of the Bridj mobile application interface, arranged in two rows of three. Each screenshot includes a descriptive text overlay at the bottom.

- Screenshot 1:** A map showing a route from "From: 23 State St, Boston, MA 02109" to "To: 8 St, Boston, MA 02110".  
Text: "Tell us where you want to go."
- Screenshot 2:** A schedule screen showing two trips:
  - Top trip: Departure at 07:29 AM, Arrival at 07:34 AM, Wednesday.  
Text: "Choose when you want to leave."
  - Bottom trip: Departure at 03:55 PM, Arrival at 04:00 PM, Wednesday.
- Screenshot 3:** A calendar screen showing travel dates.  
Text: "Book days or minutes in advance."
- Screenshot 4:** A payment screen showing a card icon, the number "1234", and a "PROMO CODE" field. Below is a "BOOK PASS" button.  
Text: "Know the fare before you book."
- Screenshot 5:** A trip details screen showing the departure time ("Departs in 8 minutes") and the pick-up location ("11 Park View Ave, Boston, MA 02112").  
Text: "Walk to your pick-up spot."
- Screenshot 6:** A map showing the pickup location near the "Fenway Park" area.  
Text: "Track your Bridj in real time."



# Smart Mobility Providers

## Allygator: Ride-Sharing in Germany

door2door<sup>®</sup>

Home

Products

About Us

Careers

### CLOUD INTELLIGENCE FOR URBAN MOBILITY

Door2Door is a multi-award winning urban mobility startup. We provide a range of products - from city analytics and tracking solutions to a local transport app and demand responsive transit - that enable us to work towards our goal of personalizing city transport and making every journey effortless. Through our services we aim to drive the world's transition to an on-demand and personalized transport service.

#### OUR PRODUCTS



allygator shuttle

allygator shuttle is a revolutionary on-demand transport service that gets you from A to B with ease by grouping riders who are travelling on similar journeys.



ally mobility app

ally mobility app provides all multimodal options, taking you from A to B and everywhere in-between. ally mobility app is a benchmark in urban mobility.



TrackYourCity

TrackYourCity maps the transport system of your city, and works with you to find sustainable solutions for the future of your city.

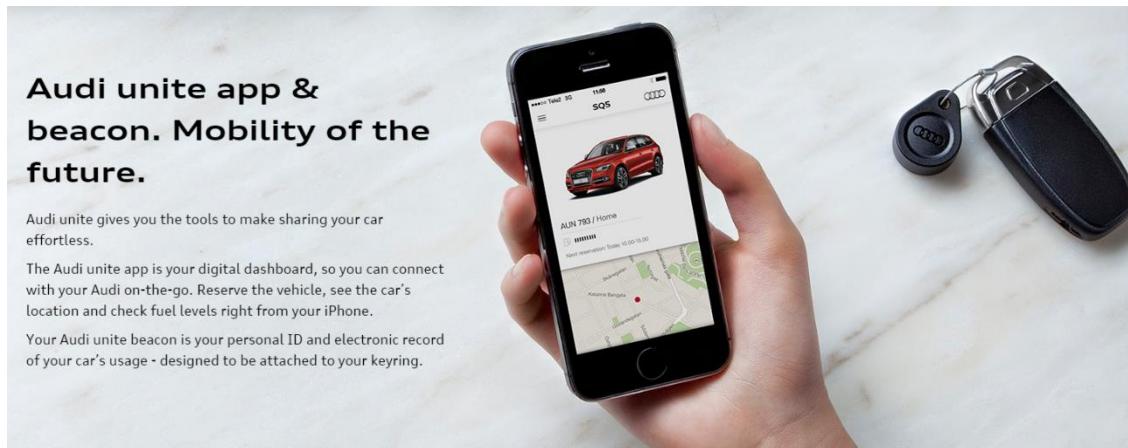




# Smart Mobility Providers

## Audi Unite in Stockholm

- Unite, a car-sharing pilot program
  - allowing up to five people to share “ownership” of an Audi car via a smartphone scheduling app, which allows all owners to reserve the vehicle, see the car’s location and even check fuel levels.
  - Aside from the app, owners receive a beacon to attach to their key ring, which electronically tracks personal usage.





# Smart Mobility Providers

## RideCell in Portland

RideCell      Product    About    Careers    News    Resources    Contact    Blog      REQUEST A DEMO

Run your world, better  
The leading business automation platform to launch, operate, and scale autonomous and new mobility services

<      >

RideCell powers ReachNow, BMW's car sharing service in Seattle and Portland, with plans to expand to 10 more cities  
[Learn more →](#)

BMW i Ventures Announces Strategic Investment in RideCell  
[Learn more →](#)

BMW i.

OUR BUSINESS AUTOMATION PLATFORM HELPS YOU LAUNCH, OPERATE, AND SCALE AUTONOMOUS AND NEW MOBILITY SERVICES



Autonomous

Use our operating system, rider, and driver apps to automate ride requests, dispatch, scheduling, routing, and notifications.



Multi-dimensional

Seamlessly combine ride-sharing, car-sharing, and dynamic fixed route services to move your customers in the most efficient way possible.



2X Efficient

Our insights and analytics help you increase the number of users while using your fleet more efficiently.



# Smart Mobility Providers

## *Split: Professional Ride Sharing in DC*



smarter shared rides

Split is a new way to get around town. Tell us where you're going, and our technology instantly connects you with people traveling in the same direction. Everyone saves money, every time.

All rides \$2-\$8.



1. Request a Ride  
Our technology instantly finds the best ride for you and shows you the price before you book.



2. Walk to Your Pickup  
Just a block or so away.



3. Grab a Seat  
We'll pickup and dropoff other people along the way.



4. Share & Save  
Save money every time, no matter how many people ride.



# Smart Mobility Providers

*Decentralised Autonomous Organisation*

- New Smart Mobility Providers looking for **Fair and Sustainable** offer are built as a Decentralized Autonomous Organization (DAO)
  - A DAO is an organization that is run through rules encoded as computer programs called smart contracts.
  - DAO's financial transaction record and program rules are maintained on a blockchain.
  - There are several examples of this business model. The precise legal status of this type of business organization is unclear.
- In a DAO, client and drivers are matched via a platform, in a peer-to-peer way, without involving any trusted tier.
  - The first transport DAO was Ia'Zooz in Israel.
  - When Lyft and Uber left Austin (USA) due to the new constraining driver policy, a new company was created: ArcadeCity. The company will propose a dual business model, direct matching with no fee, or going through the platform for a minimal fee, an integrated payments.



# Smart Mobility Providers

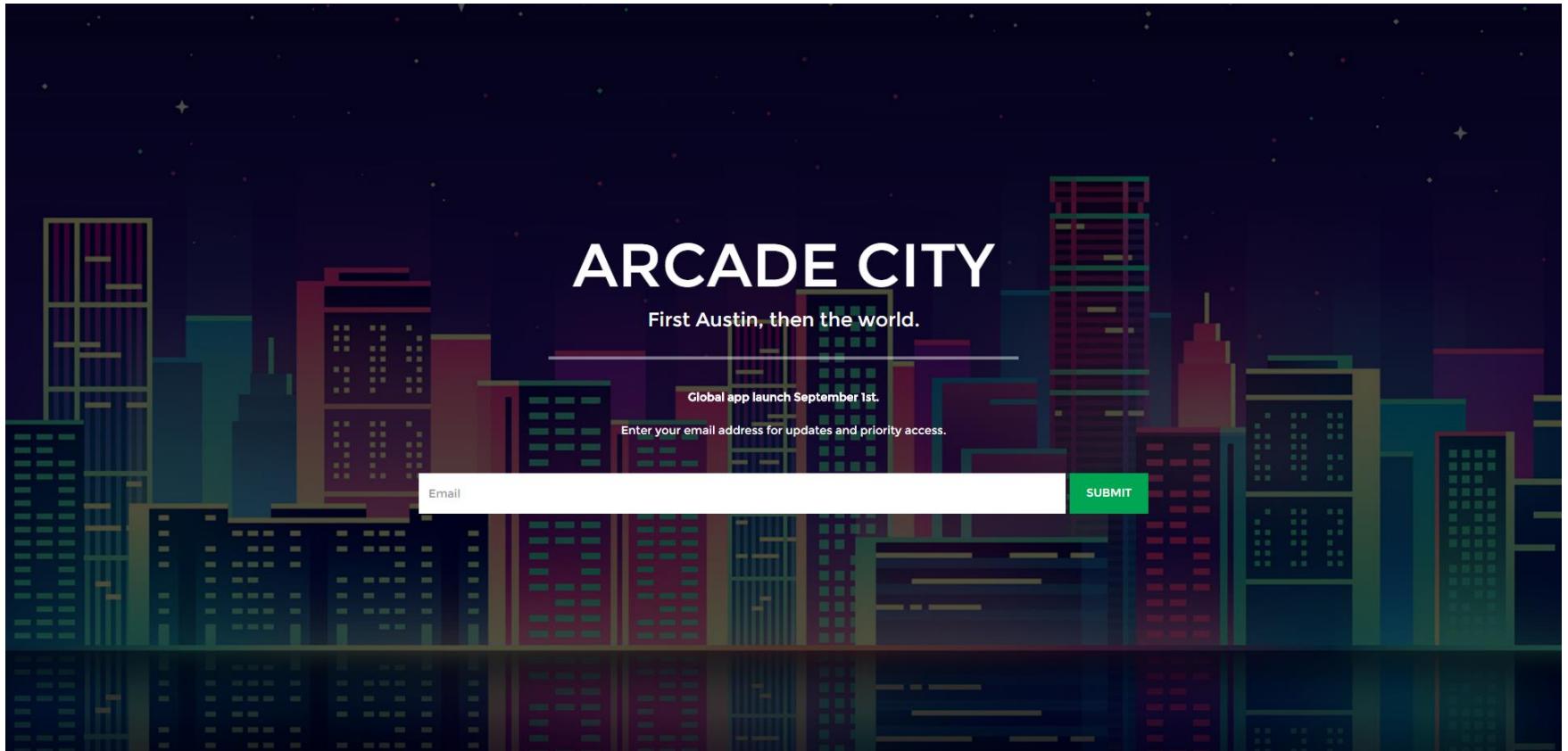
## DAO: LA Zooz

The image shows the La'Zooz homepage. At the top, there is a decorative header with a red bar and a colorful striped pattern. On the left, there is a small icon of a stylized tree or network. On the right, there are links: BACK LA'ZOOZ, BY THE PEOPLE, DOWNLOAD THE APP, WIKI, and FORUM. Below the header, the title "La'Zooz" is displayed in a large, bold font. A paragraph of text describes the platform: "La'Zooz is a Decentralized Transportation Platform that is owned by the community which turns vehicles' unused space into a variety of smart transportation solutions. By using cryptocurrency technology La'Zooz has developed a "Fair Share" rewarding mechanism for its developers, users and backers". Underneath this, there is a section titled "RideSharing vision" with a sub-section "The Road". The "RideSharing vision" section contains the text: "La'Zooz platform will synchronize empty seats with transportation needs in real time, and match like minded people to create a great ride-sharing experience for a "Fair fare". The "The Road" section contains the text: "Is being paved by people like you and me. Taking part makes La'Zooz come alive". The main visual element is a smartphone displaying the La'Zooz mobile application. The app's interface includes the La'Zooz logo, the text "COLLABORATIVE TRANSPORTATION", a city skyline illustration, and a navigation bar with letters G, S, and A. The phone is shown from a slightly elevated angle, with another smaller phone visible behind it.



# Smart Mobility Providers

*DAO: Arcade City*





# Plan

- *Macro Economic Factors*
- *New forms of Transportation*
- *Rise of Smart Mobility*
- *Smart Mobility Providers*

## Smart Mobility Integrators

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- Smart Mobility Aggregators
- Mobility As A Service (MaaS)
- Re-imagination is crucial
- Resources



# Smart Mobility Integrators

- Software companies are more and more getting involved in improving transport.
  - Apps like Moovit allow consumers to plan their journeys by stringing several trips together in the most efficient way.
  - Waze reroutes travelers away from heavy traffic.
  - Urban Engines uses real-time consumer travel data to help public-transit agencies visualize, analyze, and improve public-transit network performance.
  - Firms like TransLoc and RideCell are helping agencies to optimize and automate their operations by developing technology platforms to help them integrate flexible, on-demand services that can supplement their traditional high-occupancy, fixed-route fleets.

# Smart Mobility Integrators

- Definition
  - Mobility integrator is an entity or a combination of entities in the value chain which provides the right combination of various modes of transportation to offer an integrated, multi-modal door-to-door mobility solution using a mobility platform by leveraging technological expertise, operational excellence, infrastructural advancements and innovative business propositions.

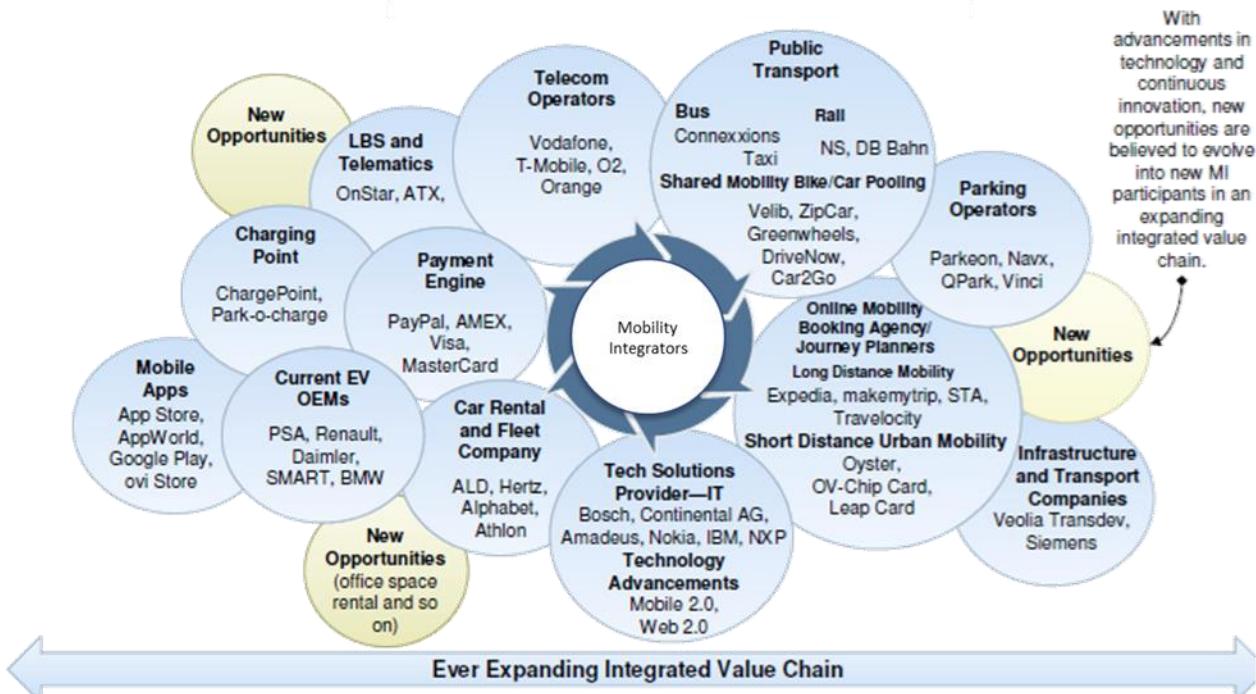




# Smart Mobility Integrators

## Extended Value Chain

- Ever expanding integrated value chain in the quest for totally integrated multi-modal door-to-door connected travel.





# Smart Mobility Integrators

## *Examples*

- The market is crowded ... and business models still to be invented.
- The offer could be a complete platform (mobile app, web site, routing algorithm, and API):
  - [Cityway](#) (FR), [Cubic Transportation Systems](#), [FluidTime](#) (Austria), [Instant System](#) (FR), [Rome2Rio](#) (Australia), [OpenTripPlanner](#) ecosystem (like [PlannerStack](#)), [Transloc](#), [Urban Engines](#)
- B2C Application
  - [City Mapper](#), [Moovit](#), [Moveeasy](#), [Swiftly](#), [Urbi](#), [Waze](#)
- Or just API to be used:
  - [Navitia.io](#) (Keolis, FR), [OpenTransportNet](#) (EU project), [Transitland](#) (from Mapzen), [TransitFeeds](#) (open source, US), [TransitTime](#) (open source, US), [TransportAPI](#)



# Smart Mobility Integrators

*BestMile*

HOME COMPANY AUTONOMOUS MOBILITY REFERENCES NEWS CONTACT US

Press F11 to exit full screen

## CLOUD INTELLIGENCE FOR DRIVERLESS VEHICLES

WE ALLOW SEVERAL VEHICLES TO WORK TOGETHER



### PLANNING AND SIMULATION

Planning and simulation of mobility services for public transportation



### REAL-TIME OPERATIONS

Setting up and operation of innovative mobility solutions in real-time



### ON - DEMAND SERVICES

On-demand solutions and services tailored for autonomous vehicles

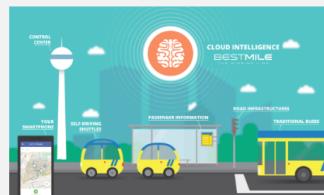


### REPORTING AND ANALYTICS

Reporting tools for detailed information on system's performance

## A COMPLETE ECOSYSTEM

TO MANAGE DRIVERLESS VEHICLE FLEETS



BestMile offers an ecosystem to manage autonomous vehicle fleets: a fleet management software, a smartphone application, a system for traveler information and solutions for the control of smart infrastructure.

Our platform works like a control tower, or "brain", enabling the control of many autonomous vehicles at the same time.

BestMile does not manufacture autonomous vehicles, but offers the solution to operate them together as a public transportation fleet.

TAKE A TOUR



# Smart Mobility Integrators

## Moveazy

moveazy

ACCUEIL • COMMENT ÇA MARCHE ? • COVOITUREZ ! • LES PARTENAIRES • CONTACTEZ NOUS

The Moveazy app interface is shown across four smartphones, illustrating the user flow:

- Indiquez l'adresse de destination** (Enter the destination address): Shows a map of Toulouse with a green search bar at the bottom.
- Choisissez votre trajet multimodal** (Select your multimodal route): Shows a red line on the map connecting two points.
- Sélectionnez votre itinéraire favori** (Select your favorite itinerary): Shows three itinerary options with details like departure time, arrival time, walking time, and cycling time.
- Voyagez comme vous voulez avec Moveazy !** (Travel how you want with Moveazy!): Shows icons for different transport modes: bus (orange), pedestrian (green), bicycle (blue), car (purple), train (yellow-green), and map (grey).

**Choisissez le mode de transport souhaité et sélectionnez l'heure et la date de votre trajet.**

**Moveazy intègre tous les modes de transport** : vélo, train, bus, métro, tram ou transport à la demande. Identifiez clairement les moyens de transport grâce à leurs couleurs associées.

**Sélectionner l'option que vous préférez** parmi les itinéraires proposés, et si besoin, imprimez votre feuille de route !

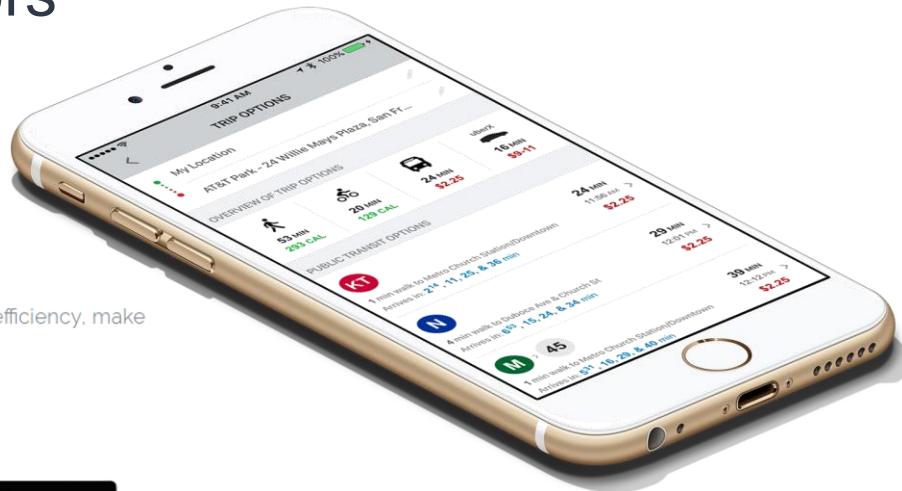
**Avec Moveazy, arrivez à destination en choisissant le mode de transport qui vous correspond !**



# Smart Mobility Integrators

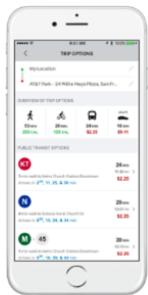
## *Swiftly*

Swiftly is a data-driven technology platform that helps transit agencies improve their operational efficiency, make smarter infrastructure investments, and better engage their riders.



### Swiftly Transitime

More accurate real-time arrival information for your riders



### Swiftly Mobile

A seamless multi-modal trip planning experience for your riders



### Swiftly Analytics

Instantly discover ways to improve your operational efficiency

<https://goswift.ly/>



# Smart Mobility Integrators

## Transloc

- The emerging TransLoc operating system can draw on Traveler data in two key ways.
- First, it can inform agencies that some of their fixed route service might be inefficient—say, by changing the number of buses or routes that run at different times of the day based on ridership.
- More critically, the new system will be able to recommend where transit agencies can supplement existing fixed service with a more flexible, on-demand option.



### TransLoc RealTime

Intuitive control center  
for any size agency

[Learn More!](#)



### TransLoc Rider

Best-of-breed  
transit mobile solution

[Learn More!](#)



### TransLoc Traveler

Your connection  
to your riders

[Learn More!](#)



### TransLoc OnDemand

Responsive transit  
made simple

[Learn More!](#)

Our mission is to take mass transit from last resort for some, to *first choice* for all



Your agency works *hard* to provide great transit—  
our products allow you to work *smarter*

TransLoc Real Time™

Our passengers can see you're en route and they have absolutely nothing to worry about.

[LEARN MORE](#)

TransLoc Traveler™

"This is the golden fleece of transit planning"  
— Jim Froehlich, CATA, Lansing, MI

[LEARN MORE](#)

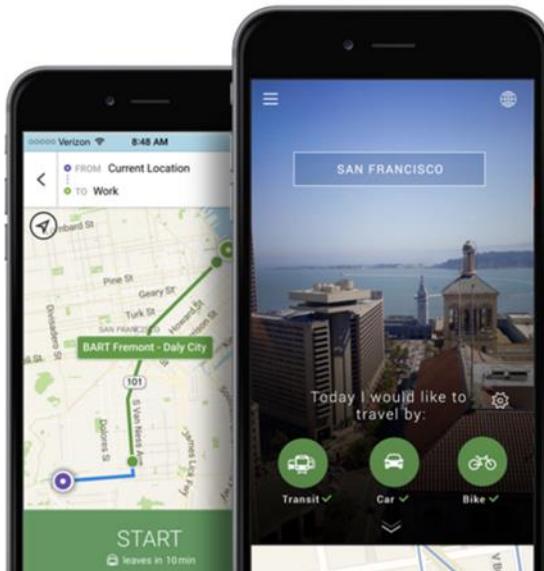


# Smart Mobility Integrators

## *Urban Engines*



FOR COMPANIES FOR CITIES FOR COMMUTERS



The Urban Engines app has single- and mixed-mode directions to your favorite places, instant orientation, and seamless online and offline access.

**Versatile – see biking, driving, walking, transit, and combinations:**

Like to bike to the train? Deciding whether to drive or taxi to the station? Know your best options and be on your way.



[Learn More](#)

Bought by Alphabet  
in Sept. 2016



# Smart Mobility Integrators

## Urbi: One App for All Shared Mobility Services

The Urbi app interface is shown across three main sections: **CHOOSE**, **SEARCH**, and **RESERVE**.

- CHOOSE:** Shows a sidebar with service toggles for Carpool, Bike, Scooter, Shuttle, Mobility, Charging spots, Gas stations, Traffic, Call a Bike Studio, Hostels, and Restaurants.
- SEARCH:** Displays a map of Berlin with vehicle icons and search results for "Smart 1.00 km 750m via Ossmannstr 5, 10117 Berlin".
- RESERVE:** Shows a reservation screen for a Smart car at "B-SOHN 174" with a map of the route.

**COMPARE**: Compare time and costs to reach your destination.

**BOOKING HISTORY**: Keep track of your past bookings: costs, durations and routes.

Plan Satellite

Edinburgh Edinburgh  
Edimbourg Royaume-Uni  
Bei de Man

Danmark

Lithuania Vilnius Minsk

Kazakhstan

Turkmenistan Turkmenistan

Oman

NEWSLETTER

CITIES FAQ JOBS f t EN



# Smart Mobility Integrators

## XXimo Mobility Card

EN

My XXimo | Menu

What can we help you with?

Apply now

✓ Say no to vouchers   ✓ No manual declarations!   ✓ All in one easy-VAT invoice

The most complete mobility card

The XXimo Mobility Card makes business travel easy

Request XXimo >

XXimo in 2 minutes

Our offer

A selection of our options:



### Refuelling

With XXimo you can refuel in Germany and all other EU countries. [View our refuelling network.](#)



### Parking and toll

Parking in car parks, at on-street ticket machines in major cities, at airports. Pay tolls on toll roads.



### Public transport

Buy your Deutsche Bahn train tickets with XXimo at ticket machines, from the counter or in advance online.



### Electric charging

Charge your hybrid or electric car at charging points within our network.



### Taxi

With XXimo, you can use any taxi within Europe that accepts Visa. In



### Business travel

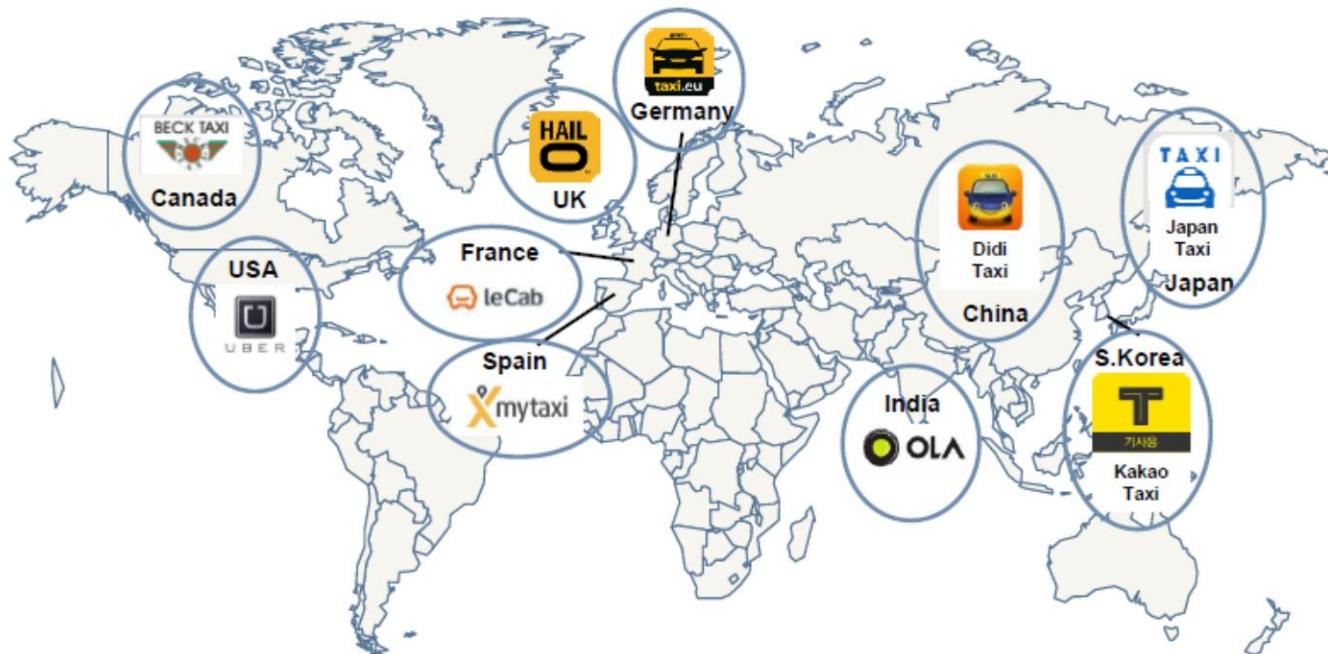
Book your airline tickets, hotels, car hire and international train travel



# Smart Mobility Integrators

## The eHailing Opportunity

eHailing is dramatically revolutionizing the taxi industry business model. By 2020 the global taxi market is expected to reach 5 million vehicles growing at a CAGR of 4%



F R O S T & S U L L I V A N



# Smart Mobility Integrators

Le.Taxi: A Taxi eHailing Platform Built by The Gov.

- Law passed in France in October 1<sup>st</sup> 2014
  - All Taxis will be identified in one system (instead of being managed by each region or city). All other Transport On Demand solutions are excluded from this system, Taxi only solution
  - Taxi “availability” and physical position for e-hailing will be pushed in real-time to a state governed system
  - Taxi “availability” and physical e-hailing will be possible by using an API provided by the state. So the information could be integrated in any application or search engine.
  - The full code of Open Data Taxi will be open-source
- Resources
  - [Web site \(English\)](#)
  - [API Documentation](#)



# Smart Mobility Integrators

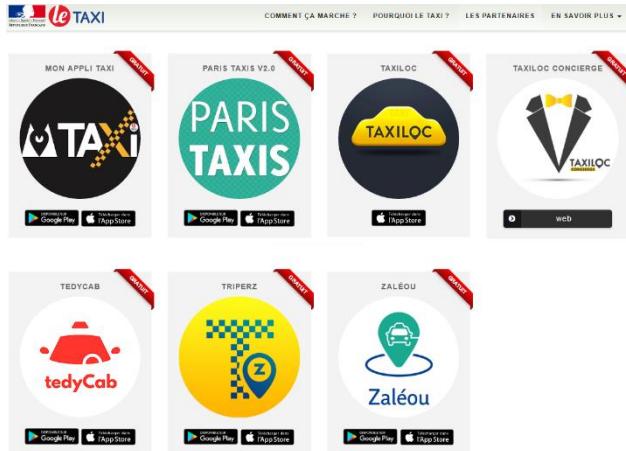
Le.Taxi: A Taxi Hailing Platform Built by The Gov.

- Two kinds of stakeholders are listed in the Open Data Taxi
  - **Search Engines**: people using the API and providing the information to clients (B2C) through mobile, web, etc.
    - Query the Open Data Taxi API to get the list of taxi around a GPS coordinate passed in the query and let the user select the taxi they want and hail it virtually
  - **Taxi Operators**: in charge of managing the transaction between the clients and the Taxi and of registering the taxis in the system
    - Taxi operator is in charge of background checking of taxis and registering them in the system
    - Taxi operator should provide a solution to the Taxi in order to let him register its position every 5s in the Open Data Taxi system
    - Taxi operator should manage dispute between taxis and clients and is in charge of ensuring the transaction is done or cancelled
    - Taxi Operators should be background checked by the French Gov.

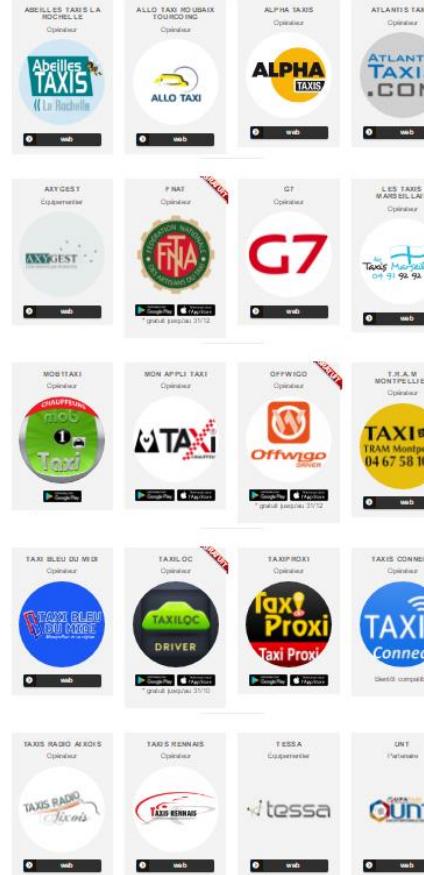


# Smart Mobility Integrators

## Le.Taxi: A Taxi Hailing Platform Built by The Gov.



Apps for clients



Apps for Taxi  
(released by  
Taxi Operators)

 Plan

- *Macro Economic Factors*
- *New forms of Transportation*
- *Rise of Smart Mobility*
- *Smart Mobility Providers*
- *Smart Mobility Integrators*

### Smart Mobility Aggregators

---

- Mobility As A Service (MaaS)
- Re-imagination is crucial
- Resources



# Smart Mobility Aggregators

- **Definition**
  - A **Smart Mobility Aggregator** is an entity which offers a selection of mobility services as core business either as standalone providers or through partnerships.
- **Smart Mobility Aggregators** are new mobility operators building both
  - **Digital platforms** (including on-the-go payment and ticketing systems), and
  - **Physical mobility networks** (parking zone for bike or car sharing).
- The objective for them is to become the mobility hub for any transportation need, and to offer one payment solutions for multi-mode of transportsations.



# Smart Mobility Aggregators

- Daimler MOOVEL
- FordPass by Ford
- Mobilitymixx
- OpenDataSoft + Navitia.io
- OpenTransportNet
- Siemens Mobility
- Transloc
- Transport API
- Xerox Transportation



# Smart Mobility Aggregators

## Daimler Mobility Services

### Integrated Platform and Direct Comparison

- Direct comparison of different mobility modes based on user selection



### Future of Mobility

- Expansion opportunities for Car2gether, Car2Share, and Car2go



### Bus and Rail

- The different available bus and rail connections are shown



### Ride Sharing and Taxi Cabs

- Search for available ride-sharing possibilities for a specific route (CarPooling partnership)
- A taxi can be ordered using the app.

### Decision-making enabler

- Prices, quickest time, and comfort levels

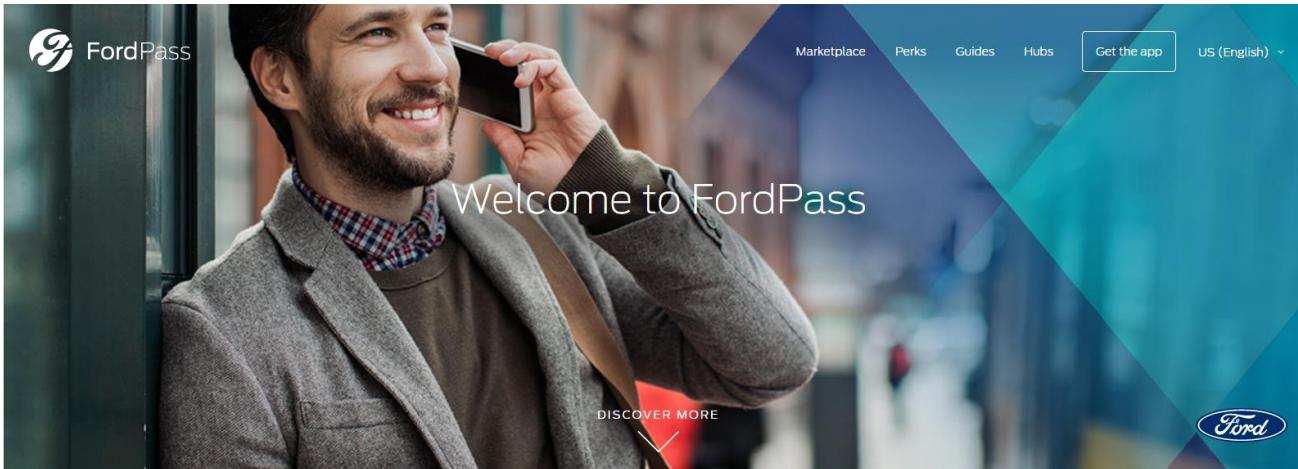


Source: Frost & Sullivan



# Smart Mobility Aggregators

## FordPass



Making your journey easier  
propels us further

We're taking steps big and small to bring you solutions that put you in control — from an app that keeps your on-the-go easier to creating innovative FordHubs that take mobility to a whole new place to the FordGuides who help you every step of the way.

DOWNLOAD THE FORDPASS APP



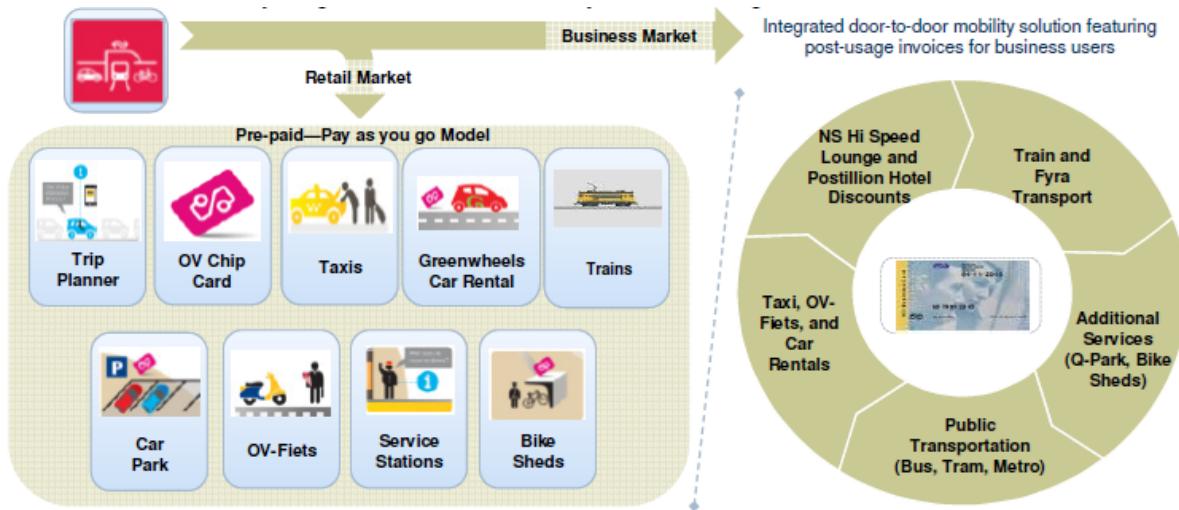
[https://www.fordpass.com/en\\_us/home.html](https://www.fordpass.com/en_us/home.html)



# Smart Mobility Aggregators

## NS Business Card

- 5% of business travelers use the train, while 95% use other modes of transportation, mainly cars, thereby opening up a number of avenues for NS to innovate.
  - The transit payment system that the NS Business Card employed on a national level, focuses on flexible post-paid payments rather than on a pre-paid system





# Plan

- *Macro Economic Factors*
- *New forms of Transportation*
- *Rise of Smart Mobility*
- *Smart Mobility Providers*
- *Smart Mobility Integrators*
- *Smart Mobility Aggregators*

## Mobility As A Service (MaaS)

- Re-imagination is crucial
- Resources



# Mobility As A Service (MaaS)

- Definition
  - *“MaaS is provision of transport via a real-time personalized service model that integrates all types of mobility choices and presents them to the customer in a completely integrated manner to get them from A to B as easily as possible.”*
- MaaS is a new concept in the transport sector; it provides a new way of thinking in terms of how the delivery and consumption of transport (or mobility) is managed:
  - Integrated and seamless mobility services offered to a client by a public or a private mobility aggregators.
  - MaaS is based on disruptive digital business services and models.
  - MaaS is generally based on subscription business model, but could accept micro-transaction
- **MaaS could be seen as an Over The Top service.**

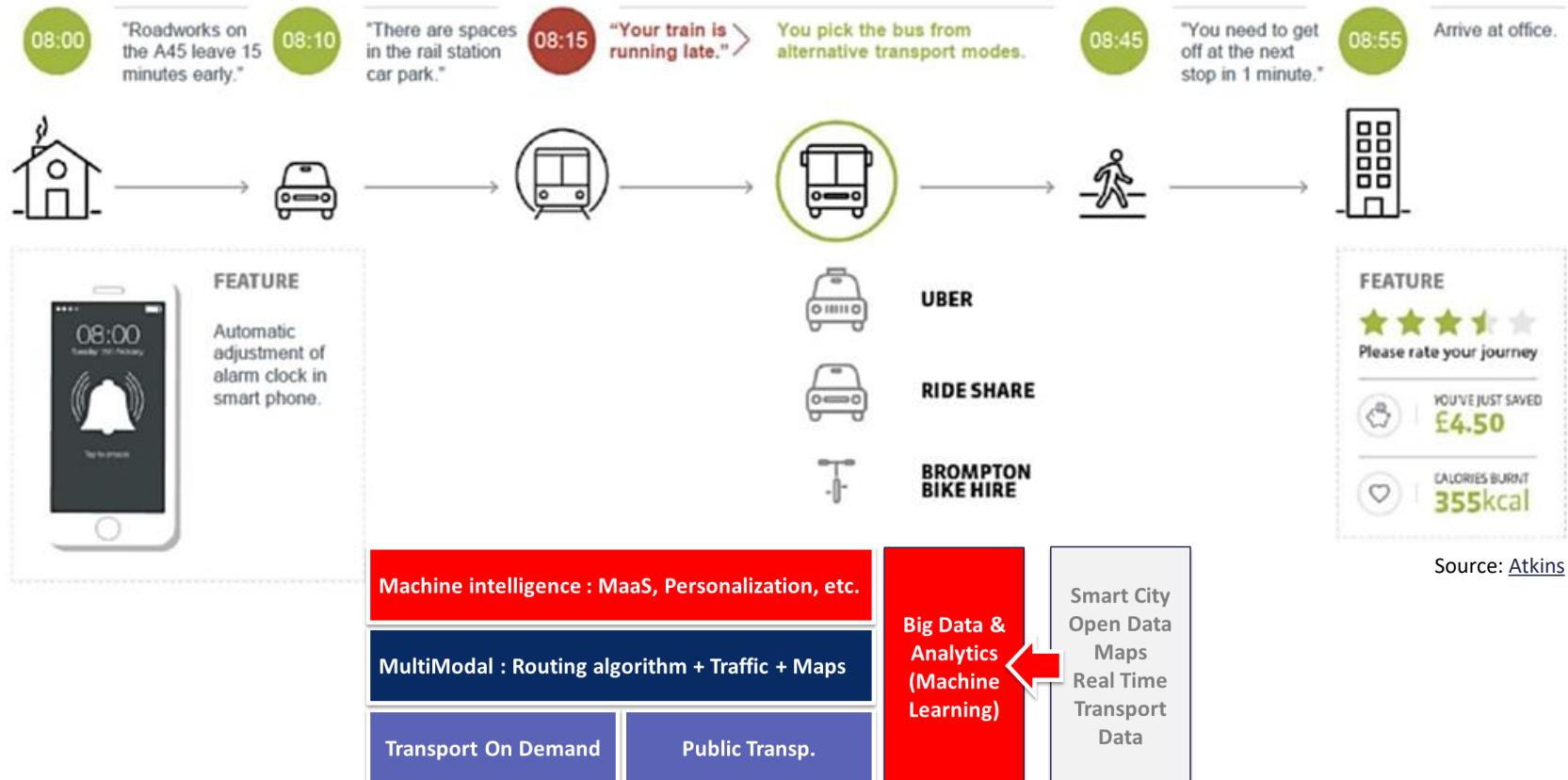


# Mobility As A Service

- From the user's perspective MaaS offers an attractive value proposition by providing a better customer experience in terms of:
  - Journey Planning: real-time journey planning allows a user to plan their journey, choosing from multiple modes that are 'intelligently' suggested based on their personal preferences (like for example, cost, comfort, time).
  - Ease of Transaction: The user can access mobility using a range of payment channels for example a phone, watch, smartcard or bank card regardless of which modes of transport they use.
  - Flexible Payment terms: The user can pay for their mobility choice via pre-pay, post-pay or pay-as-you-go.
  - User Experience: Data analytics will enhance the overall user experience. This feature may be seen as a virtual "concierge service" that provides the user with the best possible whole journey experience by managing the choices they make.
  - Personalized Service: A fully personalized service that builds a relationship between the user and the MaaS provider by allowing two-way communication. The MaaS 'service' will be highly customer relevant and focused and will react to user feedback.



# Mobility As A Service Over The Top Layer





# Mobility As A Service

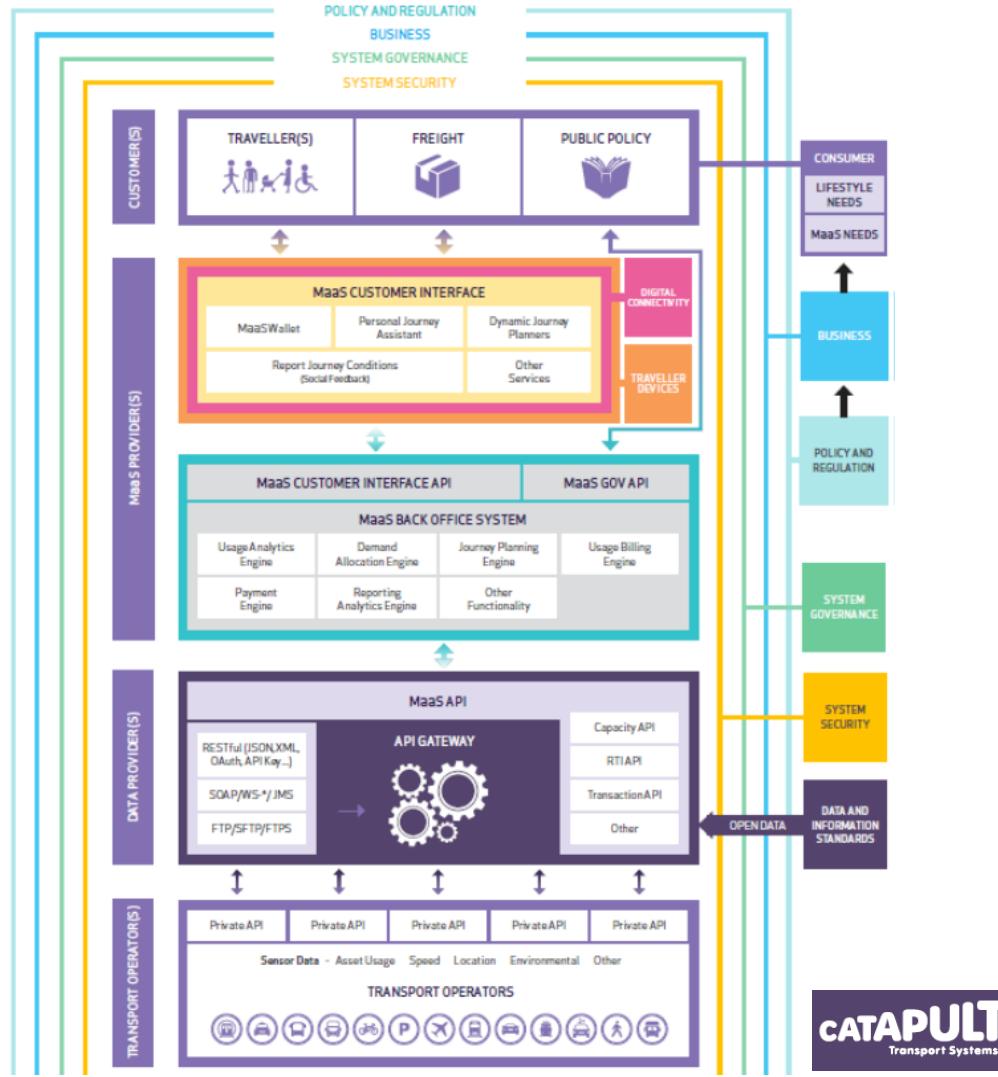
*Mobility Package at The Heart of the Offer!*



**EXAMPLE**

**“Get anywhere” mobility package  
for 300 €/month:**

- Transportation from A to B according to a service-level agreement (e.g. pickup in 7 minutes)
- Including all transportation (regional public transport, taxi, car and ride sharing, bike sharing etc.)
- Including transport related services (city logistics, home deliveries etc.)
- Roaming in other cities and countries





# Mobility As A Service

## *UbiGo*

- UbiGo was a public trial of a MaaS service, undertaken by project *Go:smart*, in the city of Gothenburg, Sweden.
- The project was developed as an attempt to create better conditions for sustainable travel by demonstrating how new business models and partnerships can reduce the need for private car ownership in favor of seamlessness, multimodality, and use of information technology.
- The project's vision was therefore to deliver an integrated mobility service for end consumers providing a seamless, multimodal journey experience including public transport interlinked with car and bike-sharing.
- The service attempted to bridge the gap between private and public transportation by taking on the role of a commercial actor, *a broker of everyday travel*, offering customized transport services to users to fit their personal needs and requirements via a smorgasbord concept.
- The project was delivered by a consortium of partners including local and national government bodies, academia and industry and was part funded (50%) by Vinnova (the Swedish Innovate UK). The total project cost was £1.5m.



# Mobility As A Service

## *Ustra & GVH in Hanover*

- February 2016 saw the launch of the second phase of üstra's and GVH's (Greater Hanover Transport Association) 'Mobility Shop,' **the very first fully operational example of MaaS.**
- The Mobility Shop is a truly multimodal version of the pilot scheme that began in November 2014. The core feature of the service is an integrated workflow that encompasses registration, routing, booking and invoicing for several transport modes (public transport, taxis, station-based and free-floating car-sharing).
- The service offers users the **possibility to tailor the bundle to their individual needs** and to directly book their journeys, whether it's a public transport ticket or a taxi ride with mobility options, including travel times, appearing in real time. All services are then invoiced by üstra via a monthly 'joint mobility bill'.
- More flexible than the original pilot, the service is not limited to annual season ticket holders of public transport anymore, thus offering itself towards a much broader share of the 'multimodal' target group.
- At a monthly fee of €9.95, Hannovermobil includes car-sharing membership and heavily discounted rates for car-sharing and taxi use as well as a free Deutsche Bahn discount card (BahnCard 25).
- Find out more:
  - üstra: [www.uestra.de/](http://www.uestra.de/) or GVH: [www.shop.gvh.de/](http://www.shop.gvh.de/)



# Mobility As A Service

*SMILE in Vienna*

- SMILE (Smart Mobility Information and ticketing system Leading the way for Effective e-mobility services) was a trial of multimodal mobility platform, undertaken in Vienna, Austria.
  - The platform was designed to integrate a journey planner, booking, ticketing and payment system into one service, with a number of transport modes available –public transport, car-and bike-sharing and private car.
  - The ticketing system was highly innovative, allowing the user to purchase one ticket for their whole journey –regardless of the number of modes.
  - The trial operated for a year and involved 1,000 users.
- In 2016, Vienna launched its own WienMobil-Lab app following on the SMILE project
  - Convenient access to bus, tram, metro but also to all publicly available mobility services such as e-loading stations, parking garages, taxis, Citybike, car sharing, car rentals and many more.
  - As well as being able to access real-time information about their journeys, users can also buy tickets, book, reserve and pay for other combined transport modes.



# Mobility As A Service

## SMILE in Vienna

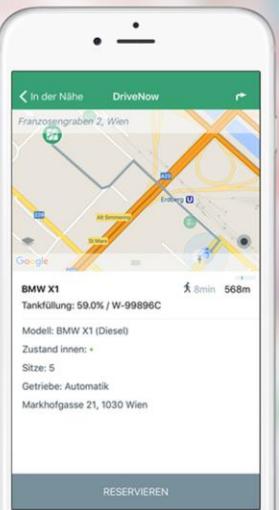
Bestellen Sie ein Taxi zu Ihrem aktuellen Standort.



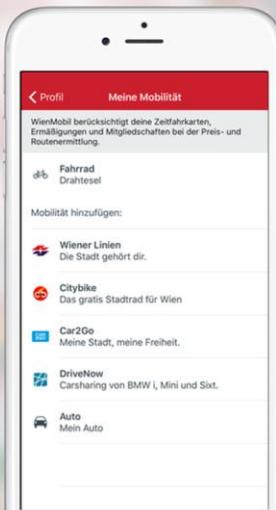
Wählen Sie für Ihre Wege die idealen Verkehrsmittel, auch in Kombination.



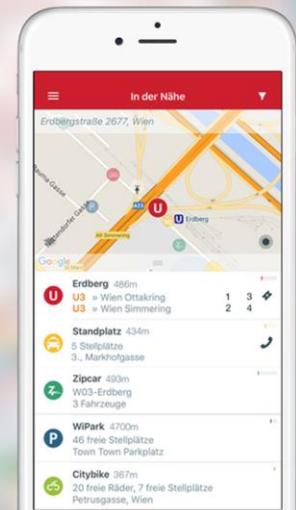
Buchen und reservieren Sie bei Bike- und Carsharing-Anbietern.



Profitieren Sie von individuellen Infos und maßgeschneiderten Angeboten.



Sehen Sie auf einen Blick alle Verkehrsmittel in Ihrer Umgebung.





# Mobility As A Service

*MaaS Global (ex: MaaS Finland)*

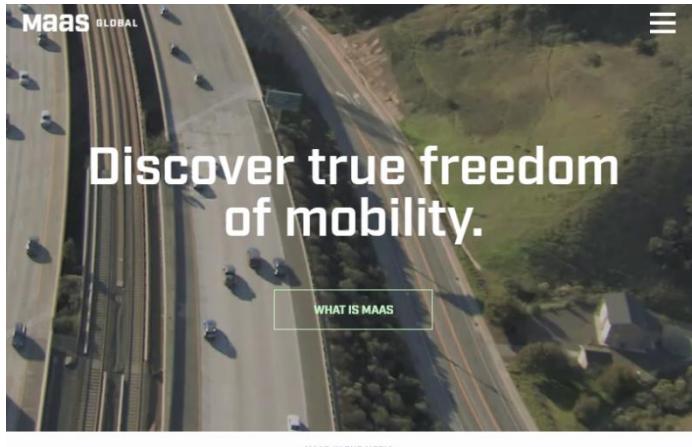
- Helsinki, which already has good public transit, is developing an ambitious on-demand mobility program that aims to make personal cars unnecessary by 2025.
- Under its new Mobility as a Service (MaaS) action plan, consumers will be able to use mobile apps to book and pay in one click for any trip by bus, train, taxi, bicycle, and/or car sharing.
- Helsinki is working with the private sector to develop and test the technology and co-finance the operation.
  - Now moving to global operations!





# Mobility As A Service

*MaaS Global App: WHIM*



MAAS IN THE MEDIA

HELSINKIN SANOMAT

the guardian

Talouselämä

WIRED

Join the MaaS mobility revolution.

Enter your email address

KEEP ME POSTED

Tweets by @maasfi

Maas Global Retweeted  
whim (@whimapp)  
Buumitakun startupin lipimurto - tänä seuraus  
yhdessä kanniksi liikkumisesta.  
mrtv.6@yle.fi#yleylesta

suomalaisen startupin lipimurto - tän...  
MORE TWEETS

MAAS GLOBAL

3:08

Where to?

Favorites: Home, Office, Gym, Pre-school

Upcoming: Meeting with Paul, Tennis course

Get ride

SIGN UP

f t i

## Whim is ready to go!

Whim is now in test use and will be released in the Helsinki region after summer 2016. Enter your email address and be one of the first to get Whim!

### Our solution – introducing Whim

Whim, our revolutionary mobile app, liberates people from timetables, fixed routes, parking worries and the high costs of owning a car. Born out of a need to be spontaneous, it gives people access to the huge variety of transport options around us, from taxis to rental cars, public transport and bike share. A Whim subscription means true freedom of mobility without any of the headaches.

The more Whim is used, the more it learns about users' preferences. Like a dynamic and intelligent personal assistant, it syncs with their calendar and suggests the best way to get to every event.

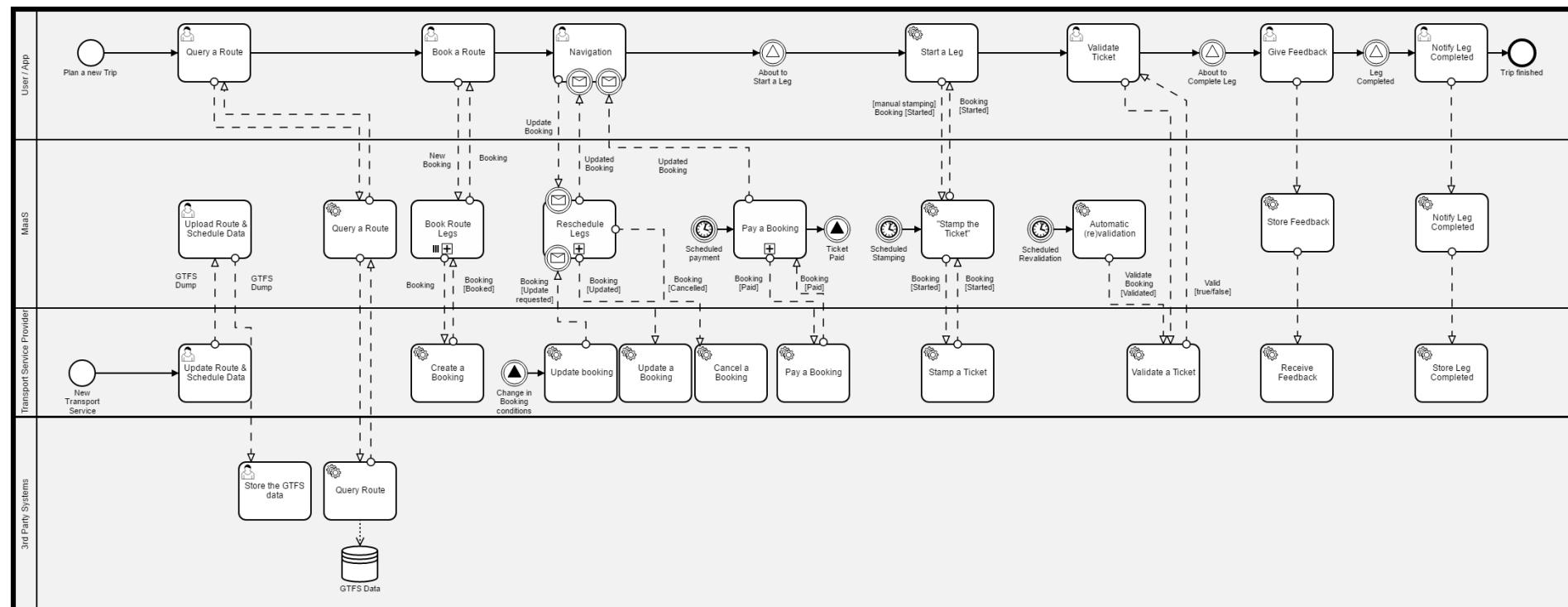
For transport providers, Whim is an exciting channel for demand-based promotions, such as great value rental cars or off peak taxi journeys.





# Mobility As A Service

## MaaS Global: MAAS API





# Mobility As A Service

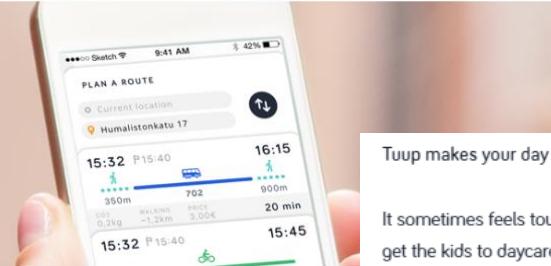
## MaaS App: Tuup



[Main page](#) Features Media Our team FAQ

English Suomi

An easier way to get  
from A to B



Tuup makes your day go smoother

It sometimes feels tough to get through the day: you have to get the kids to daycare, make it in time for the meeting and the other one after that, get to the shops and then your hobbies. Wouldn't it be nice, if you didn't have to think about how you're going to get there?

Press release - 16.06.2016

Shareit to develop mobile application for  
Car and Ridesharing – Piloted with Tuup in  
Turku Finland

Yleinen - 19.04.2016

First version available for download in April  
2016

With Tuup you can plan and pay for all your everyday trips beforehand or while you're on the move. It's easy to compare the speed, price and emission rate of different options like the bus, a bike, taking a taxi or a rental car. Tuup learns your preferences from the choices you make. And when things don't go according to plan – whether a meeting goes late or you miss the bus – Tuup quickly figures out a new alternative.





# Mobility As A Service

## Xerox GoLA



### Multi-Modal

The best trip to your destination using any mode of transport



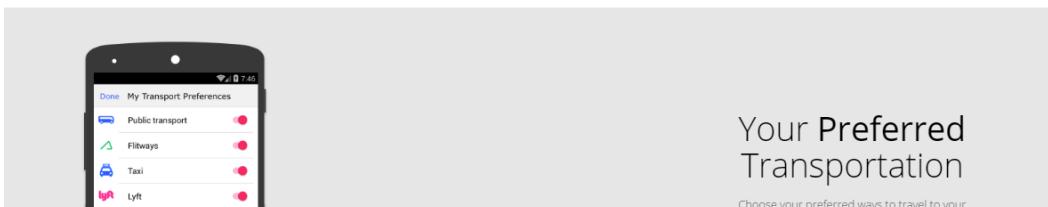
### Compare

Compare optimized trips tailored to your preferences



### Bookings

Make bookings with your favorite ride services



<http://golaapp.com/>



# Mobility As A Service

## Moovel Travel

moovel transit

Products Clients REQUEST A DEMO

The future of mobile ticketing is here.  
See how moovel transit delights riders  
and drives innovation.

REQUEST A DEMO



Advanced Fare Collection  
Smartcard management, mobile purchases, and trip planning.



Connected Experiences  
Complementary partnerships and technical integrations.



Simplified Operations  
Real-time analytics, transaction data, and insights

Our applications integrate seamlessly into complex back-office environments.



Transportation solutions that  
riders love and agencies trust

"We wanted to give our customers a secure and convenient way of purchasing and validating tickets and GlobeSherpa's mobile ticketing system is a tremendous leap forward for our riders."

VRE Chief Executive Officer Doug Allen

the moovel transit platform

Rider App

Empowers riders to pay for rides on the go, plan trips, explore real-time arrival and departure times, and receive service alerts.

[learn more](#)



Rider Web

Enables riders to purchase and manage fares through an agency-branded eCommerce website.

[learn more](#)



Inspector App

Simplifies real-time ticket inspection, validation and citation from any device.

[learn more](#)



TOMS

Streamlines transit transaction and operations management with an easy to use interface.

[learn more](#)



RideTap

Connects riders to first and last mile transportation services, enhancing any transit experience.

[learn more](#)





# Mobility As A Service

## Qixxit

partner



MATZES-MOBILIS



busandfly



opodo



BlaBlaCar



Citybus  
Dresden



HKX



STADTRAD  
LÖNEBURG



SEHR GUT



Let us show you the best way  
from A to B

<https://www.qixxit.de/en/>

Integrates numerous country-wide mobility services: local and long-distance public transport, car rental, car and bike sharing, taxis, long-distance buses, airlines.



# Mobility As A Service

## Travel Spirit

The TravelSpirit website features a dark header bar with the logo 'TravelSpirit' and the tagline 'CODE-EVOLVE-TOGETHER'. Navigation links include 'Become a Member', 'Join Us', 'Search', 'Home', 'Press F11 to exit full screen', 'Mission', 'Partners', 'How to Join', 'Resources', 'Events', 'Contact Us', and 'Login'.



### Latest news



#### French Environment & Energy Management Agency Seed Fund TravelSpirit Community Growth

We're excited to announce a major boost to the TravelSpirit Community: the launch of a €200k grant programme for incubating open source projects for accelerating the deployment of carpooling and large-scale ride-sharing. Ademe

[Read More...](#)

### The Engine Oil Behind 'Mobility as a Service'

TravelSpirit is an openly governed community and source code commons for collaborative open source projects supporting Mobility as a Service products and services.

[Read More...](#)



#### Mobility as a Service (Maas)

Personal, routine travel in the meshed society must mean Mobility as a Service. [Read more](#)



#### The impact potential of the meshed society

Society is transforming from the hierarchies of the industrial age to the peer meshes of the Internet age. [Read more](#)



#### TravelSpirit is open source

An open source model leverages copyright to create innovation, collaboration and market growth. [Read more](#)



#### TravelSpirit is based on open development

Open development occurs when all decisions are publicly documented, all resources are open source and all bona fides participants have equal rights. [Read more](#)



#### TravelSpirit is true collaboration

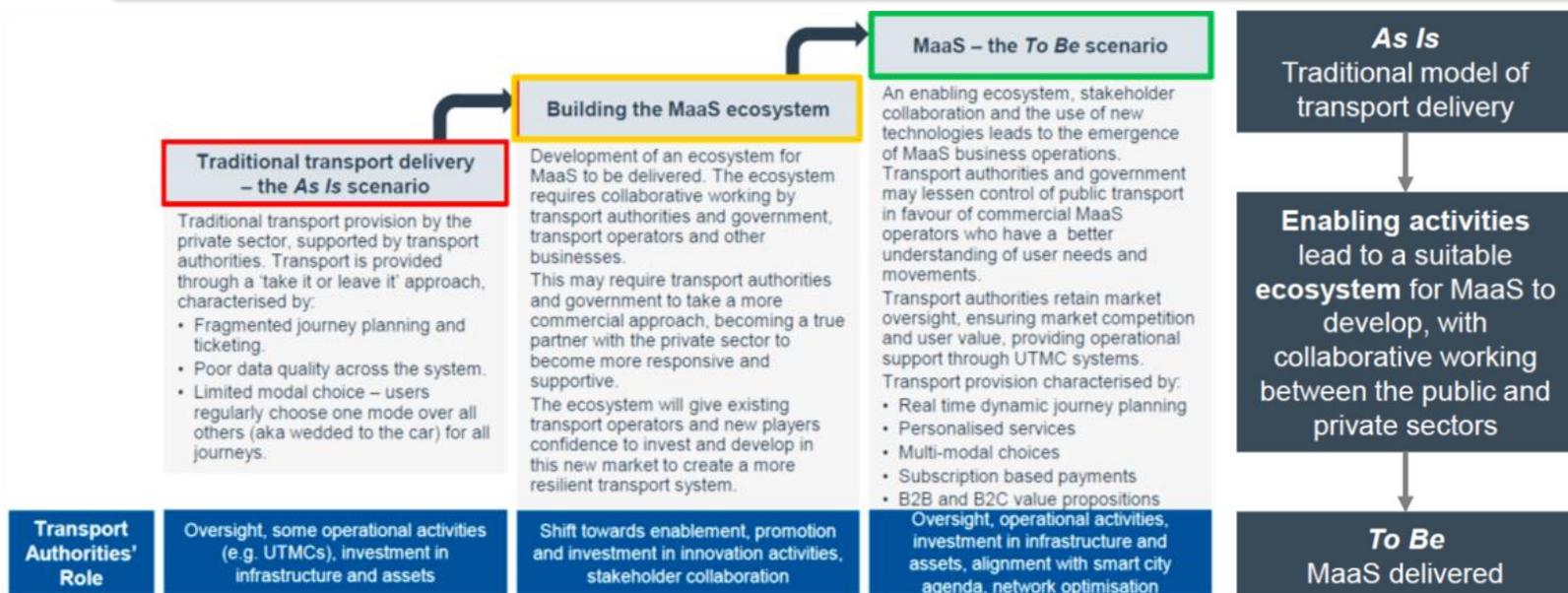
We are embracing the sharing and collaboration vision of the Creative Commons. [Read more](#)



# MAAS: Transport Authority Major Role

The delivery of MaaS requires a wide range of capabilities, many of which are available from the private sector (particularly in the areas of providing mode choice).

the selection and choice of which MaaS capabilities are procured and how different private sector investors complement each other to enhance the total value of an consortium, should be examined.





# Plan

- *Macro Economic Factors*
- *New forms of Transportation*
- *Rise of Smart Mobility*
- *Smart Mobility Providers*
- *Smart Mobility Integrators*
- *Smart Mobility Aggregators*
- *Smart Mobility Aggregators*
- *Mobility As A Service (MaaS)*

**Re-imagination is crucial**

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- Resources



# Smart Mobility Ecosystem

On-Demand  
Mobility  
**chariot**



**motivate**  
get going

Zagster

**Bandwagon**

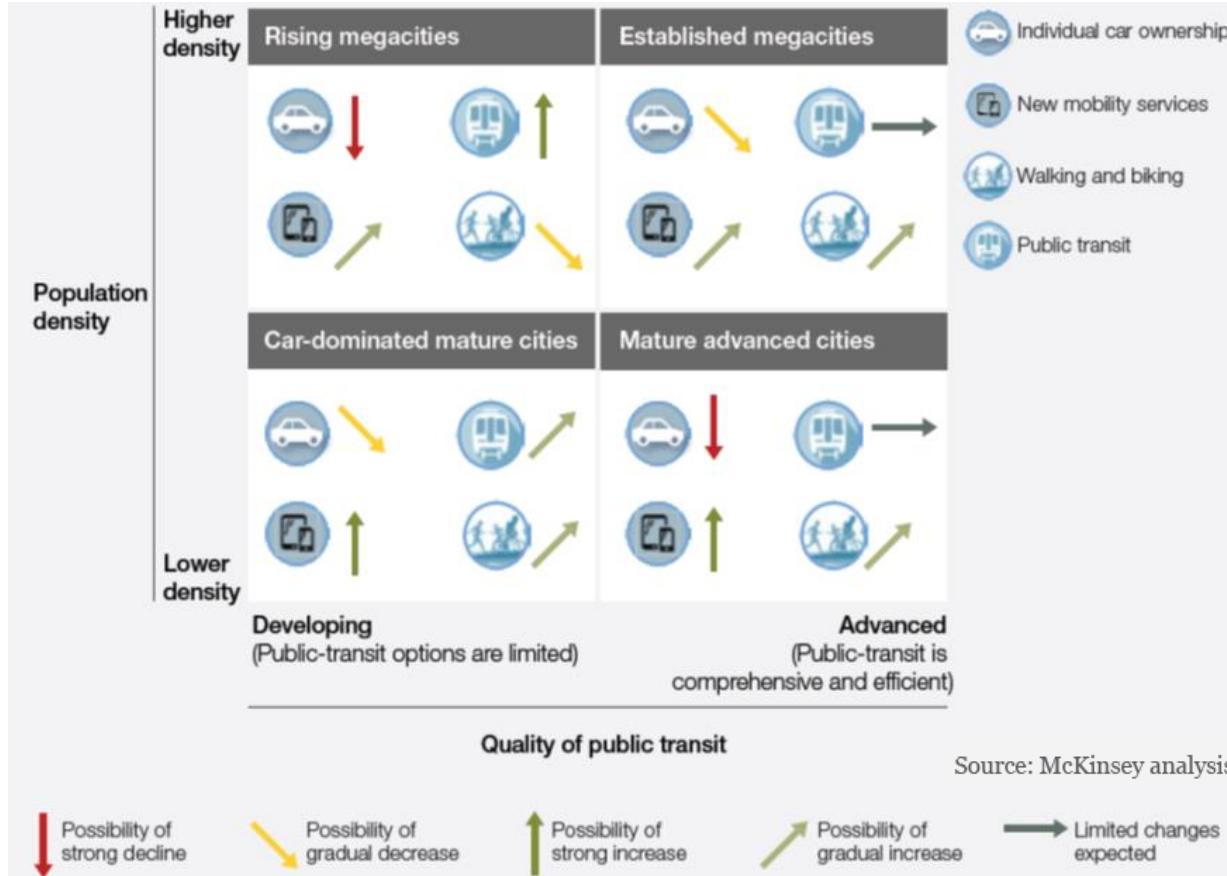
## THE SMART MOBILITY ECOSYSTEM

Curated by:





# How Mobility is Likely to Change by Type of City?





# Re-imagination Is Crucial

- New and improved mobility services are making transportation ever more multimodal, on-demand, and shared, increasing consumer choice and convenience.
- One consequence is that the overall transportation system will become more digital and therefore more efficient by better matching demand and supply in the short and midterm because of improved data and analytics capabilities.
- Another is that public transit will likely face competition from new private-transit approaches.
- Which of these mobility services and underlying business models will survive and scale up remains to be seen!
  - The key is that the economics need to be sustainable; that means that providers have to ensure that operating expenses and services are competitive.
  - Consumers will be choosing from a range of options; convenience and cost will therefore be critical factors. The market will weed out services that fail on those counts.

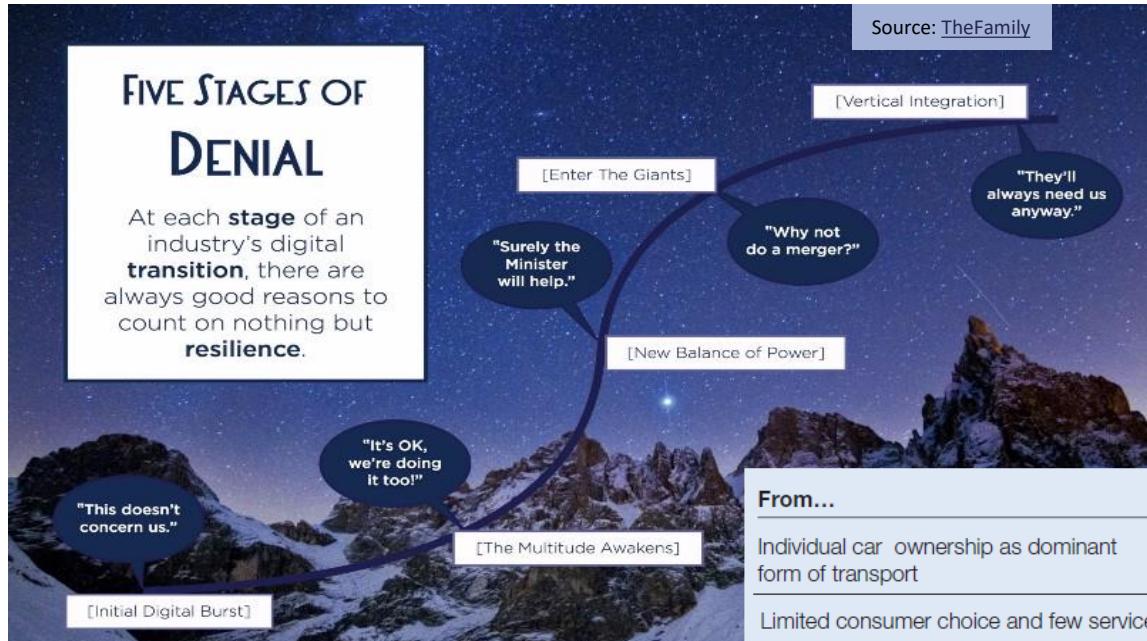
Source: McKinsey analysis



# Digital Darwinism

## FIVE STAGES OF DENIAL

At each **stage** of an industry's digital **transition**, there are always good reasons to count on nothing but **resilience**.



Uber, Bridj, Transloc, RideCell have made mass transit agencies realize that their captive ridership could actually be threatened over time.

From...

Individual car ownership as dominant form of transport

Limited consumer choice and few service levels

Government-funded public transit

Unconnected, suboptimal, transportation systems

Source: McKinsey analysis

Toward...

Individual car ownership as one form of multimodal, on-demand, and shared transport

More consumer choice and many service levels

Public and private transit operate in parallel

On-demand, connected systems that use data to unlock efficiencies



# Some Will Fail...

The image shows the Leap shuttle service website and a mobile phone displaying the app interface against a background of a San Francisco cityscape at sunset.

**Website Header:** leap

**Website Text:** suggest a route | faq | blog | [Facebook](#) | [Twitter](#)

**Website Slogan:** San Francisco, we've built a better bus.

**Website Input:** Type in your mobile number and we'll send you a link to the app.

**Mobile App Screen:** All CARRIER 4:00 PM Pass

**Map Labels:** Chestnut & Fillmore, Next Pickup 7:09 AM, 101, Yacht Rd, Marina Green Dr, Marina Blvd, Marina Bay, Alhambra St, George R Rec Ctr, COW HOLLOW, Lombard St, Greenwich St, Filbert St.

## Leap is a shuttle service for San Francisco commuters

Leap is the best way to get to work. Our shuttles will take you downtown in the morning, and back home in the evening. Our first route, the Chestnut Express, services the Marina. We'll be adding more routes soon - so [let us know](#) where you'd like to see Leap go.



# Some Will Fail...

E-mail Mot de passe OK Mot de passe oublié ?

PEUGEOT RÉSERVATION VÉHICULES OÙ LOUER ? PROMOTIONS DÉCOUVRIR MU BY PEUGEOT

**mu by Peugeot**



**VOITURES UTILITAIRES**

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Retour dans une agence différente

Date de retour 25/02/2014 12h00

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NOTRE OFFRE >

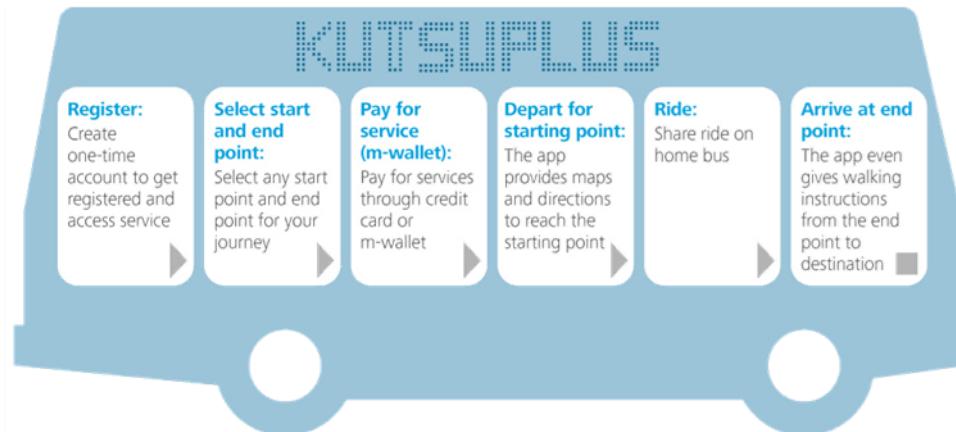
Location voiture Carte GPS Itinéraire multimodal Partage voiture

Multicity by Citroen



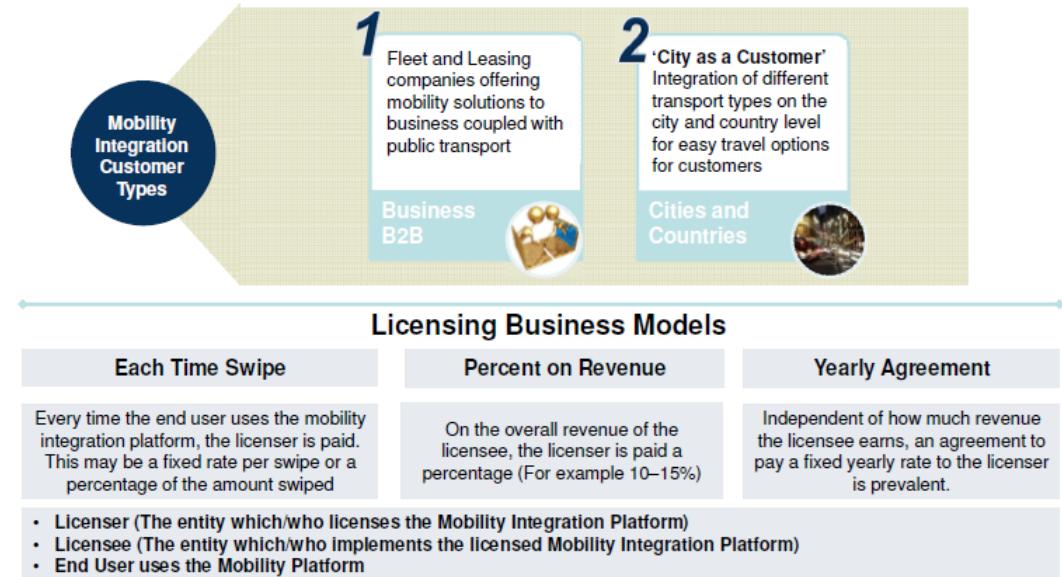
# Some Will Fail...

- Why Helsinki's innovative on-demand bus service failed?
  - Operated by the Helsinki Regional Transport Authority, Kutsuplus was the best-known component of Helsinki's and Finland's intelligent traffic system.
  - Two things ultimately killed Kutsuplus. First was the need for massive scale to make the economics of ride-sharing really work. Second was the significant public cost of doing that.



# »»» Re-imagination Is Crucial!

- A large portion of 2020 revenues are likely to come from products and services that don't even exist today
- Advances in technology without a change in business model nor traction are mere productivity gains from the multitude's standpoint, and are commoditized in the blink of an eye, preventing the company from differentiating itself.





# Re-imagination Is Crucial!

## *Startups Are Re-imaginating Mobility*

**UberPool** and **Lyft Line** allow consumers going in the same direction to share a ride in exchange for fares that can be up to 50 percent less. UberPool offers \$7 rides anywhere within the city of San Francisco and has launched a similar service in Los Angeles, New York, and Paris. More cities will follow. Lyft says that up to 90 percent of all rides in San Francisco can be shared if riders are willing to wait five minutes.

**Via Transportation** and **Chariot** offer on-demand shared shuttles for \$5 a trip; this is more expensive (and comfortable) than a public bus but cheaper than a taxi. Unlike the fixed-route bus system, these services can operate with minor route deviations to make journeys more convenient, and the only stops are those requested by the riders.

The start-up **Bridj** offers point-to-point bus service in the Boston area. Its data-science team considers everything from census data to social-media posts to figure out where a city has the biggest need for bus service. The on-demand app also optimizes pickups, drop-offs, and routing based on demand. Bridj says it has cut some Boston commute times in half compared with public transit. Fares cost more than the typical subway fare but are unlikely to exceed \$5. Bridj plans to expand to Washington, DC.

**Moovit** is a free app that allows commuters in hundreds of cities to plan and monitor their public-transit trips. Moovit gives commuters a real-time snapshot of what their trip will be like and suggests the fastest, most comfortable way to get from point A to point B. The Israeli company, which started in 2012, recently raised \$50 million in venture capital to continue expanding.

**BlaBlaCar** connects drivers with empty seats and paying passengers to offset distance travel costs. The Paris-based company operates in 19 countries, mostly in Europe, as well as in India and Mexico.

**Easy Taxi** is a global e-hailing service that reports 20 million users in 420 cities in 30 countries; it says it is “the most downloaded taxi app in the world.” It concentrates on developing countries and has operations all over South America, as well as in Jordan, Kenya, Nigeria, and much of Southeast Asia. Because personal security is an issue in many of its markets, Easy Taxi promises background checks and training for its drivers. It also takes payment over the phone—crucial in areas where just about everyone has a mobile and few have a credit card.

Source: McKinsey analysis



# Re-imagination Is Crucial!

*The “Fabrique Des Mobilités” (fabmob)*

- First European accelerator dedicated to the rapidly changing ecosystem that is transportation and mobility.
- Brings together players and projects, capitalizing on experiences, feedback and errors in order to create a common culture of innovative action.
- Fabmob is pushing the concept of Decentralised Autonomous Organisation to facilitate disruptive innovations to emerge from its members.



# Re-imagination Is Crucial!

## *Sidewalk Lab (from Google)*

SIDEWALK LABS

Why Now? Principles Platform Products Team News & Contact Blog

### Digital Technology Is Ready to Transform Cities

Smartphones already shape how people interact with cities. A new set of digital technologies—ubiquitous connectivity, real-time sensors, precise location services, distributed trust, autonomous systems, and digital actuation and fabrication—can collectively transform city life. But towards what end? Will they make the city more responsive, equitable, innovative, and human or will they challenge civil liberties and security?



We believe digital technologies have the potential to solve today's pressing urban problems in ways that respect privacy—serving as a bridge to cities of the future.

#### Challenge

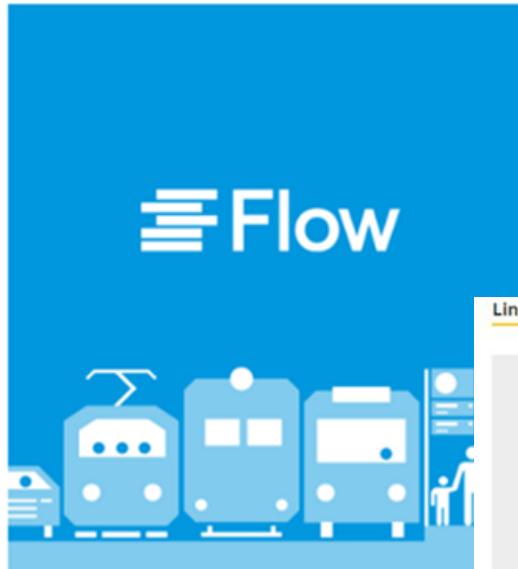
- High cost of living occurs when housing demand outpaces developed land and infrastructure.
- Congested commutes result from decades of sprawl and lack of coordination in transportation demand and supply.
- Public health crises include rising rates of obesity in developed cities and pollution in developing ones.
- Fossil fuel dependency risks urban resilience and air quality.

#### Opportunity

- Modern affordable housing is enabled by performance-based code, advanced materials, and new ownership models.
- Digital mobility systems can manage limited road space to improve transportation equity and air quality.
- Personalized social services can deliver measurable health outcomes while maintaining individual privacy.
- Distributed energy management uses new business models, renewable energy, and smarter storage to improve sustainability.

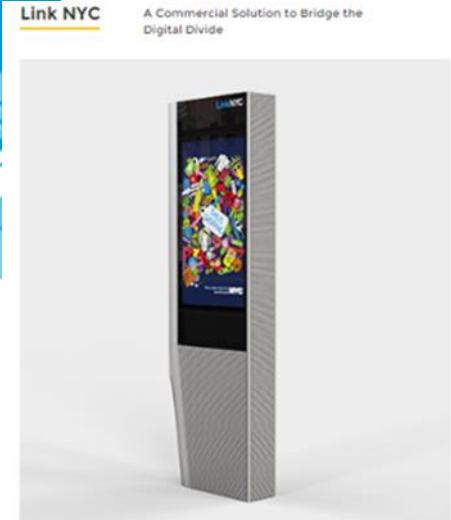
Flow

The Transportation Coordination Platform for Cities



Link NYC

A Commercial Solution to Bridge the Digital Divide





# Re-imagination Is Crucial!

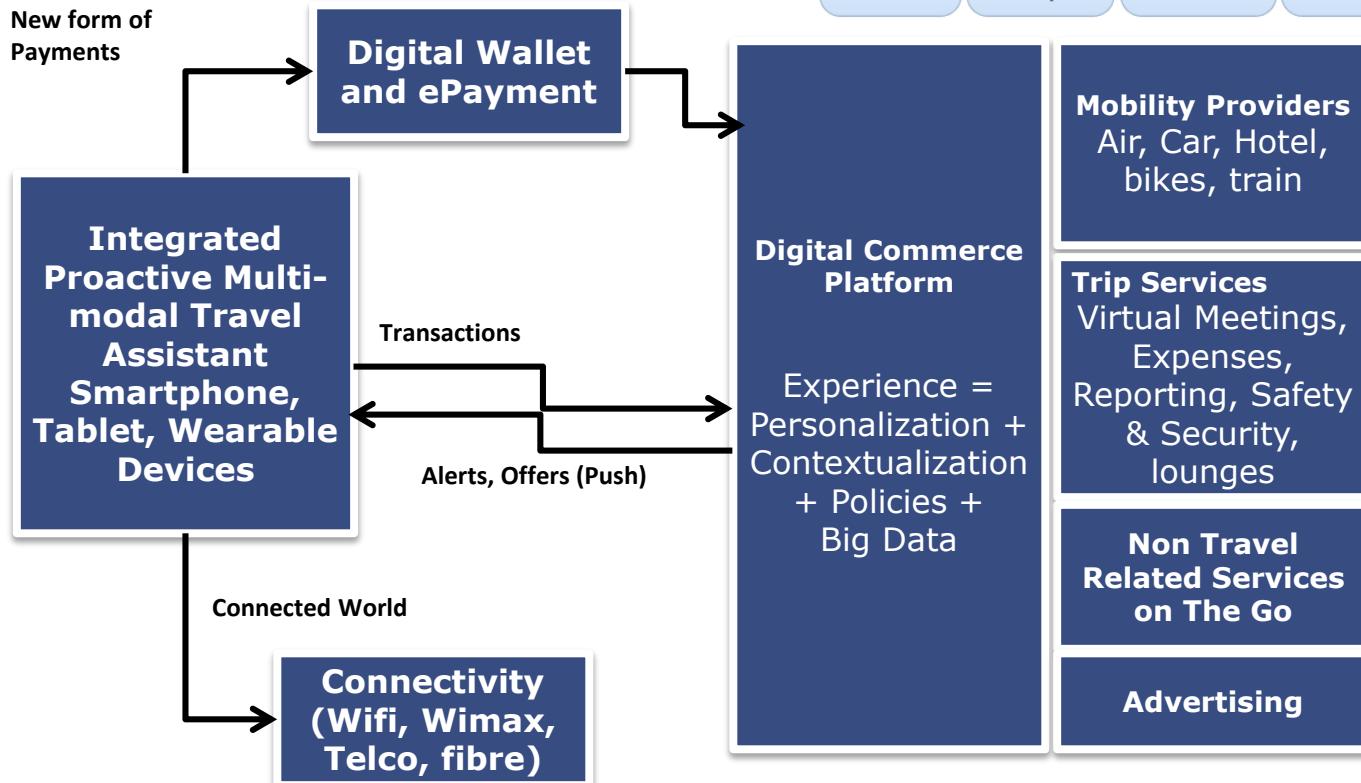
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# Re-imagination Is Crucial!

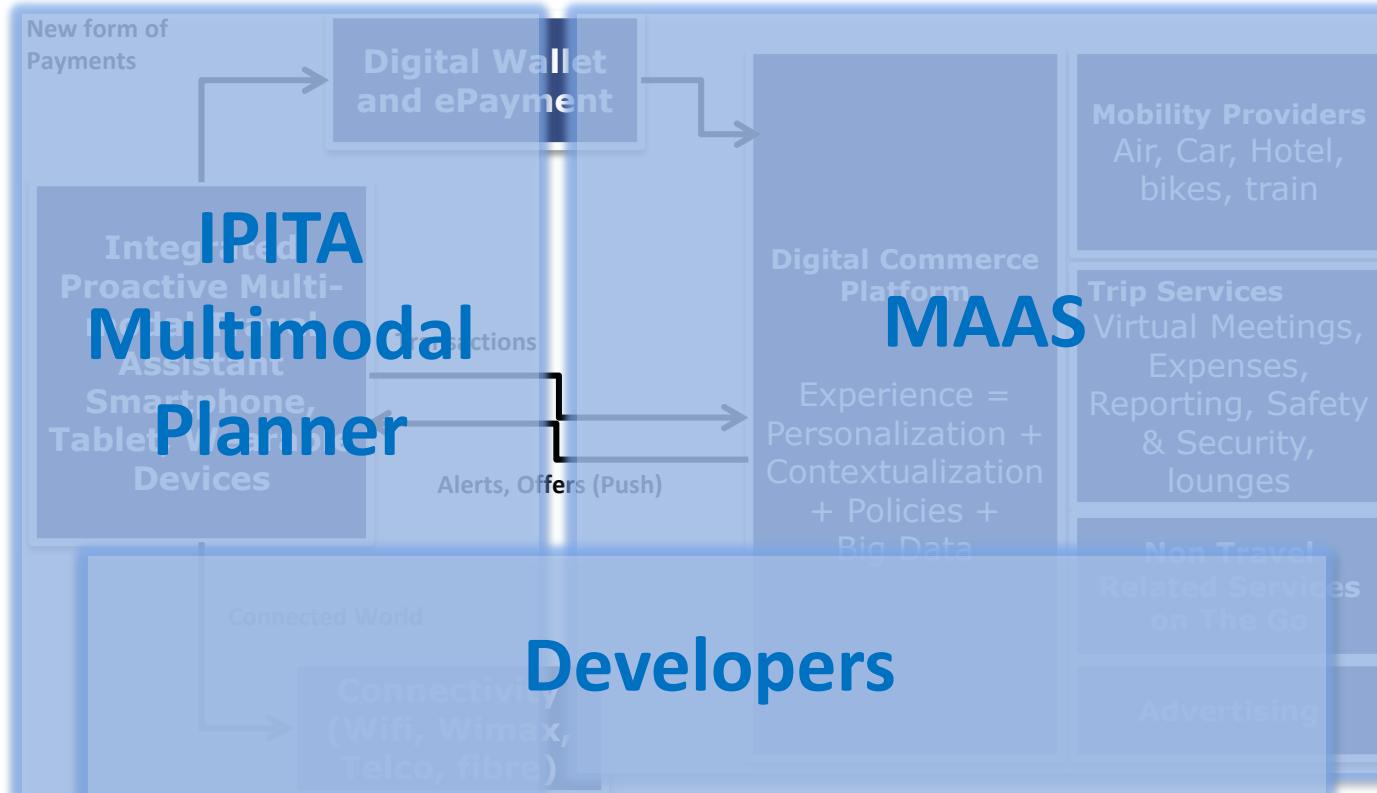
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# Re-imagination Is Crucial!

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# Plan

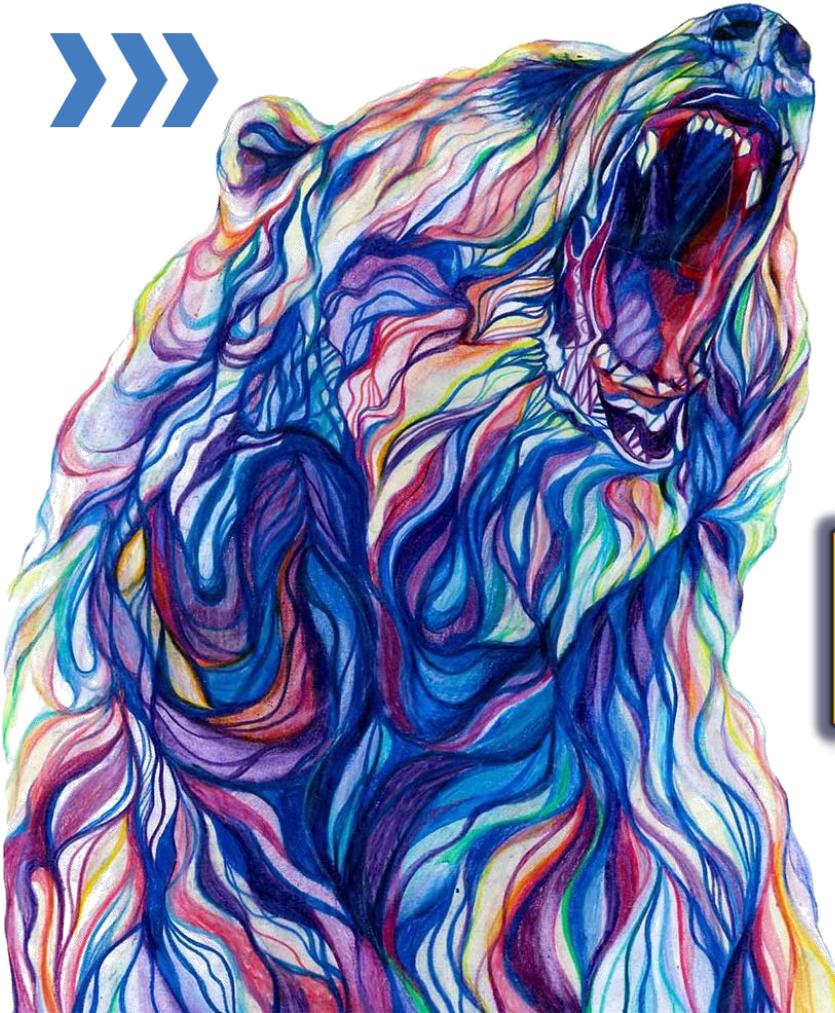
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- *Smart Mobility Integrators*
- *Smart Mobility Aggregators*
- *Smart Mobility Aggregators*
- *Mobility As A Service (MaaS)*
- *Re-imagination is crucial*

## Resources



# Resources

- "Developing Intelligent Mobility and exploring Mobility as a Service" from ATKINS.
- "Mobility-as-a-Service: from the Helsinki experiment to a European model?" by FSR.
- "Mobility as a Service: Exploring the Opportunity for Mobility as a Service in the UK" by Catapult.
- "Connected World Hyperconnected Travel and Transportation in Action" by World Economic Forum and The Boston Consulting Group
- "Urban mobility at a tipping point", McKinsey Center for Business and Environment September 2015
- "Future of Mobility Collection", Deloitte
- "Shared Mobility: How new businesses are rewriting the rules of the private transportation game" by Roland Berger
- "Bringing Mobility as a Service to the U.S.: Opportunities and Challenges" by Carol Schweiger
- Slush MaaS Panel discussion (2015) with Karen Roter Davis (Urban Engines), Jo Bertram Uber), Sonja Heikkilä (Tekes), Lucy Yu (UK Department for Transport) Moderated by Sampo Hietanen (ITS Finland).



*Claudine O'Sullivan*

# Thank You



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