

Global Mega Trends and Their Impacts on Future of Mobility

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Agenda

About Frost & Sullivan

Mega Trends Impacting the Future of Mobility

- **Urbanization – City as a Customer**
- **Connectivity and Convergence**
- **Bricks and Clicks**
- **Future of Mobility**

Conclusions

Frost & Sullivan Value Proposition

We support you in understanding the future of your industry, growth opportunities for your company and your career

YOUR INDUSTRY



YOUR COMPANY



YOUR CAREER



Our Global Footprint of 45 Offices in 30 Countries

Scanning the Globe for Opportunities and Innovation



Our Industry Coverage



Aerospace and Defense



Infrastructure



**Consumer
Technologies**



**Information and
Communication Technologies**



**Automotive
Transportation and Logistics**



**Energy and Power
Systems**



**Environment and Building
Technologies**



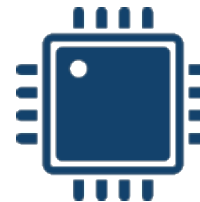
Healthcare



Minerals and Mining



**Chemicals, Materials
and Food**



**Electronics and
Security**




**Industrial Automation
and Process Control**

Frost & Sullivan Has Three Key Platforms Which Support Our Clients to Grow their Business As Shown Below

Client

FROST & SULLIVAN

Growth Partnership Platform

- 
- Research Services TEAM
 - Growth Consulting and Advisory Services
 - Growth Implementation Services



**New Mobility
Business Models
(e.g. Car Sharing)**



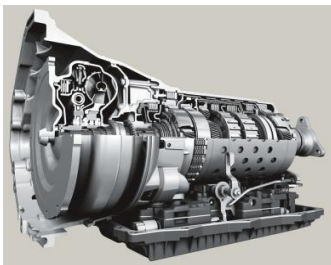
**Hot Industry Topics
(e.g. Big Data)**



**Future of Car
Retailing**



**Vehicle
Connectivity**



**Future Fuels,
Powertrain, CO2
Strategies**



Vehicle Aftermarket



Automated Mobility



**Vehicle Leasing and
Ownership**



**Connectivity and
Convergence**



**Future of Smart Cities
and Living Labs**



New Business Models



**Future of Retail: Bricks
and Clicks**



**Future of Logistics and
Supply Chains**



Future of Mobility



**Regional Reports on
Macro Trends**



**Other Industry
Outlook Reports**

Mega Trends Impacting the Future of Mobility



News Headlines in 2025



Robots enter our personal lives



Digital Assistants Guide our Everyday lives

Sensory devices guide our everyday lives.



3D printing is commonplace. 4D printing is gaining mainstream acceptance . 4G has given way to 5G



Mobile financial transactions are now in crypto-currencies.



US signs agreement to introduce high speed rail service from LA to Mexico

There are 6 million (semi) autonomous cars in Europe and North America.



Summer Sale: Low-cost holidays in space.



Source: Frost & Sullivan

What is a Mega Trend?

What is a **Mega Trend**?

Mega trends are **transformative, global** forces that define the future world with their far reaching impact on **business, societies, economies, cultures and personal lives**. Megatrends have local and regional implications and timing of impact varies geographically.



Urbanization
– City as a
Customer



Bricks and
Clicks



Future
Infrastructure
Development



Smart is the
New Green



Innovating
to Zero



Health,
Wellness
and Well
Being



Social
Trends



New Business
Models: Value
for Many



Future of
Mobility



Connectivity
and
Convergence



Beyond
BRIC: The
Next Game
Changers



Future
of
Energy

Source: Frost & Sullivan

Urbanization —City as a Customer—





Mega Cities



Mega
Regions



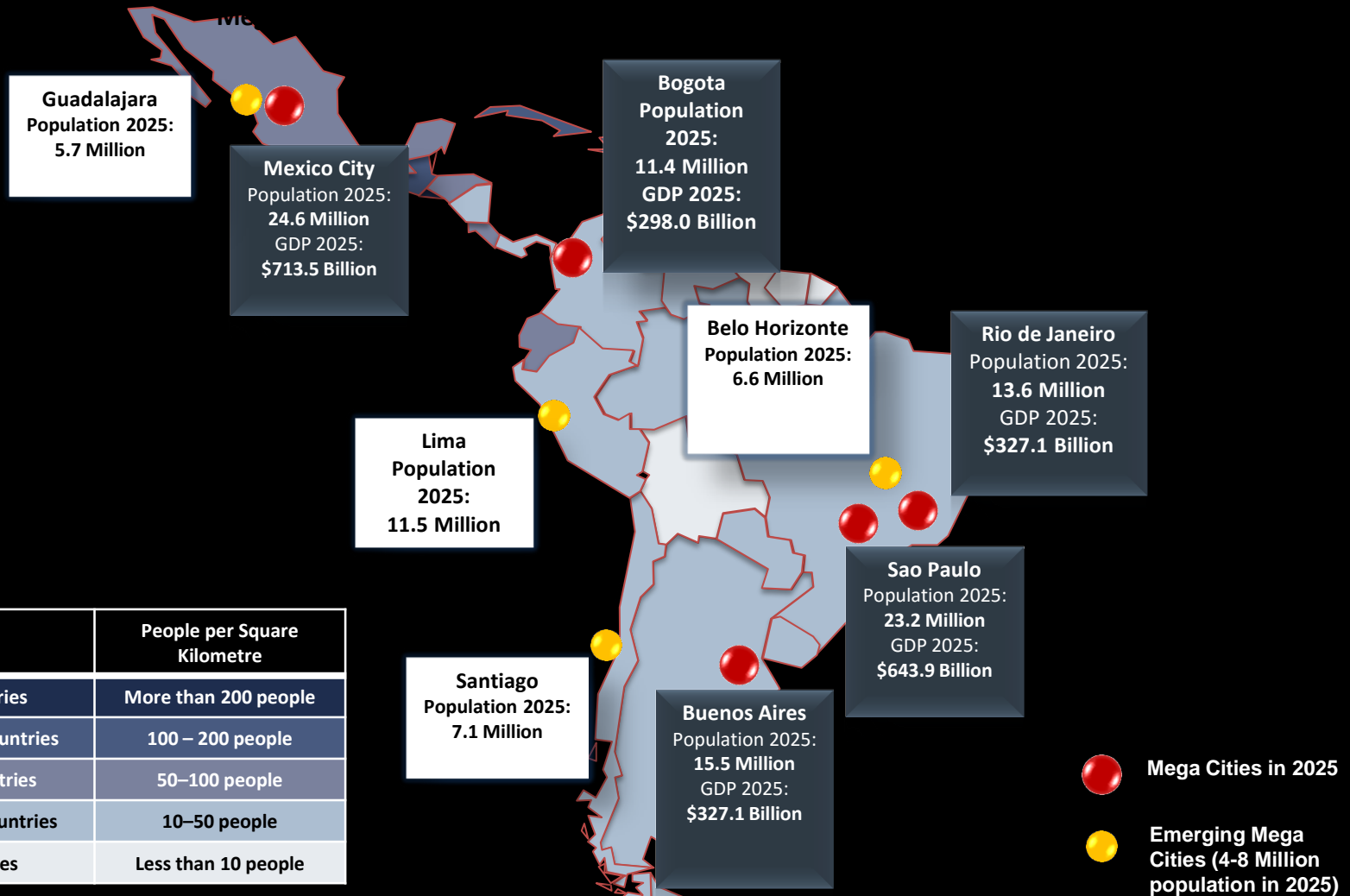
Mega
Corridor



Smart and
Sustainable
Cities

Mega Cities

By 2025, it is Expected that 86% of the Population (567 million people) in Latin America Will Be Living in Urban Areas.

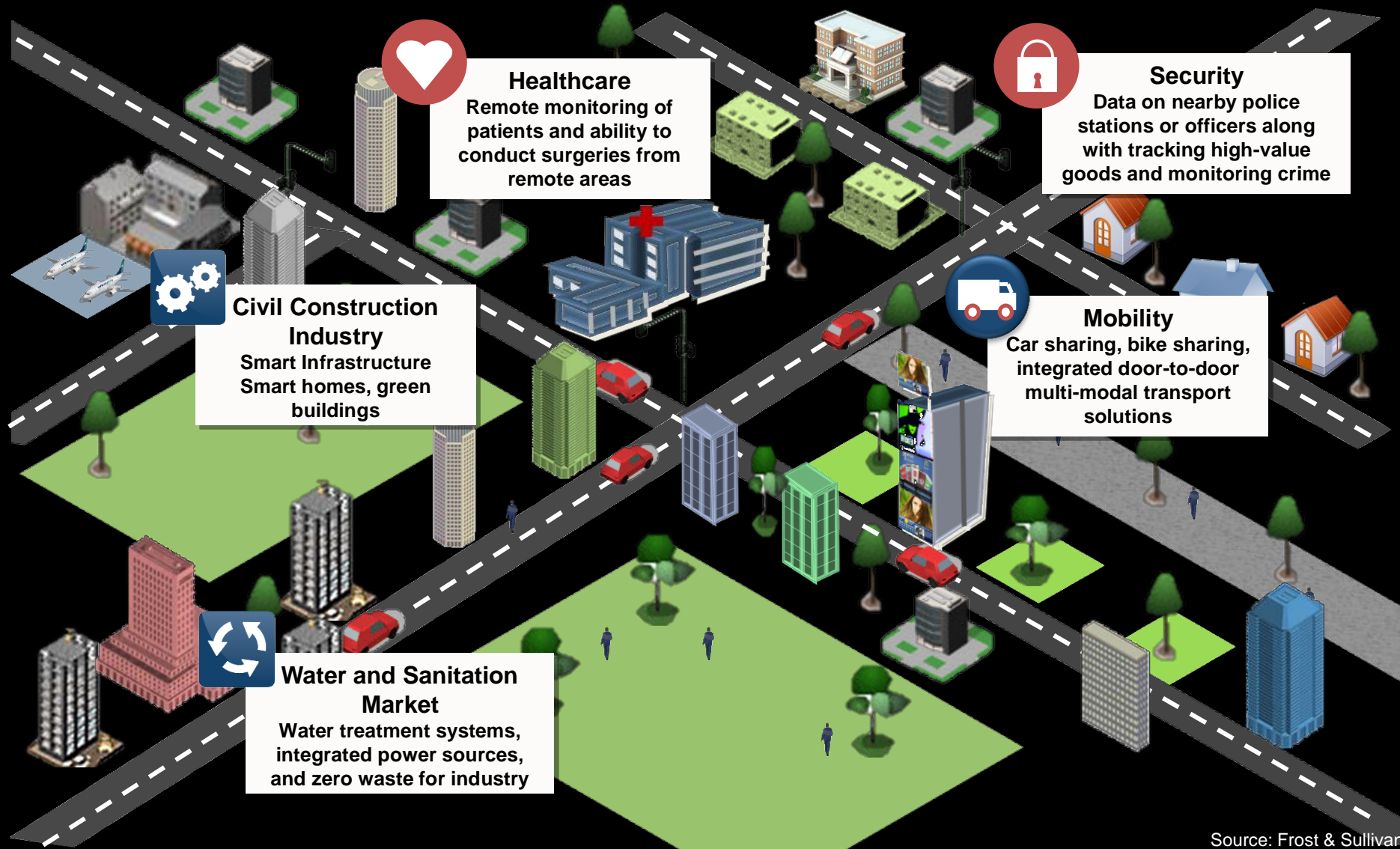


	People per Square Kilometre
Highly Urban Countries	More than 200 people
Medium-high Urban Countries	100 – 200 people
Medium Urban Countries	50–100 people
Low-medium Urban Countries	10–50 people
Low Urban Countries	Less than 10 people

Source: United Nations, Department of Economic and Social Affairs Statistics; other regional and country level statistics bureaus; and Frost & Sullivan analysis.

City as a Customer

Urbanization will Create Numerous Cross-sectoral Micro Implications and Opportunities in Latin America.



Source: Frost & Sullivan

Top 20 Megacities – Regional Transportation Policies

Congestion , low emission zones and road user charging initiatives in the emerging economies will have a major impact on car mobility

	Delhi	Mumbai	Beijing	Shanghai	Moscow	Seoul	New York	London	Tokyo
Bus Rapid Transit Lanes				2011		2011			
Metro/Subway		2011							
Congestion Charging	Planned	Planned	2012	2012	Future		Planned		Future
Parking Cuts									
Road use Charging/Ban		Yes	1 Week Day Ban	1 week Day Ban		1 Week Day Ban*			Future
EV/Hybrid Incentives									
Bicycle Lanes									
Emission Standard	Euro 4	Euro 4	Euro 4	Euro 4	Euro 3 Euro 4 by 2012	Euro 4	CAFÉ 27.5mpg. 34.1 mpg by 2016	Euro 4 Euro 5 by 2011	25% reduction by 2015



Not planned



Existing currently

* Voluntary no road usage incentive

Source: Frost & Sullivan

City as A Customer – What does it mean to Car Industry ?

Integrated door to door mobility solutions

New mobility business models like car sharing



Cars designed around Cities and not cities designed around cars



All Inclusive Integrated Mobility Supplier and Smartphone Application



Connected Driving e.g. V2V and V2I



Flag-ship brick and click Retail Stores

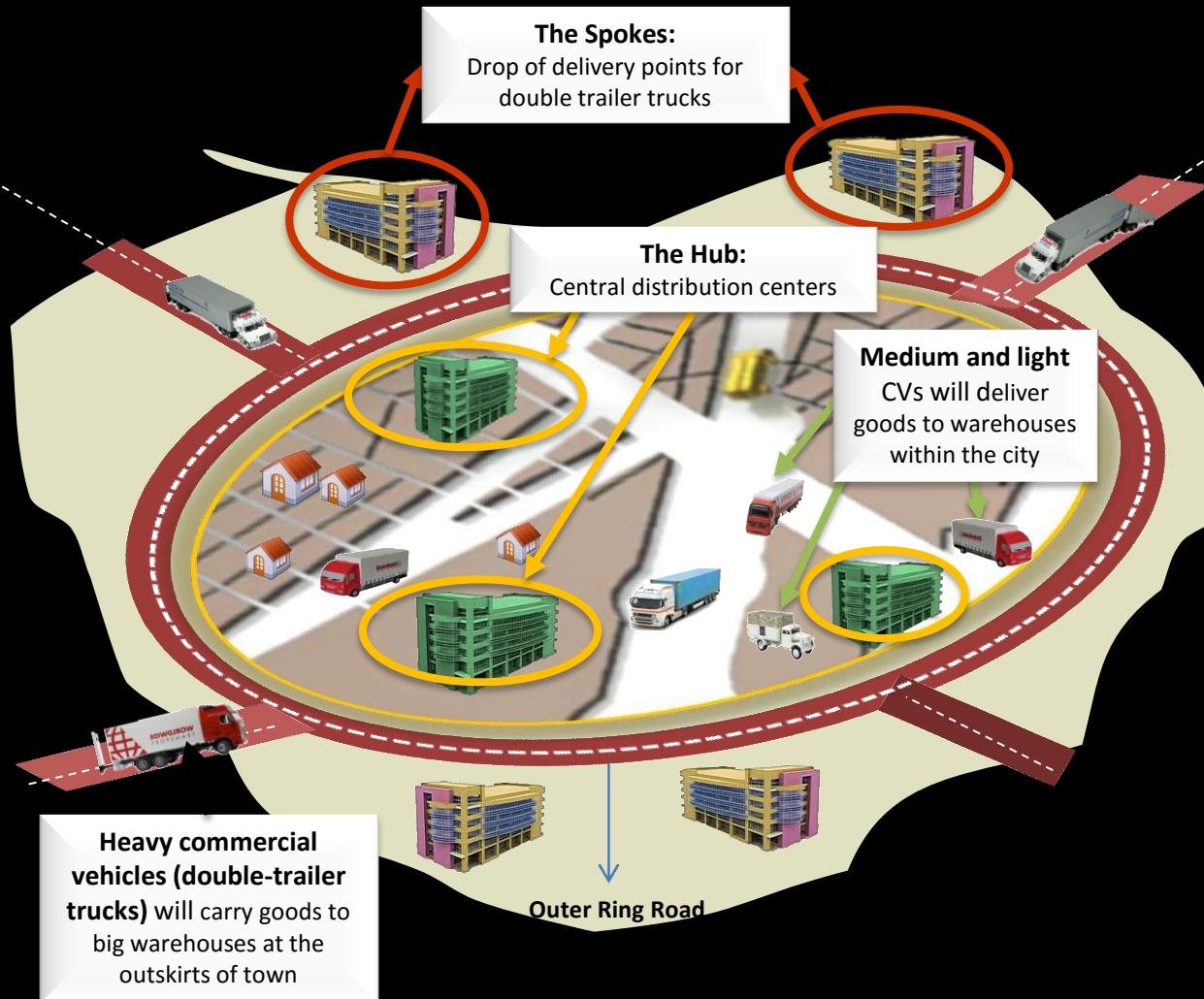


Low emission Taxi Programs & New Urban Vehicle Technologies



Future Urban Logistics Distribution

The Future of Urban Logistics—The Hub and Spoke Logistics Model in Urban Environments



Macro to Micro Implications

- New technologies in tracking deliveries, such as track and trace, Radio-frequency identification (RFID) in warehouses to evolve
- New business models, such as in-night services, special delivery, and self-collection points to grow in popularity
- ~50.0% reduction in trucks going in and out of cities
- Ensures “on-time delivery” for retailers

Source: Frost & Sullivan

Vision of the Future: What Will be the Traits of Truck of The Future?

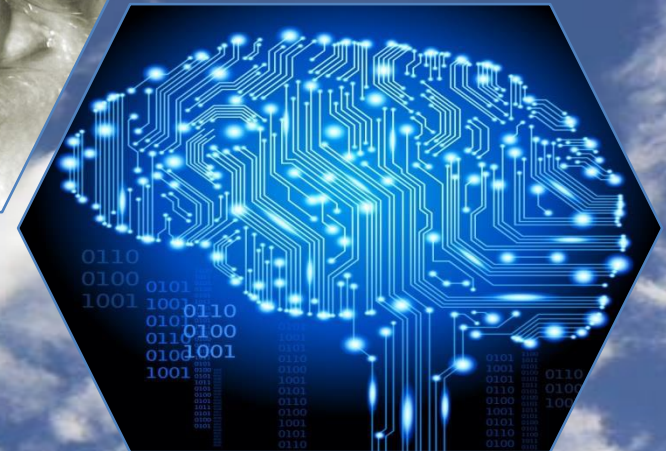
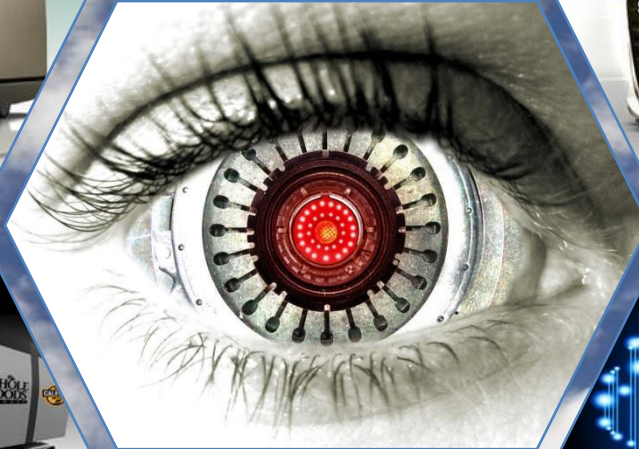
Green



Connected



Safe



Smart

Connectivity & Convergence



80 Billion Connected Devices By 2020

10 Connected Devices for
Every Household by 2020
(11 for US)

5 connected devices for every
user by 2020

5 billion internet users by
2020

500 devices with unique
digital IDs (Internet of things)
per square kilometre by 2020

340,282,366,920,938,463,463,374,607,431,768,211,456



Sub Trend: Future Connected Living Ecosystem

Connected life contains three important aspects of connected home, connected city, and connected work

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

Sub Trend: Why Big Data in the Auto Industry – The Business Case

Annual savings of ~\$700—1500 per car for OEMs from leveraging Big Data



Digital Leads



Internet Aggregators to Enter Market



Warranty Costs Reduction, Predictive Maintenance



Product Performance Analysis, Production and Supply Chain



User & Dealer Satisfaction



Advanced Mobility services, Dynamic Navigation and Parking

Source: Frost & Sullivan

Sub Trend: Future Autonomous World

Anything That Moves, Could be Autonomous in the Future



Unmanned Vehicles



Autonomous Cars



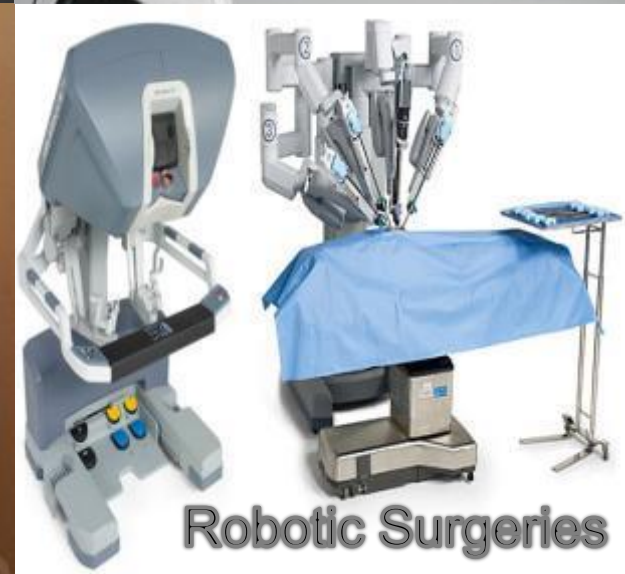
Personal Robots



Drone Deliveries

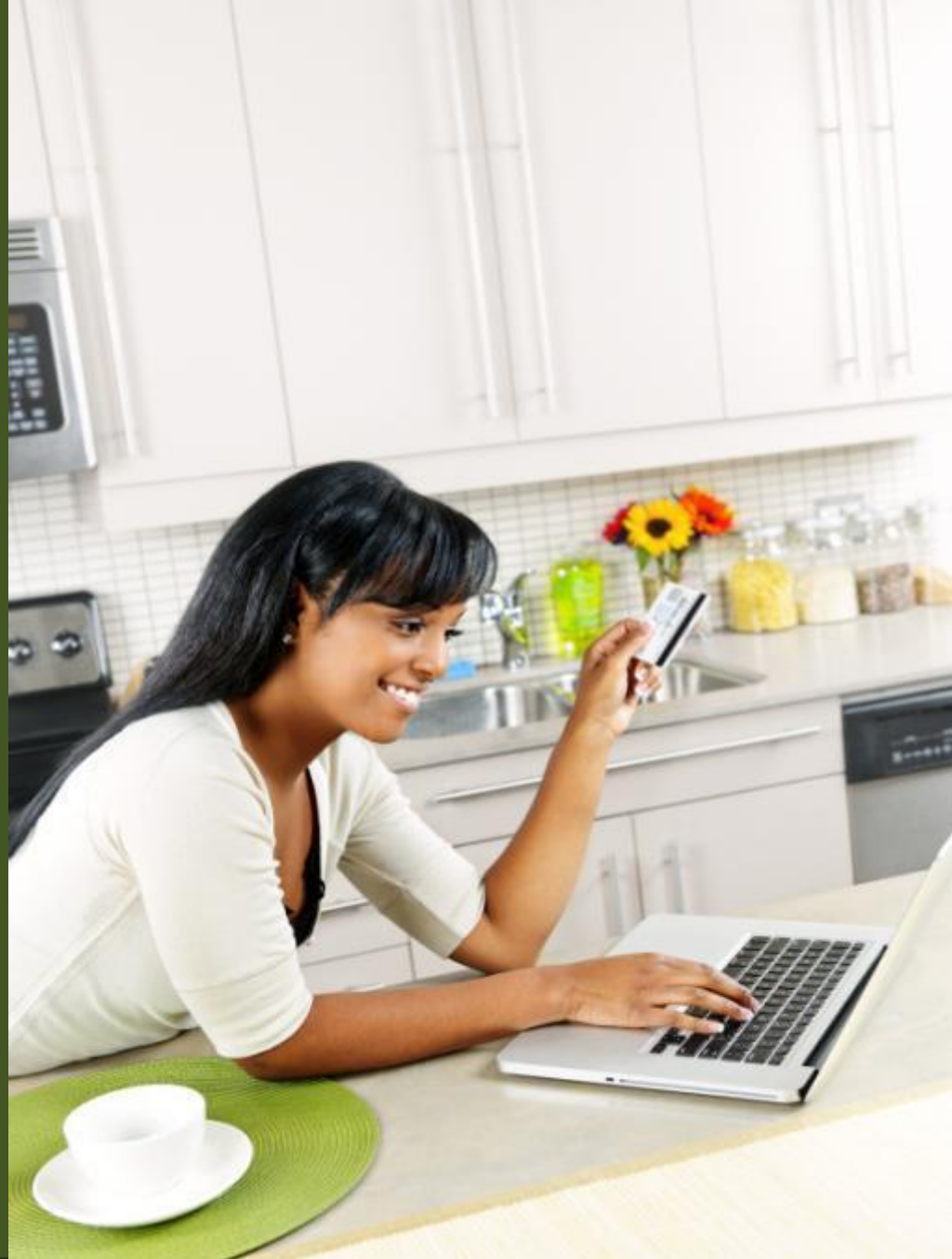


Automated Security



Robotic Surgeries

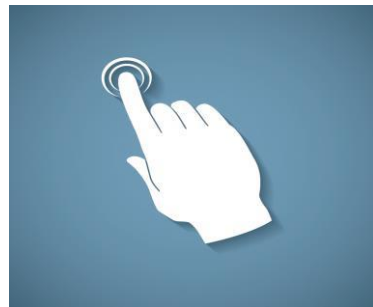
Bricks and Clicks



Top Transformational Shifts Expected to Shape the Future of Retailing (2013 to 2020)



Future Stores
Smaller, Ephemeral,
and Urban



Omnichannel Retailing
‘Bricks and Clicks’
Models



Connected Retailing
‘on-the-go’ seamless
shopping



New Business Models
Social Commerce, and
new retail models



Engaging Retailing
Era of customized
targeting



Last Mile Retailing
Future of retail supply
chain



Big Data Retailing
From selling products to
selling information



Women Empowerment
Emerging Retail Models
for Women

Source: Frost & Sullivan

Transformational Shift: Omnichannel Future of Retailing

From Bricks to Clicks to Bricks and Clicks

Bricks (pre-2000)

Department
Stores



Supermarkets



Hypermarkets



Advent of Clicks (post-2000)

Online



Mobile Payments



Mobile Apps



The Future — Bricks and Clicks

Virtual Stores
(Ambient mobile retail)



Interactive Stores
(Motion sensor displays)



Virtual Hyper-markets
(Alibaba)



Source: Frost & Sullivan

Emerging New Retail Formats in the Automotive Industry

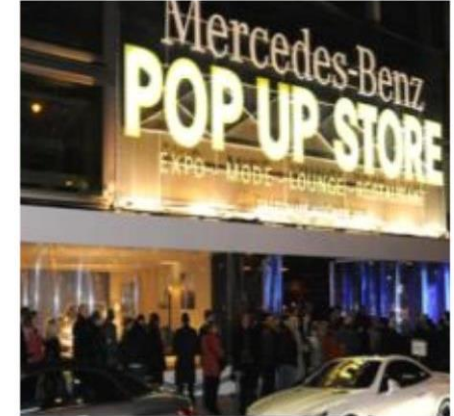
Although conventional channels will still sell majority of vehicles by 2025, new channels to market will emerge



Digital Flagship Stores



Lifestyle Stores



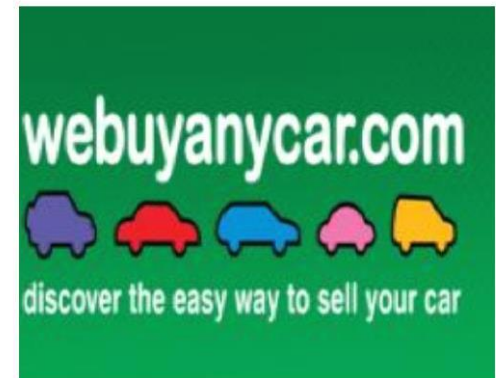
Pop Up Stores



Mobile retailing



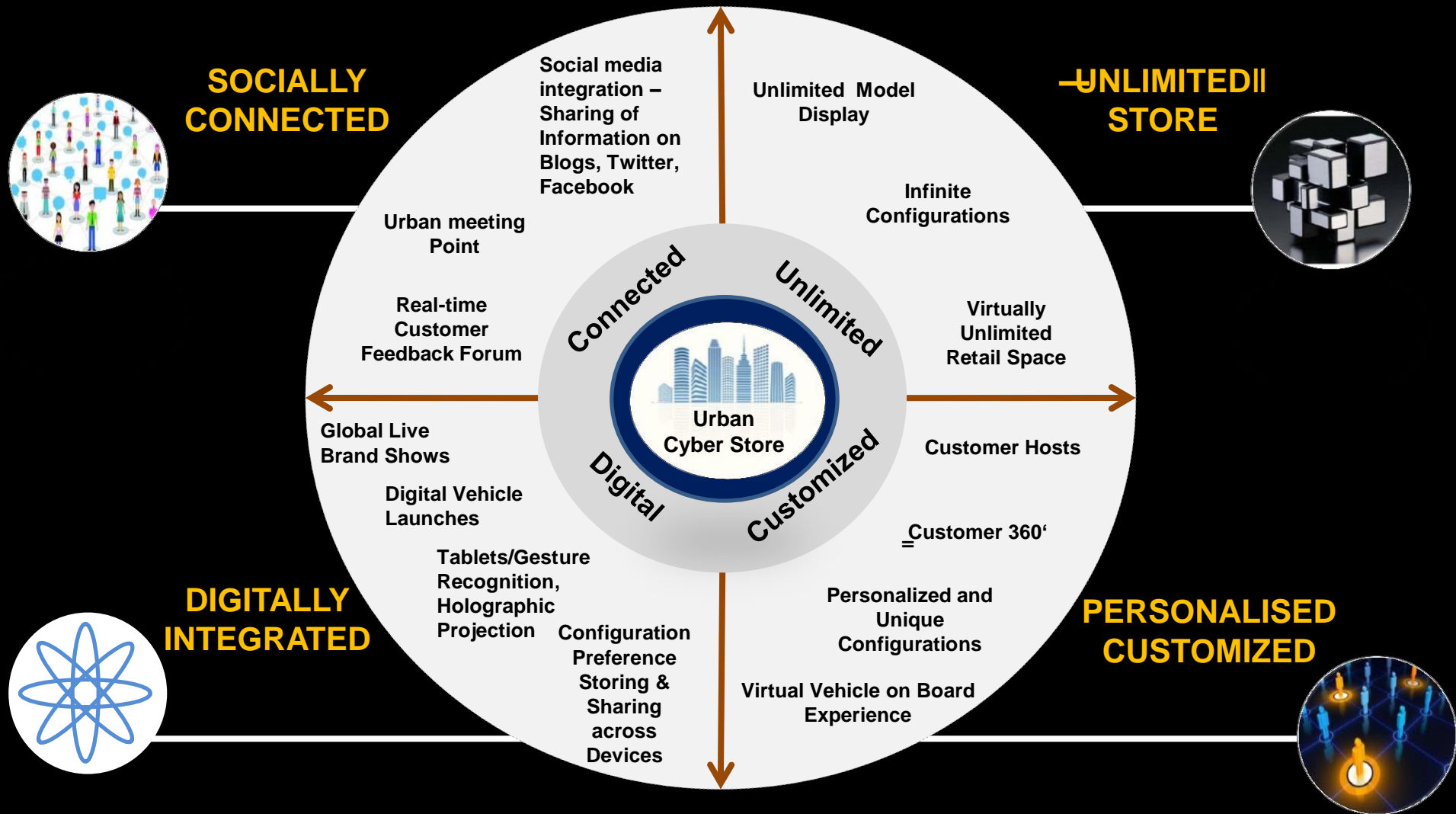
On-line retailing



3rd Party Online Stores

The Car Dealership of the Future

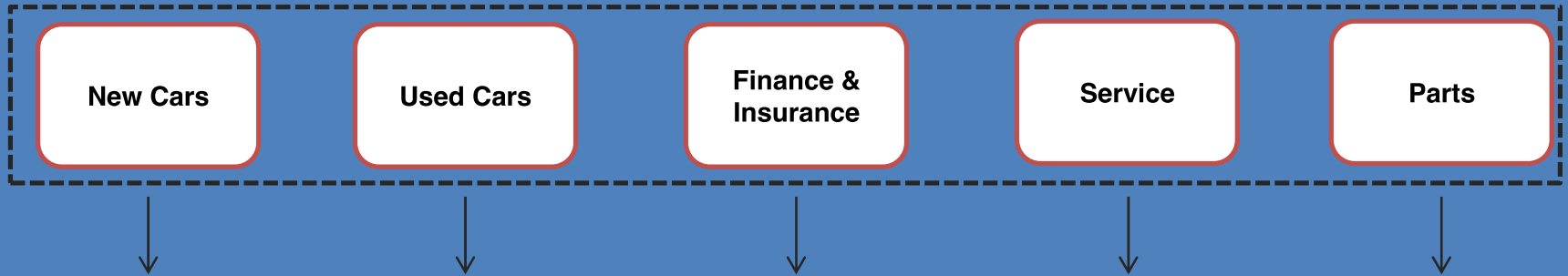
The Unlimited 24 hour Urban Digital Store



Unbundling of the Automotive Business

The Multi Channel strategy for the future

Bundled (Single Location, One-stop-Shop)

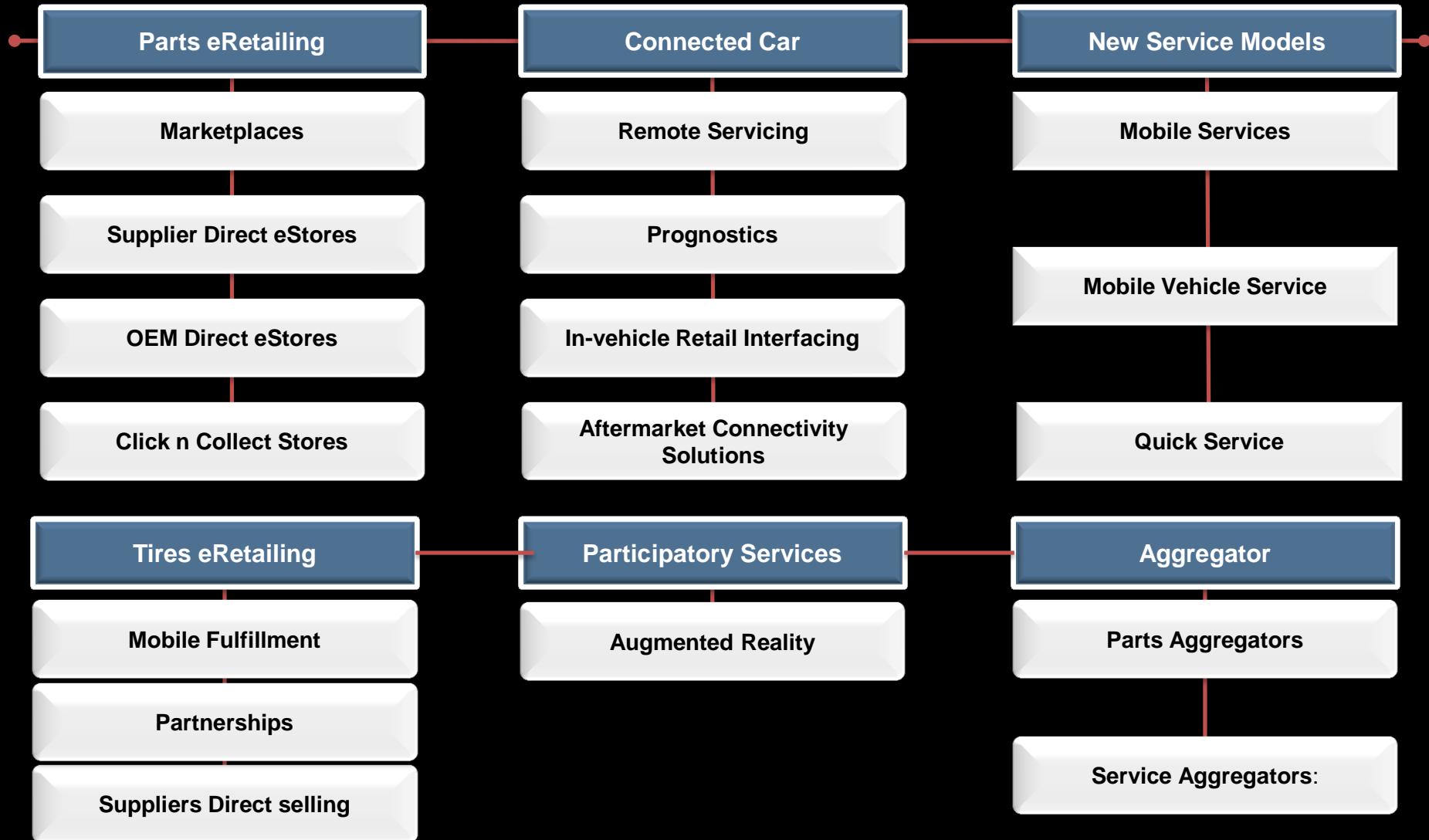


Unbundled (Multiple services, channels, aggregated online)



New Entrants and Disruptive Models in the **Aftermarket**

Traditional participants will need to invest or acquire new entrants in order to survive and grow.



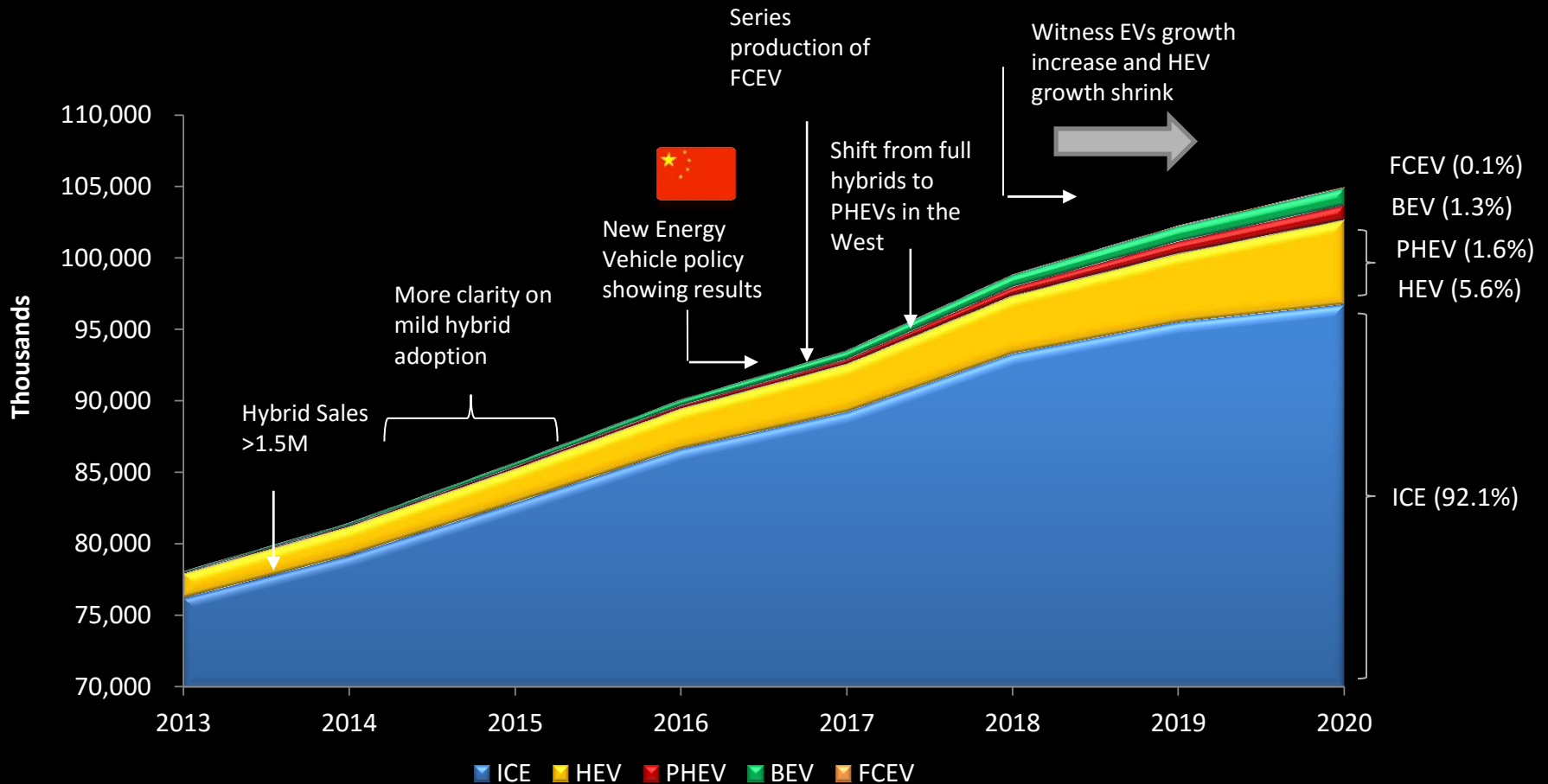
Source: Frost & Sullivan

Future Of Mobility

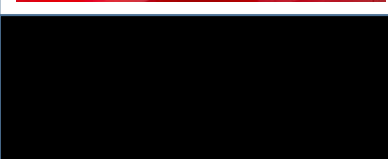
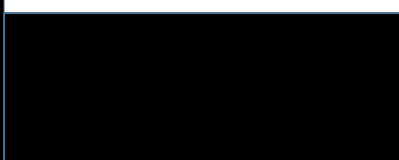
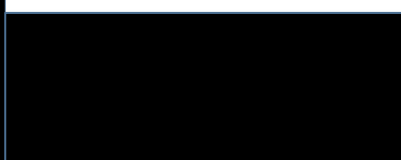
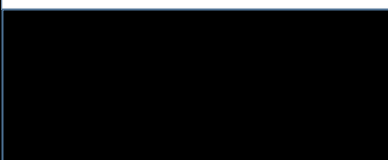


Global Powertrain Market

Euro 5 will continue to push cleaner and greener emission reducing technology in **Chile's** Powertrain market



Source: Frost & Sullivan



Source: Frost & Sullivan

Future Innovation in Mobility to Focus on The “Wild” Side

Unknown Solutions

Technology Innovation

Traffic Prediction system

Dynamic Parking

ADAS features

Wild Innovation

Mobility Integration

New Mobility Products and
Services

Micro mobility solutions

Known Solutions

Improvement

Micro cars

Electric and FC Cars

Electric Bikes

Application Innovation

Corporate mobility solutions

Car Sharing

Car Pooling

Bike Sharing

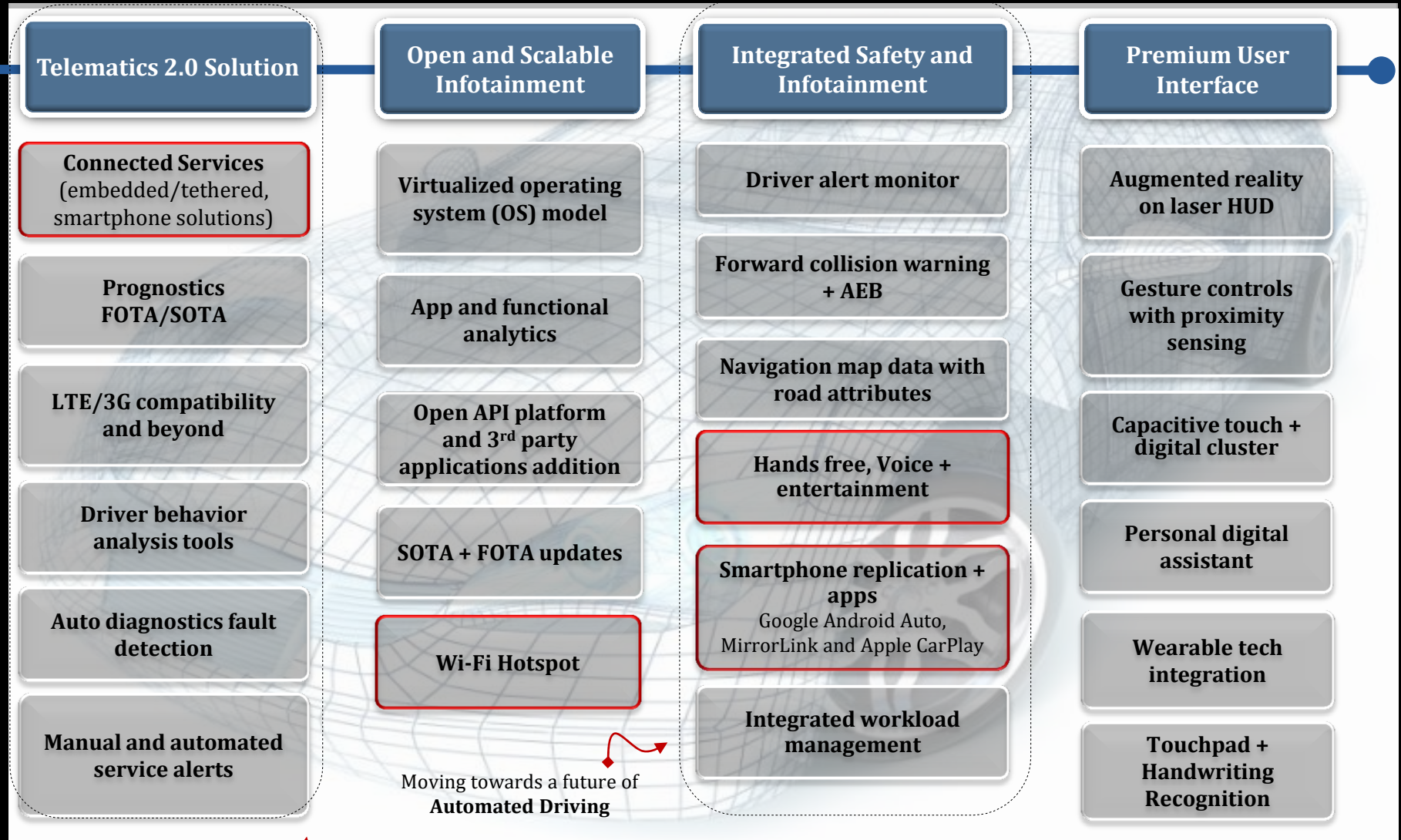
Met Needs

Unmet Needs

Source: Frost & Sullivan

Connected Cars To See Huge Growth With Apple and Android Entering the Industry

OEMs such as Volvo offer OnCall in the Chilean Market



Micro Mobility Market to Witness Accelerated Growth

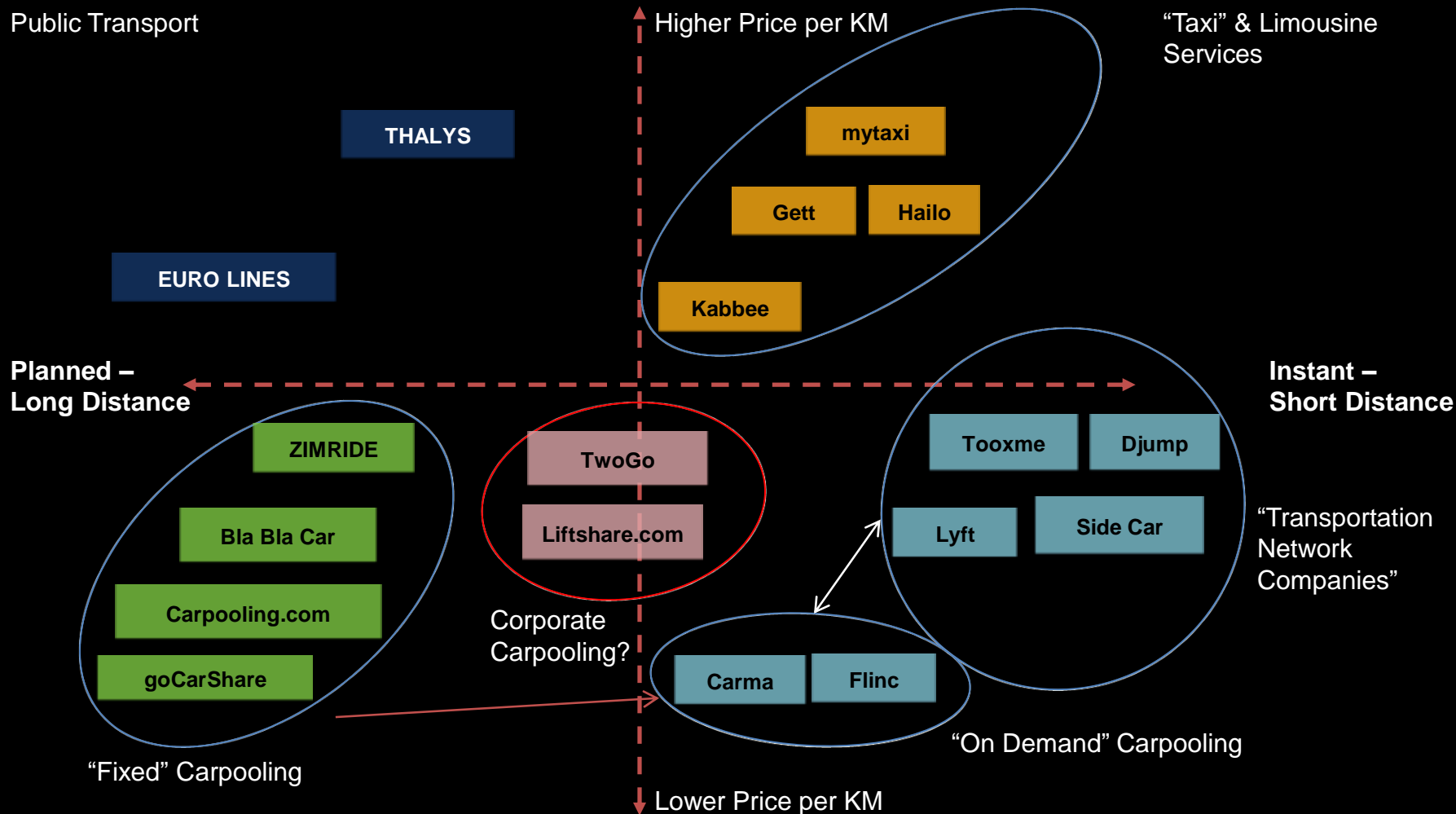
Micro-mobility solutions market to explode in future – Over 125 models identified with over Half expected to be Launched by 2017/18



Source: Frost & Sullivan

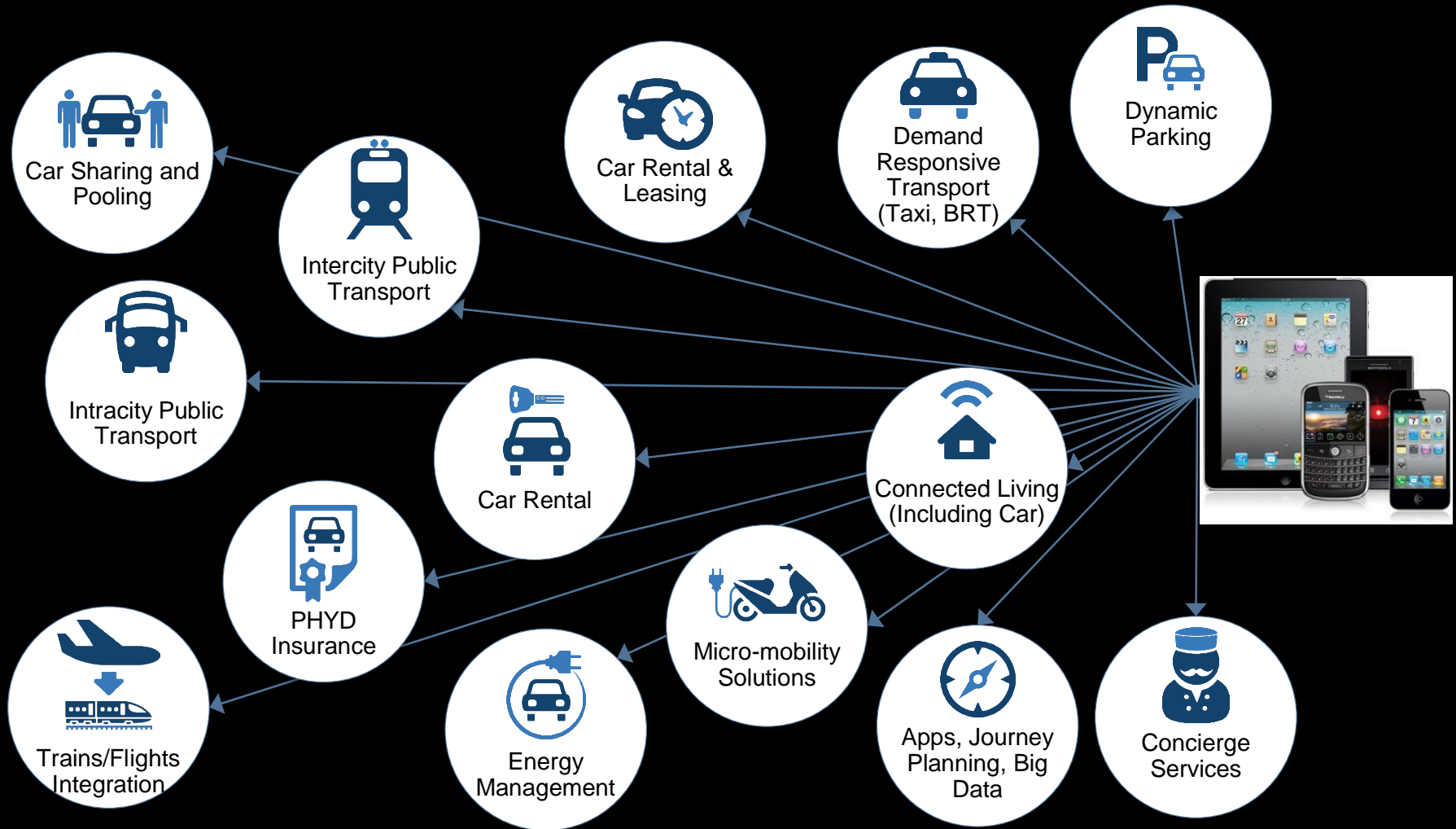
Transformational Shift: New Business Models—Growth of **Ride Sharing Business Models Globally**

Tripda, Viaja conmigo, Nos Fuimos, Rides are examples; E-Hailing with examples such as Easy Taxi exist in **Chile**



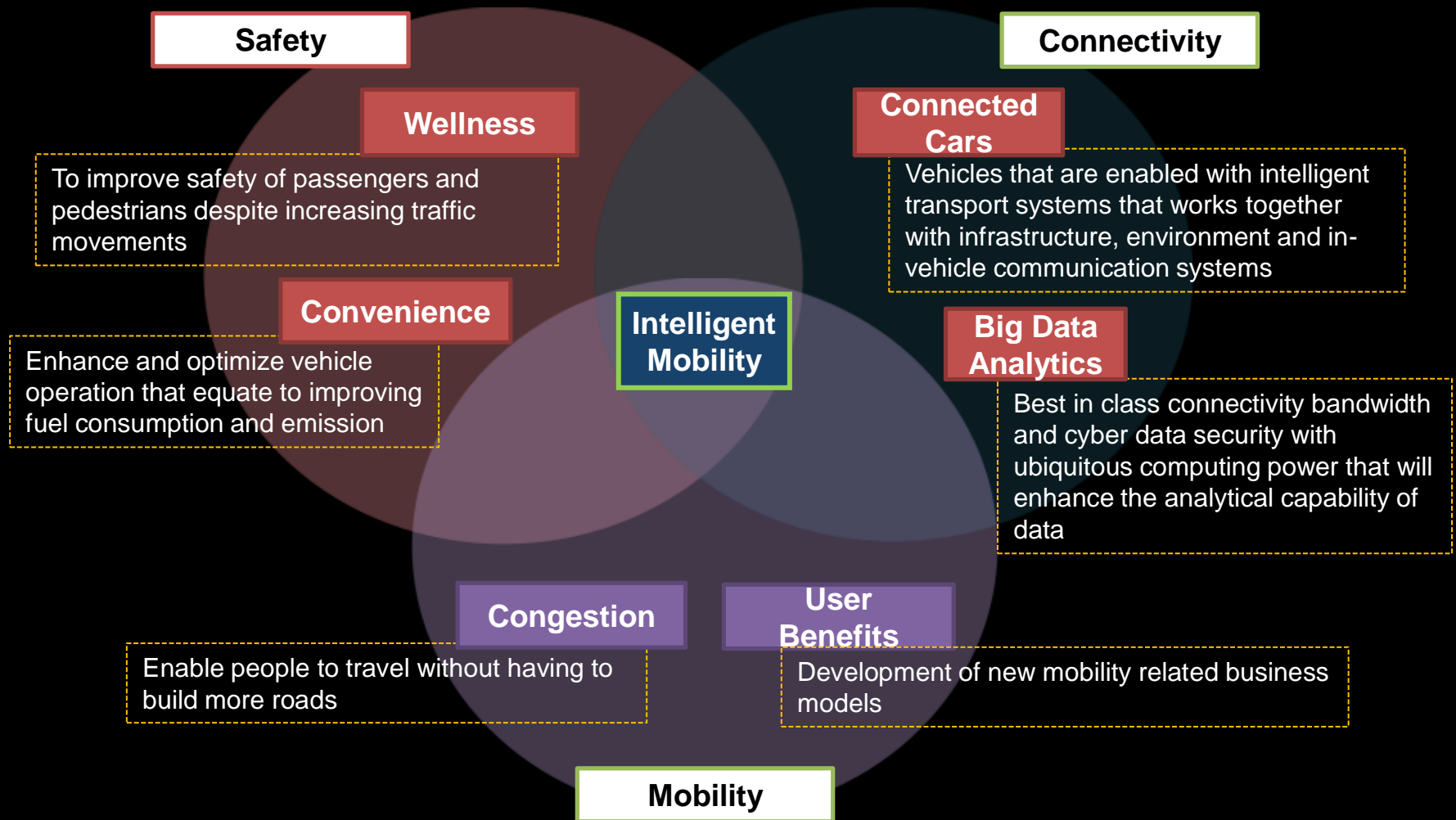
Transformational Shift : **Integrated Mobility**

Technology enabled, any device delivery of real-time, door-to-door, multi-modal travel encompassing pre-trip, in-trip and post-trip services bringing Convenience, Time & Cost Savings to the Mobility User – **Chile's Bip! Card** in Santiago an example



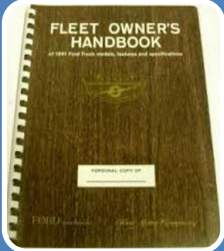
Source: Frost & Sullivan

Intelligent Mobility – convergence of safety, connectivity and mobility



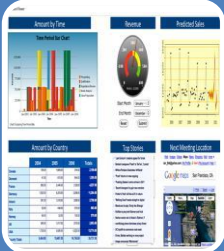
Source: Frost & Sullivan

Transformational Shift : **Future of Corporate Mobility** - From TCO to TCM



Total Cost of OWNERSHIP

- Running Core Fleet & Keeping Company Drivers Informed



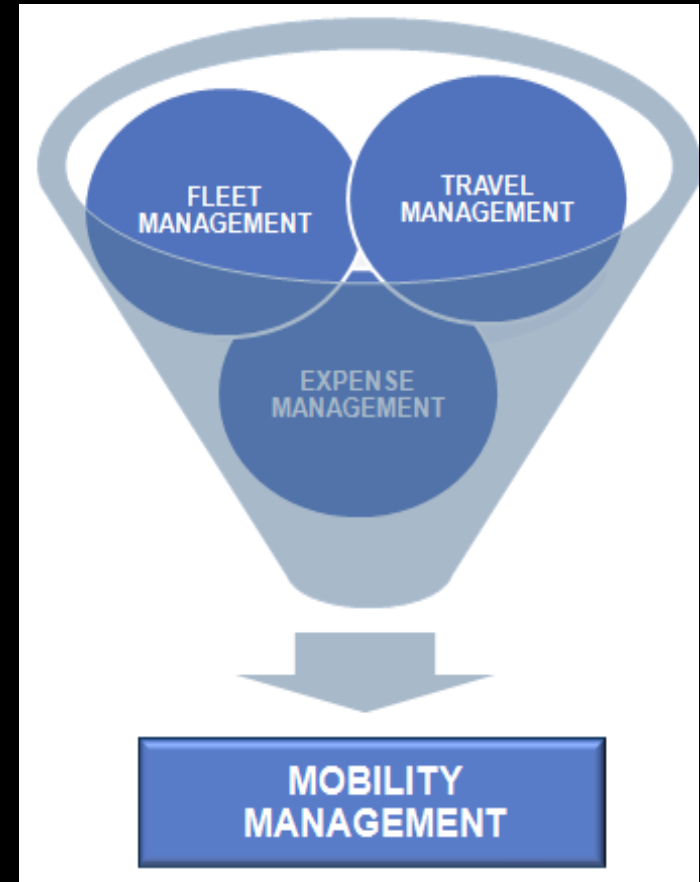
Total Cost of USERSHIP

- Managing Overall Fleet & Educating All Company Drivers



Total Cost of MOBILITY

- Delivering Integrated Services & Empowering All Employees



Source: Frost & Sullivan

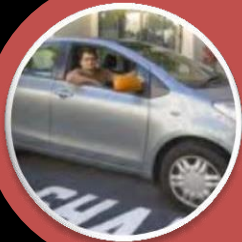
Frost & Sullivan's Vision for the **Future of Corporate Mobility**



**Integrated Multi Modal
Platforms (for business)**



**OEMs increase Corporate
Mobility footprint**



**Growth of –sharingll
reducing need to own /
sole use (e.g. company
car)**



**Mobility Auditing &
Mobility Budgets**



**Changing working
locations/patterns change
mobility requirements**



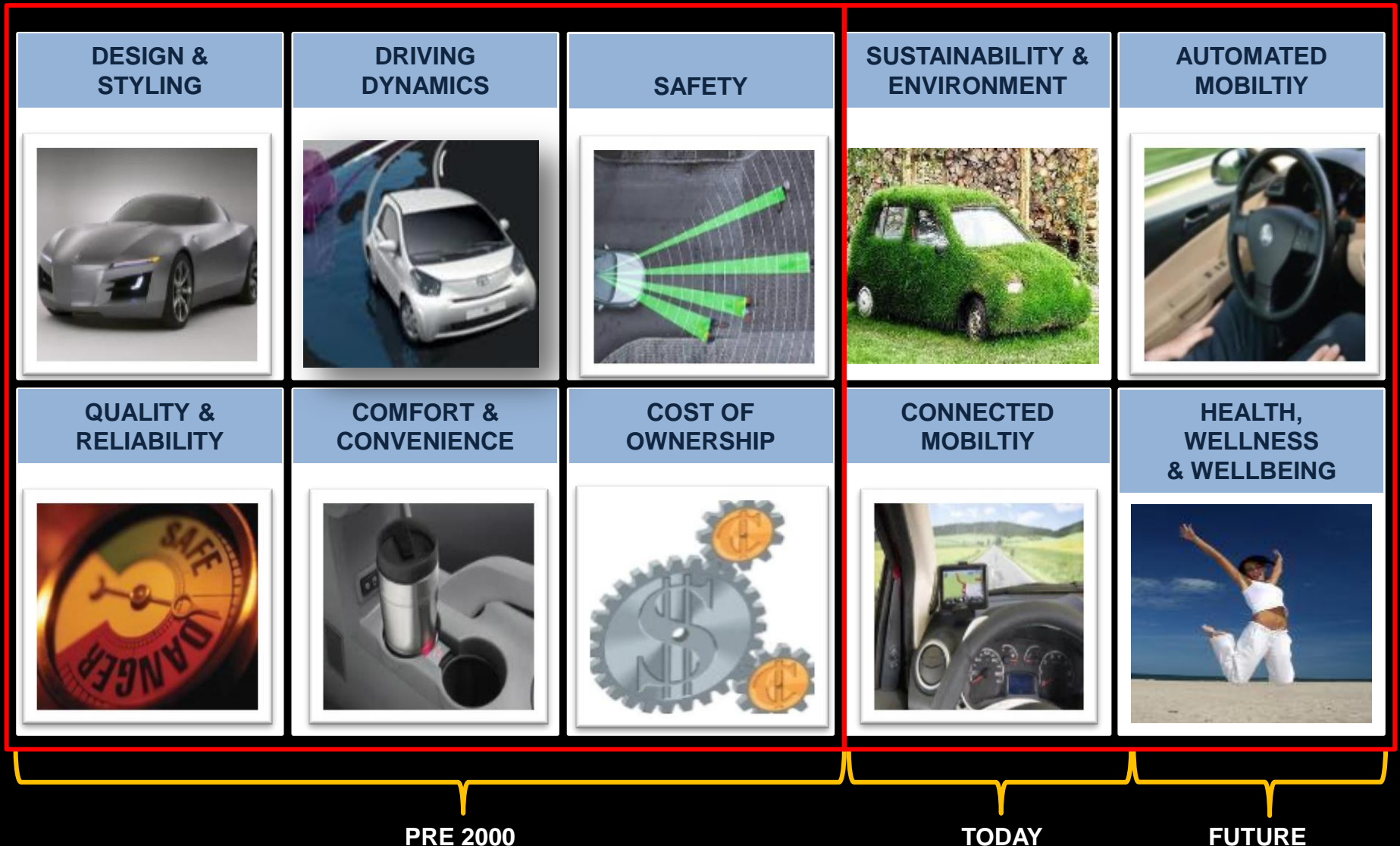
**Rise of Internet
Aggregators (smartphone
enabled)**

Source: Frost & Sullivan

Conclusion



How the Automotive Industry Will Differentiate Itself In Future



Conclusion: Is the Future of Mobility James Bond



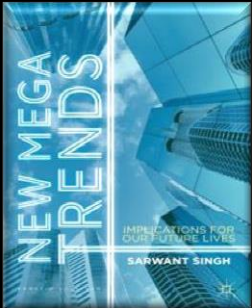
F R O S T & S U L L I V A N

..... or Jason Bourne!



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

Learn More About **New Mega Trends**



Published Book:

New Mega Trends

Implications for our Future Lives

By Sarwant Singh

Publisher: Palgrave Macmillan

<http://www.palgrave.com/products/title.aspx?pid=577423>



**Join Our Mega Trend Group
On**

**Mega Trends: Strategic
Planning and Innovation
Based on Frost & Sullivan
Research**

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