The Future Market Environment of Mobility

Key Note Presentation

Fleet Mobility EXEX Latvia

18th February 2016

FROST & SULLIVAN

Today's Agenda

Agenda

Introduction

Transformational Shifts Reshaping the Future of Mobility

Conclusions

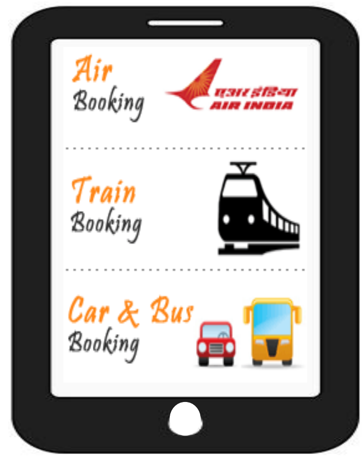
Contact Us

Source: Frost & Sullivan

Transformational Shifts Reshaping the Future of Mobility

Top Transformational Shifts Expected to Shape the Future of Mobility

Connected and Automated Mobility



Mobility Integration

Convergence in Corporate Mobility

Automated Driving

Top Transformational Shifts Expected to Shape the Future of Mobility - Connected and Automated Mobility

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Future Connected Living Ecosystem

The connected life contains three important environments, all with high expectations for "everywhere"

Connected Living Total Market: $730 Billion in 2020

Connected Home – 31%

- Home Automation
- Home Energy
- Home Health
- Home Entertainment

Connected Work – 15%

- Mobility - Mobile email, Unified Communication
- Mobile Working
- Enterprise Social Networking

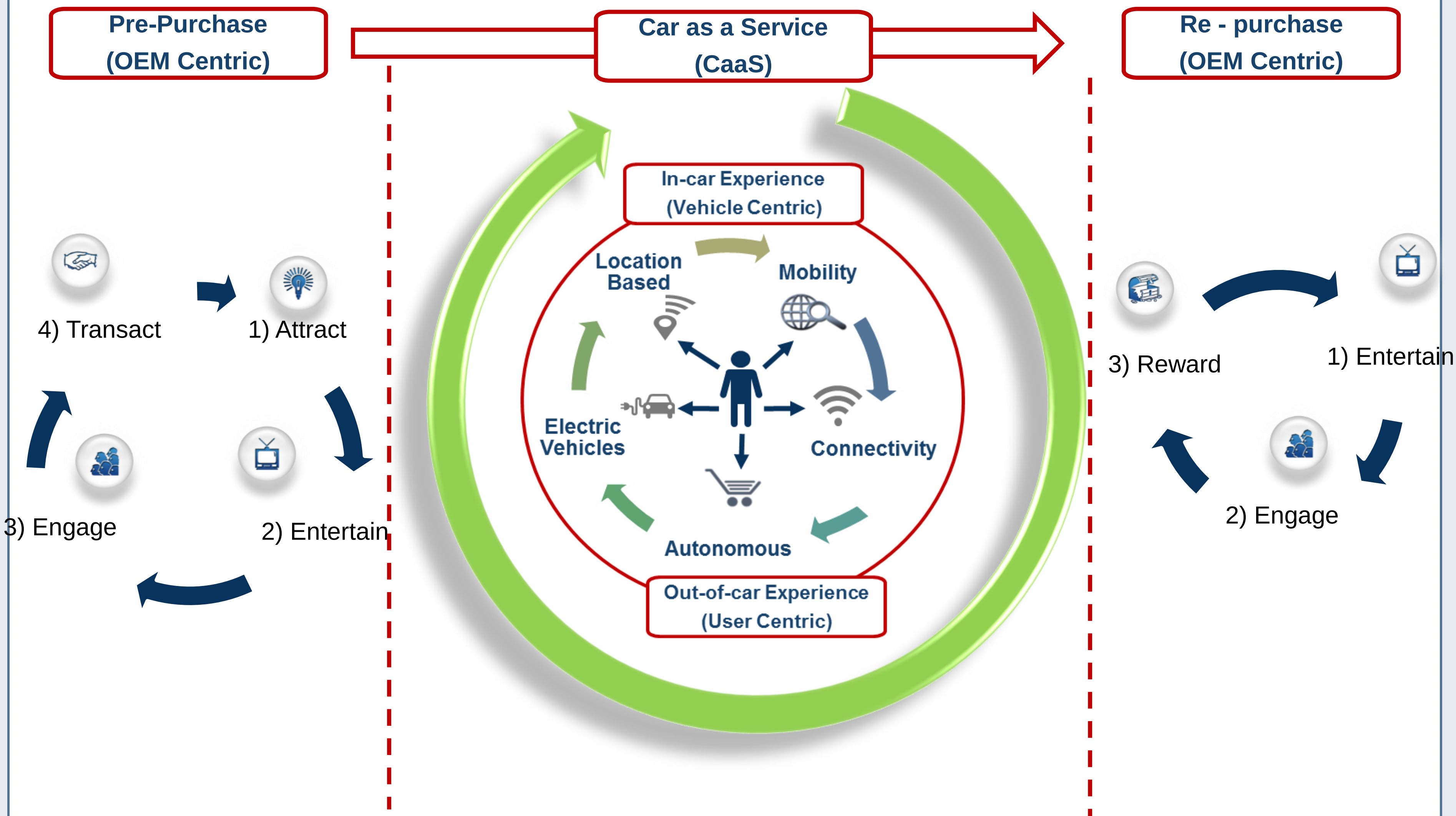
Connected City – 54%

- eGovernance
- eCitizens
- Personal and Freight Mobility
- E-learning
- Mobile banking

Source: Frost & Sullivan

Connected Car Programs at OEMs are going through a Major Strategy Change

Understanding the typical automotive customer journey is crucial to developing products & services around the vehicle



Evolution of OEMs Mobility Services

Car companies are evolving from the business of manufacturing & selling just cars, to providing related services, and multi-modal mobility solutions to target new customers, and future proof their business

Car Independent

- Integrated Mobility: Journey Planning, Booking & Payment
- City Planners & Lifestyle
- Energy creation & storage

Car Services

- Carsharing
- Parking & Charging
- Ride-sharing
- Taxi & Limousine
- Automated Driving

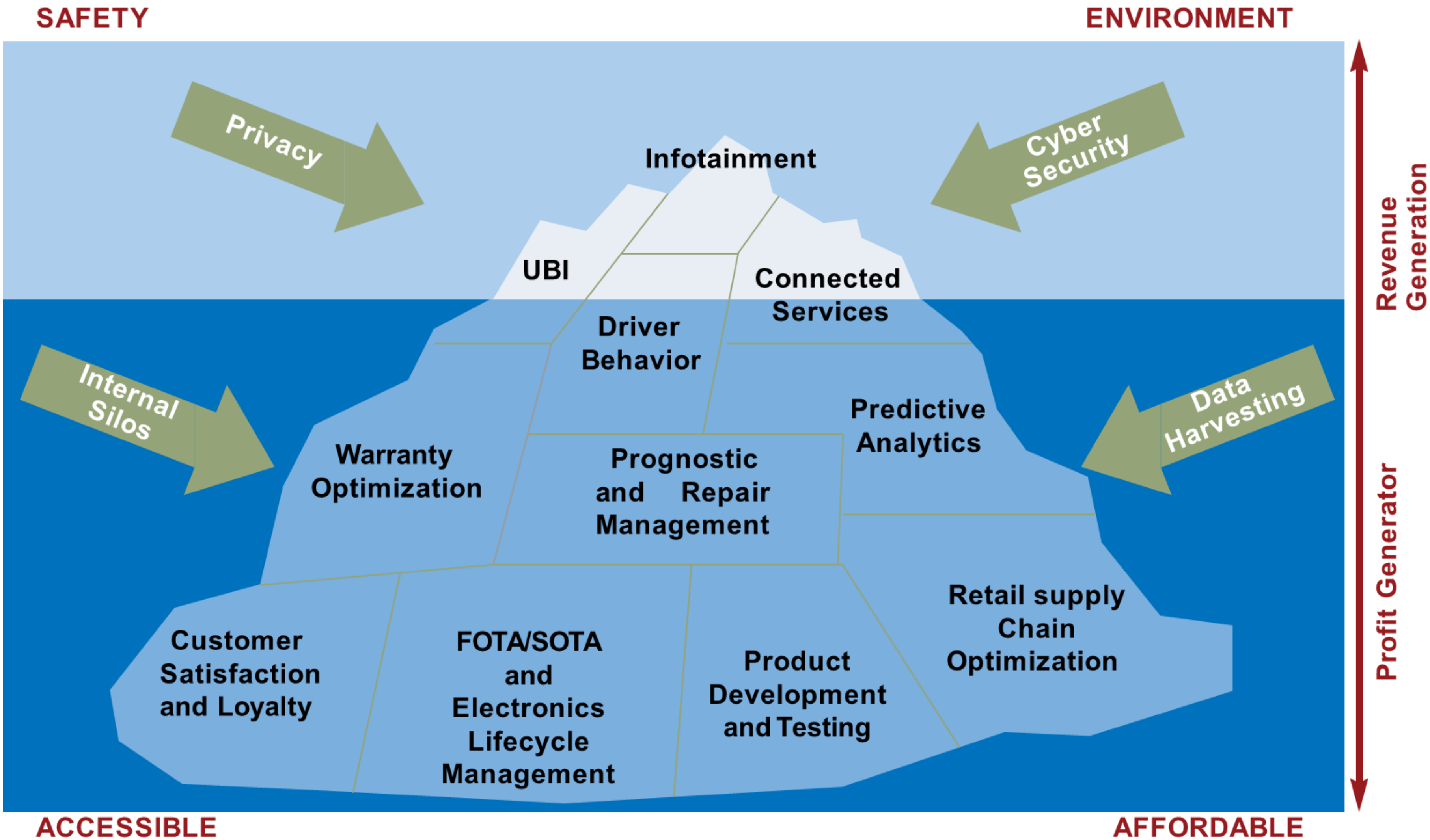
Car Ownership

- Finance
- Maintenance
- Connected Services

Evolution & Expansion of OEM Services

Potential for explosive growth

Ultimately connected car programs need to be profit generators and customer loyalty improvement programs which have large potential for growth



Top Transformational Shifts Expected to Shape the Future of Mobility - Mobility Integration

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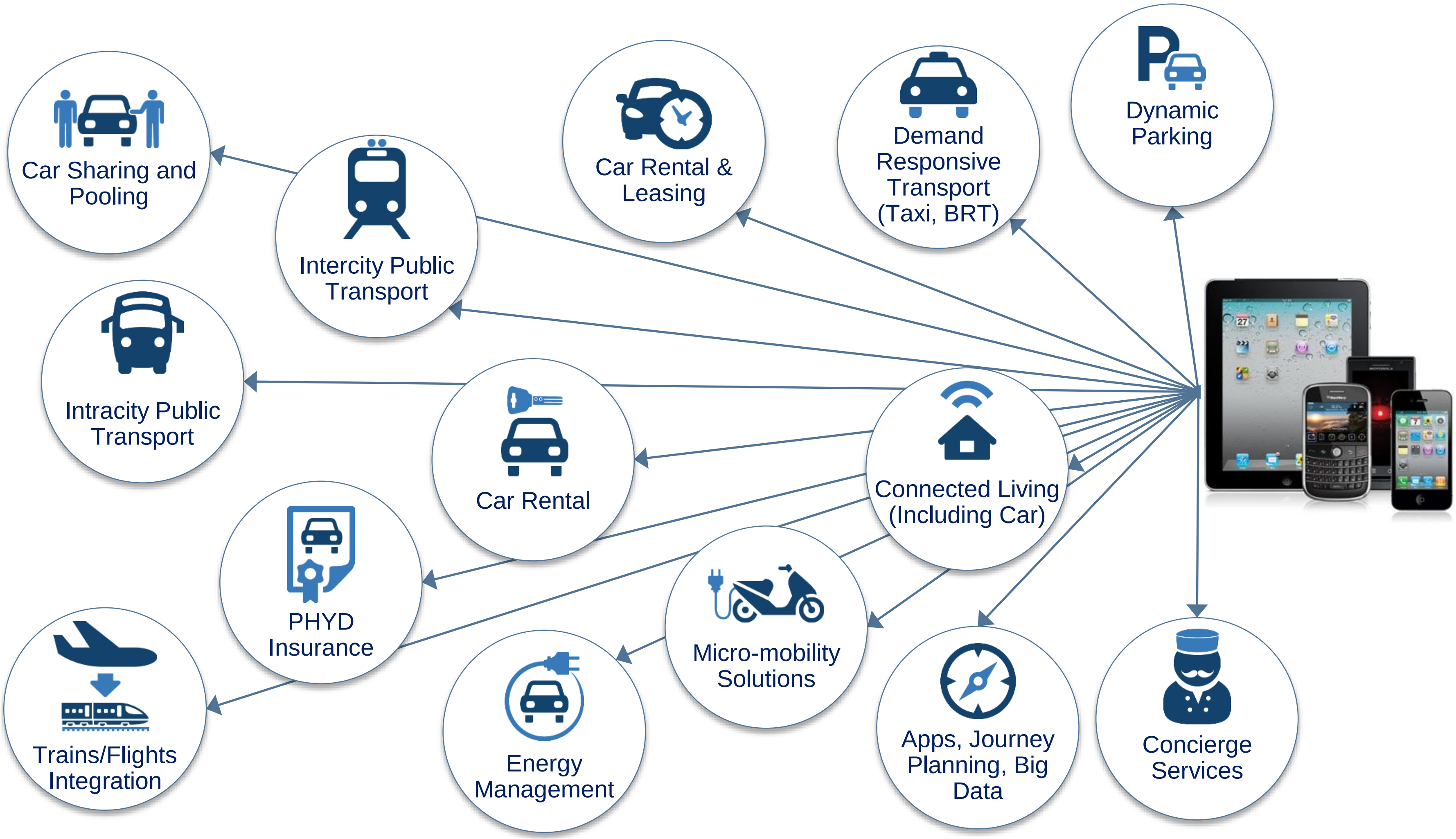
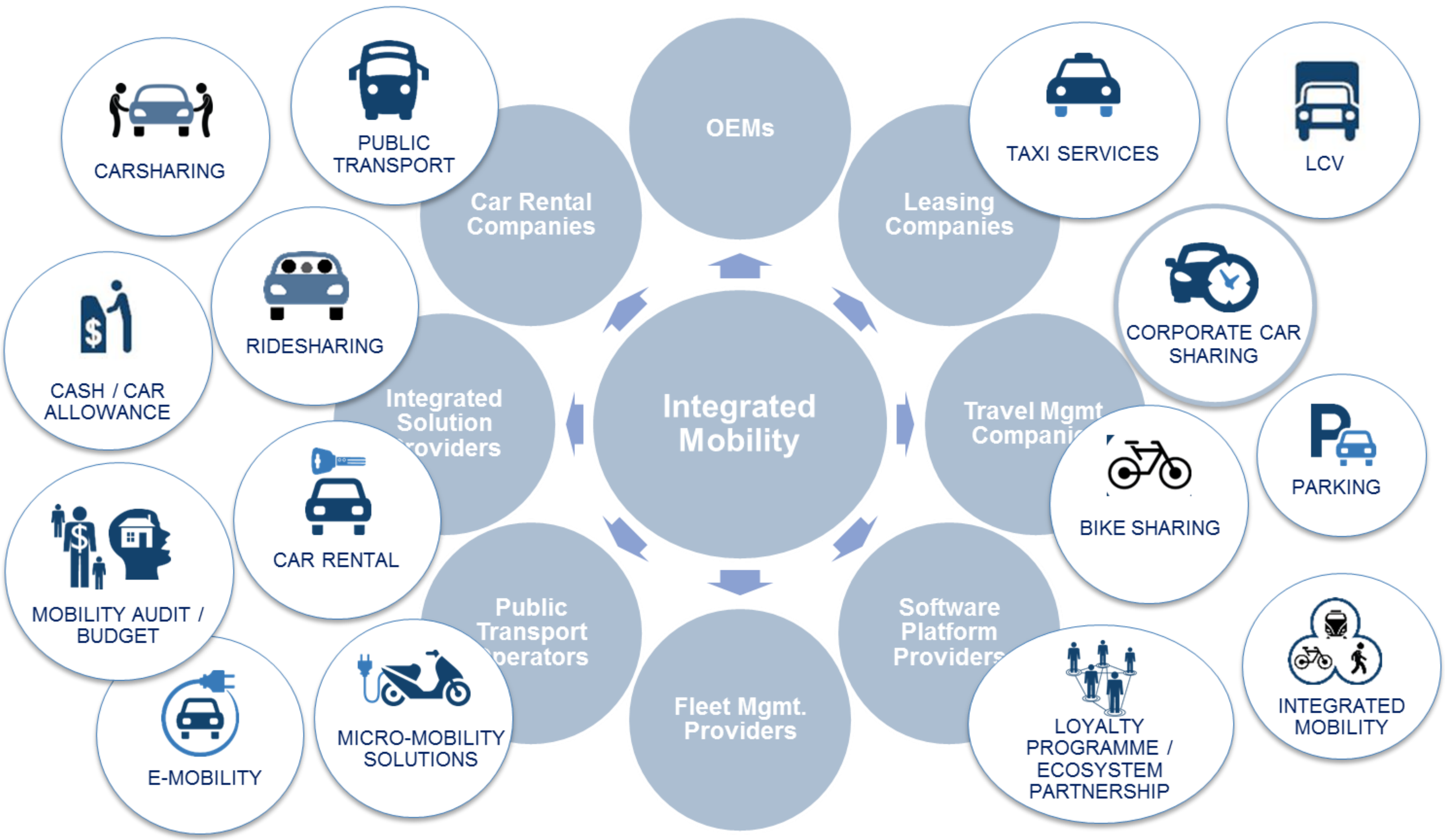
Tech Enabled, Door-to-Door, Multi-Modal Travel Bringing Convenience, Time & Cost Savings



Source: Frost & Sullivan

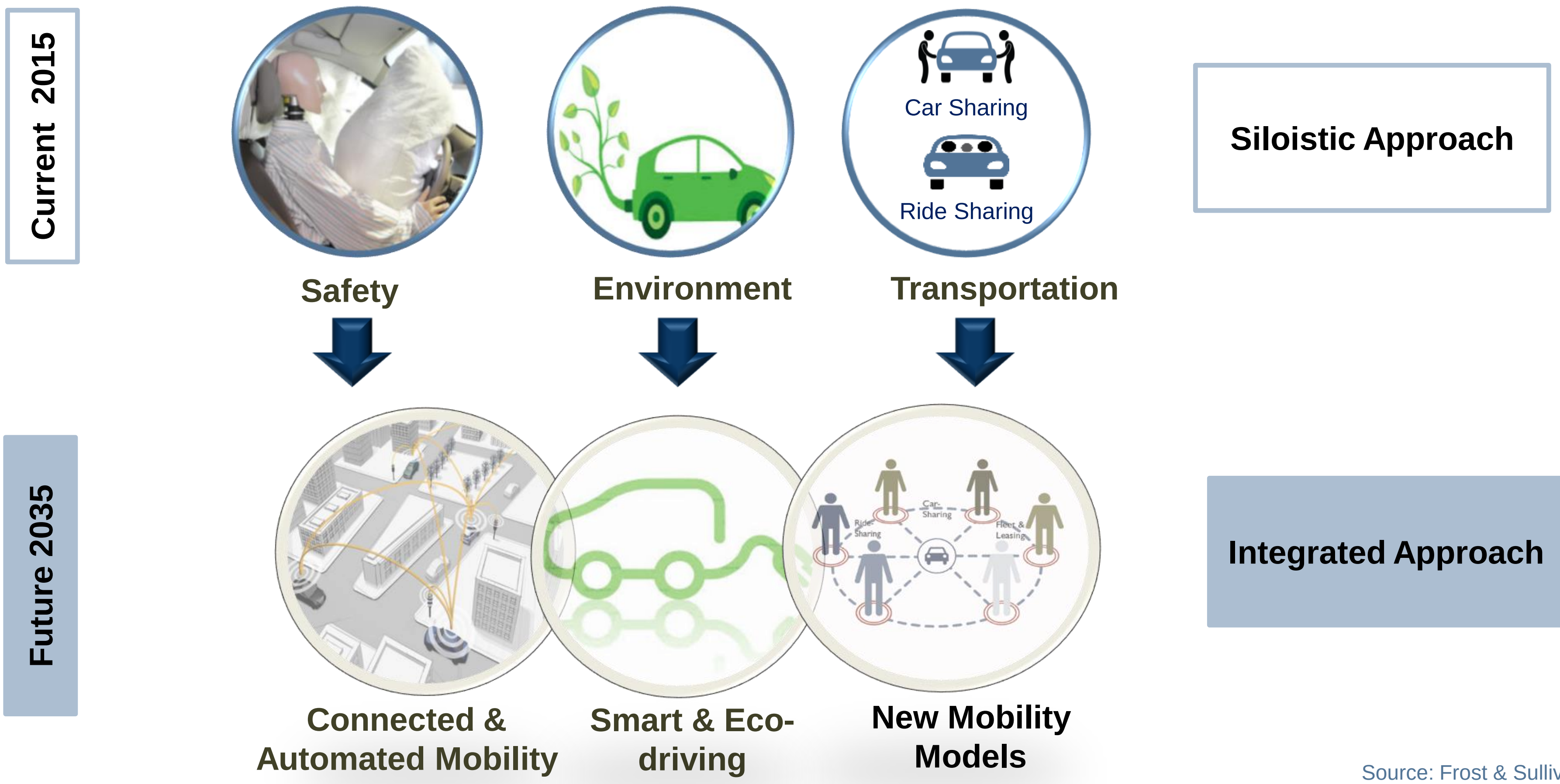
Mobility Landscape – Many Actors, New Partnerships, New Models

Across Consumer and Business environments customers are demanding intuitive services; many actors investing significantly to deliver the 'killer' proposition & seamless user experience



Intelligent Mobility—An Emerging Concept that Revolutionizes Mobility

Intelligent mobility aims to create vehicles that promote a eco-driving experience, insulated from crash fatalities and tuned to combat congestion.



Source: Frost & Sullivan

Impacts of Intelligent Mobility

As a unified approach, intelligent mobility reduces traffic congestion by a fifth, carbon emission by a tenth, and optimizes travel speed up to 60%, depending on infrastructural intelligence.

Phase I

Safety

- Incident management >> **15–33% reduction in crash prevention**
- Enhanced collision avoidance >> **10% reduction in crash prevention**

Modes

- Optimized ride/car sharing modalities >> **Reduction in annual costs of $5.6 billion**
- Group rapid transits and personal rapid transits >> **Reduce travel time by 25%**

Emission

- Increase average travel speed >> **10–15% reduction in CO_2 emission**
- Traffic signal light optimization >> **Reduce stops by 40%**

Phase II

Traffic flow optimization >> **Reduce congestion by 12% to 30%**

Optimize travel speeds >> **Increase road speeds from 8–60%**

Efficient driving modes >> **Reduce fuel consumption by 10%**

Source: Frost & Sullivan

New Business Models - Growth of Car Sharing

Over 543,000 vehicles to be shared in Europe by 2020

Carsharing

2014	Vehicles	Users
Traditional	49,368	2.5 million
P2P	81,380	1 million
Corporate	2,896	250 companies

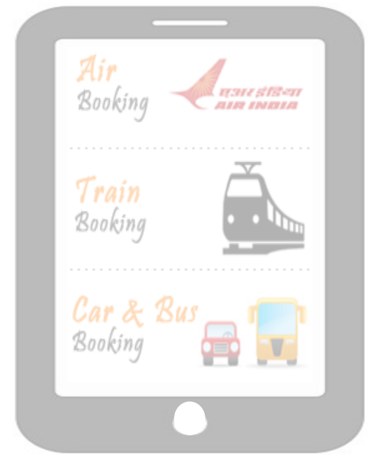
Carpooling

2020	Vehicles	Users
Traditional	236,145	14.9 million
P2P	222,210	3.3 million
Corporate	84,649	4,000 companies

Source: Frost & Sullivan

Top Transformational Shifts Expected to Shape the Future of Mobility - Convergence in Corporate Mobility

Connected and Automated Mobility



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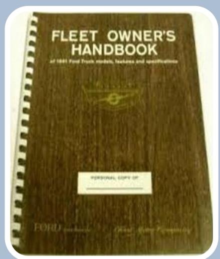
Future of Corporate Mobility – From TCO to TCM



Total Cost of OWNERSHIP

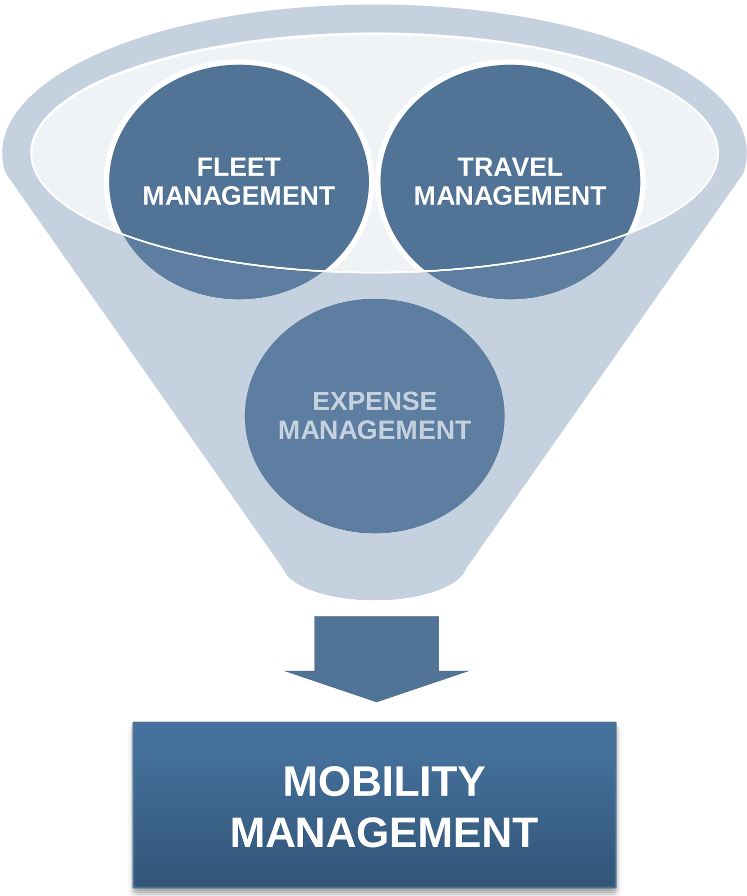
- Running Core Fleet & Keeping Company Drivers Informed

Total Cost of USERSHIP

- Managing Overall Fleet & Educating All Company Drivers

Total Cost of MOBILITY

- Delivering Integrated Services & Empowering All Employees



Source: Frost & Sullivan

Interest Towards Mobility Allowance

54% of the sample expressed interested in a move to a "Mobility Allowance"
As expected Belgium (62%) and Netherlands (59%) expressed greatest interest.

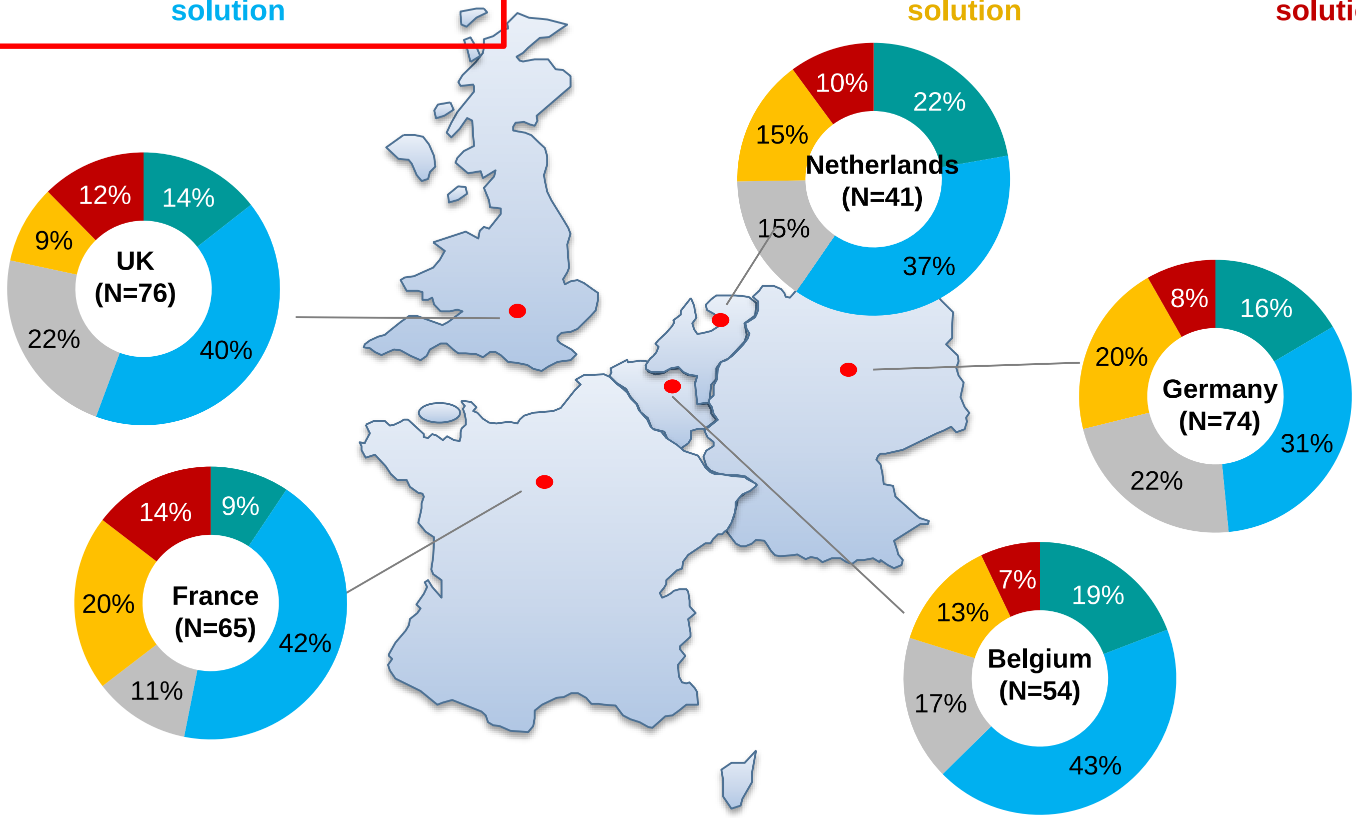
16% Very interested In mobility allowance solution

38% Somewhat Interested in mobility allowance solution

17% Neither/Nor

16% Somewhat not interested in mobility solution

10% Not interested at all in mobility allowance solution

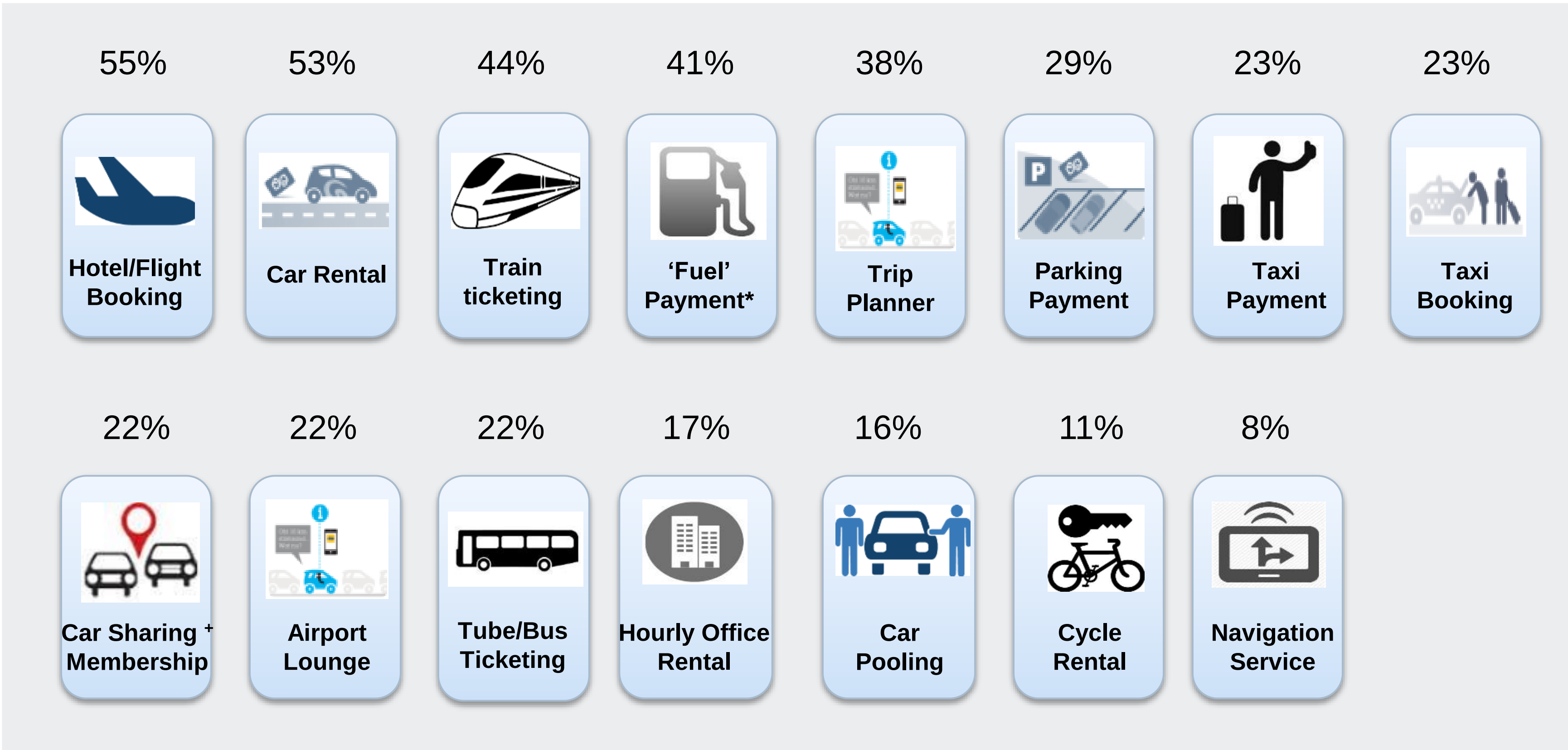


Q10. Interest in mobility allowance solution? Base: those who have corporate car or cash allowance N=310

Mobility Integration Services

Services typically integrated by a Travel Management Company are the most preferred. Payment options feature prominently; an any device strategy is integral to Future Mobility

Most Preferred Services (top 5 ranking) - Europe



Q31. Most preferred services in an integrated solution n=465

Preferences were selected by respondents from a pre-defined list of services as opposed to a free format / free choice approach

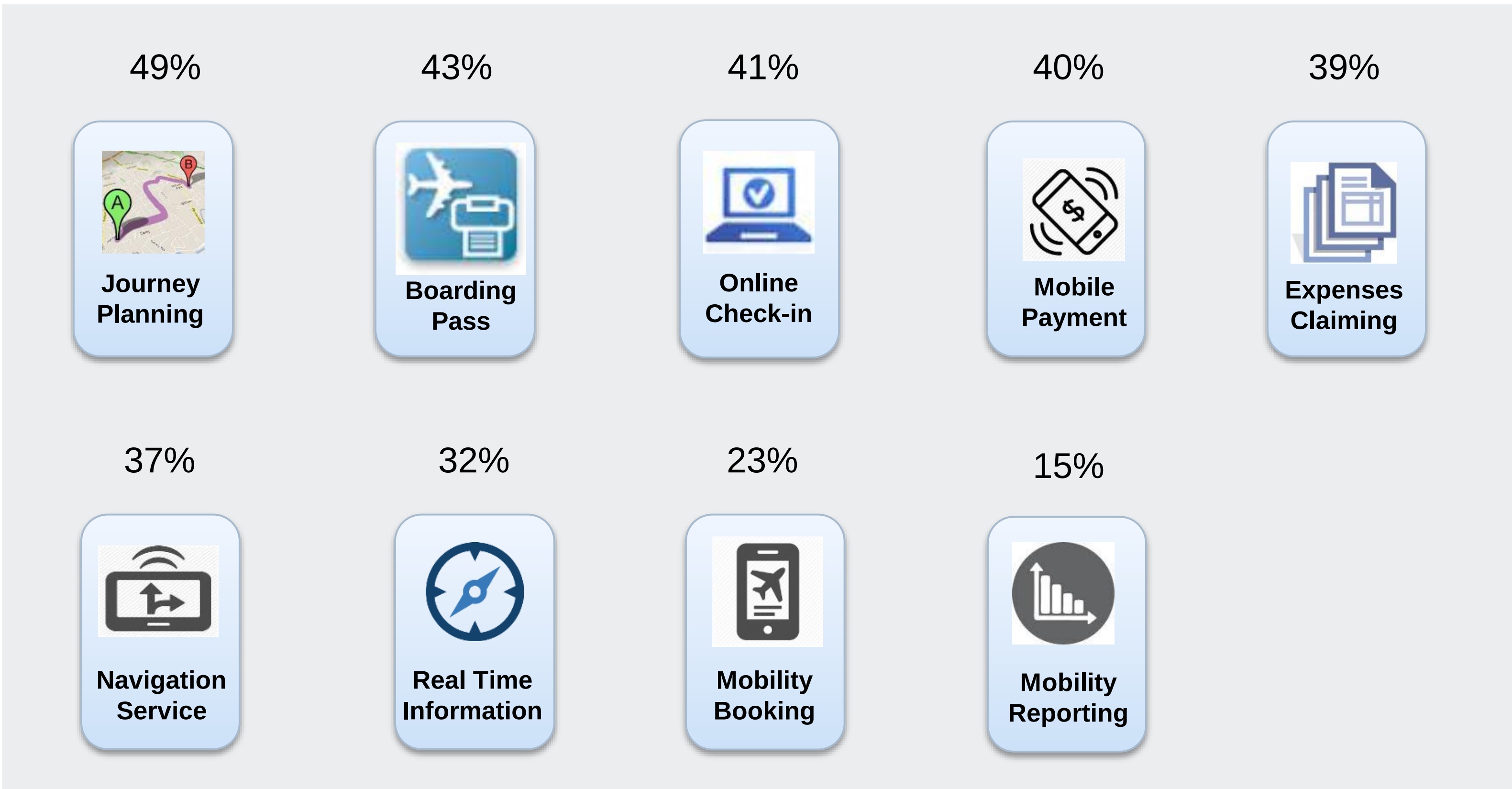
* Covering payment of traditional fuel, energy and other services available from fuelling / charging stations e.g. cleaning / valeting

+ On-demand access to vehicles through services such as DriveNow, Car2Go, Zipcar, etc.

Mobility Integration Services in Mobile Application

Journey Planning is the most desirable service so must be a priority component of an Integrated Mobility service

Mobility Integration Service in Mobile Application - Europe



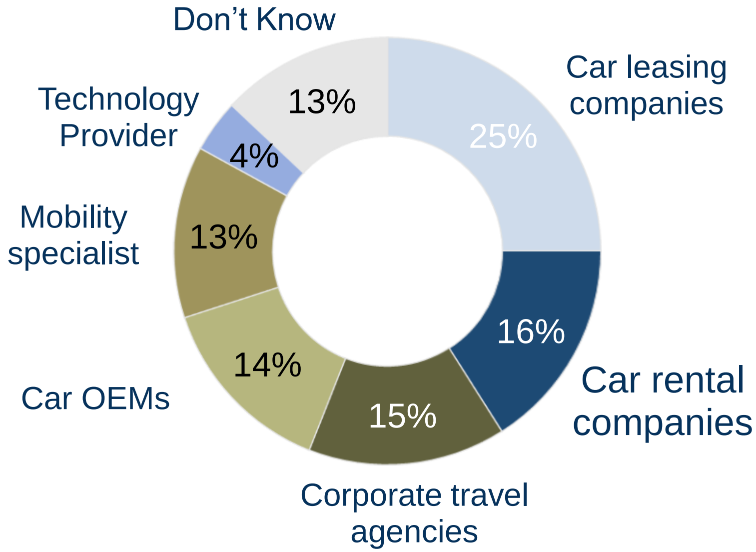
Q33. Interest on mobile applications for the new mobility solution. Base: Total n=465

Preferences were selected by respondents from a pre-defined list of services as opposed to a free format / free choice approach

Mobility Integration Future Service Providers

Leasing companies considered by decision-makers to be best placed to deliver Integrated Mobility services albeit picture is mixed confirming the fragmented nature of the market

Best Player to Provide New Solution- Europe



Best Player to Provide New Solution- by country

	UK (n=106)	FR (n=98)	DE (n=97)	NL (n=78)	BE (n=86)
Car leasing companies	23%	18%	23%	38%	23%
Car rental companies	12%	21%	15%	15%	15%
Corporate Travel agencies	21%	20%	15%	1%	14%
Car OEMs	9%	12%	25%	12%	14%
Mobility specialist provider	14%	14%	9%	13%	15%
Technology provider	8%	3%	2%	3%	3%

Q32 Best player to deliver integrated mobility solution service. Base : total n=465.
Top results highlighted in red

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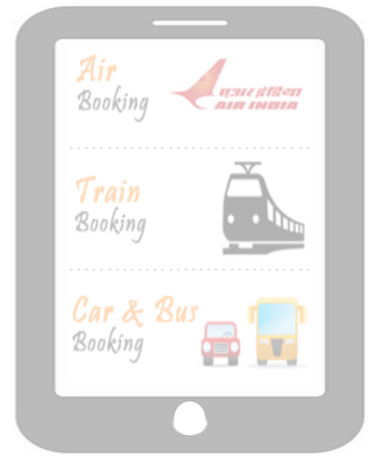

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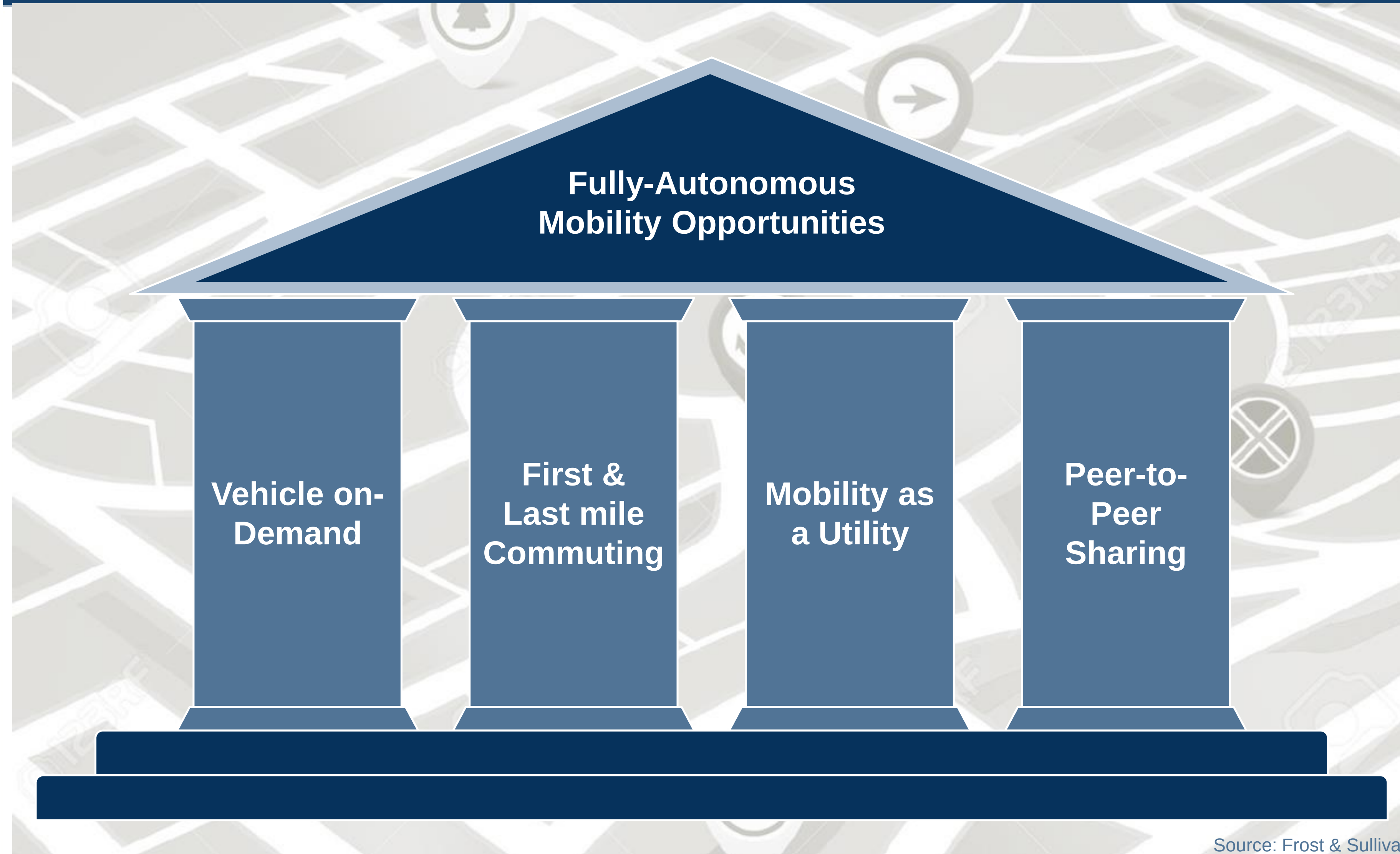
Autonomous Cars New Business Models

Four key areas impacted by Fully-Autonomous Mobility



Source: Frost & Sullivan

Autonomous Vehicles to revolutionize the e-Hailing Business Model – Case Study – New York Yellow Taxi

Automated Driving Business Models: Case Study – New York Yellow Taxi, NA, 2015

Current Taxi Market	Parameter	Future Taxi Market
36	**Average number of daily Trips per taxi**	~50
200	**Average Daily Miles Covered by a Taxi**	~350
7.1%	**Taxi User Base (% of Population)**	15-20%
22.39	**Number of Taxis per 1000 Daily commuters**	~18
$540 (2013)	**Driver cost per day**	$0
50,000	**Number of Drivers**	0
$6.31 (2013)	**Average Fare per mile**	~$4
$29,700 (2014 Nissan NV200)	**Taxi Price**	$40000

Note: Taxi user base in New York City was 600,000 passengers per day in 2014

Source: NYC Taxi And Limousine Commission, Frost & Sullivan

With Increasing Autonomy, Insurance Liability Likely to Shift to Software Algorithms

Present-day Motor Insurance Model in driver centric

Driver centric evaluation

Future Motor Insurance Model

1. Brand centric evaluation		2. Product centric evaluation		3. System centric evaluation
Crash Prevention, Crash Worthiness, Algorithm.	Or	Pods, personal vehicles, group rapid transit vehicles	Or	Increased Comfort, Option To Take Manual Control.

>80%

Manufacturers Product Liability

<20%

Users share of liability

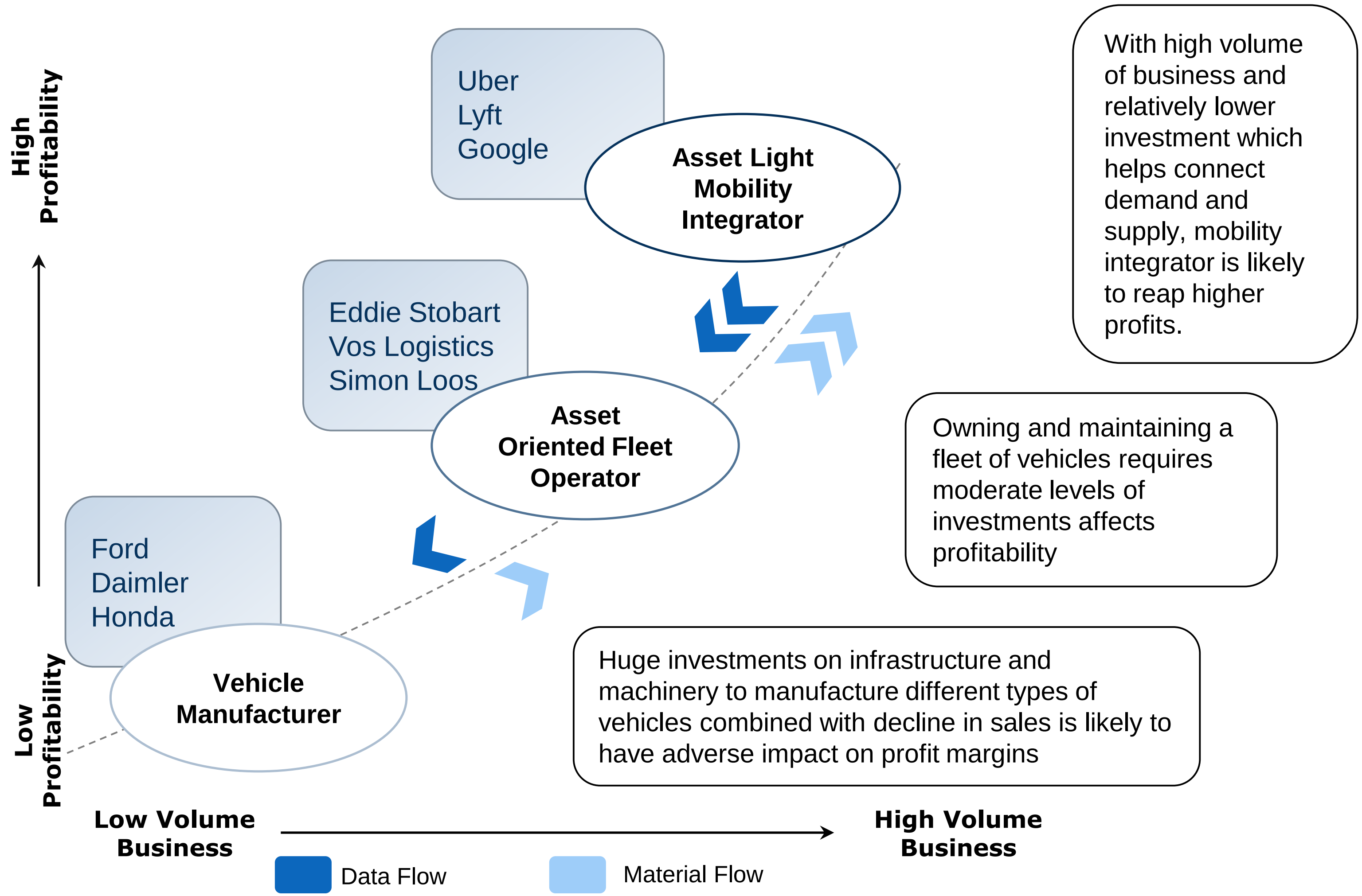
* Vehicle owner pays premium to cover some excesses such as stray incidents like theft, fire and vandalism

Source: Frost & Sullivan

Conclusions

Business Implication of Future Mobility Models for Key Stakeholders

Although each stakeholder can posses a strong core competence, expanding their radius of power to exercise more control on at least one other stakeholder can increase the probability of success.



Source: Frost & Sullivan

Mobility Ecosystem Will Remain Hybrid Value Chain for Next 5 Years

Coexisting with the traditional ecosystem, a smartphone-like ecosystem may evolve in the automotive industry, which is strongly based on a user-interface oriented, service-driven business model.

2015

Mobility Integrators	**2015: Stronghold in user interface domain** **2025: Spearhead the service-driven industry**
Connectivity Providers	**2015: Pure-play digital influencers** **2025: Connected mobility enablers**
Suppliers	**2015: Expanding product portfolio** **2025: Digital innovation blended with electronic controls**
OEMs	**2015: Traditional power houses** **.** **2025: Hardware providers in a service industry**

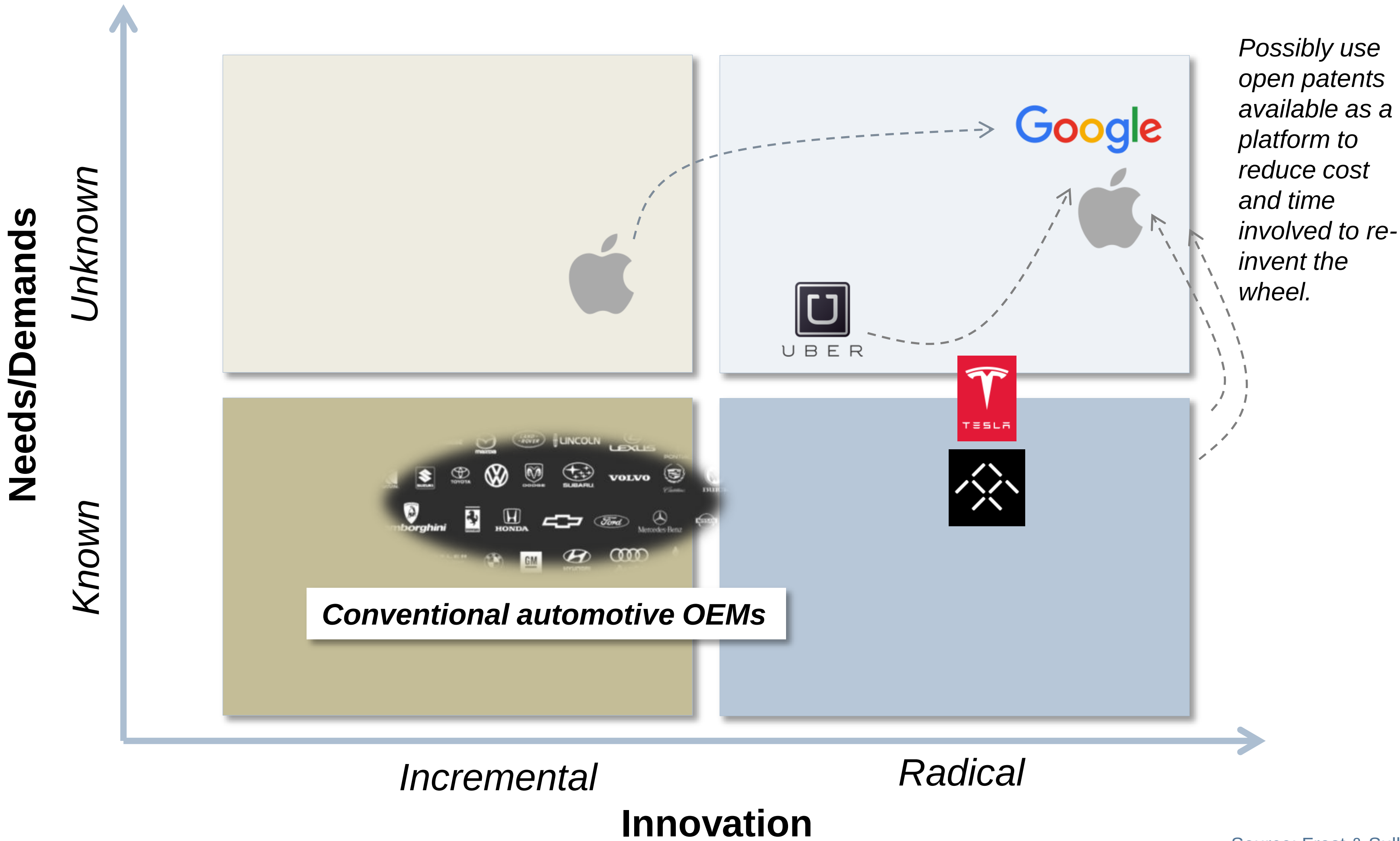
2025

Key segments influencing the market Low High

Source: Frost & Sullivan

Tech Invasion – a Key Enabler and Motivator for Conventional OEMs

Tech companies innovate to offer a products/services that meets the unknown needs/demands of consumers, creating white space opportunities between the automotive and consumer electronics worlds



Source: Frost & Sullivan

Thank You

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