A Strategic Insight Into Carsharing Market Developments and Dynamics

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Agenda

A review of the key urbanisation trends driving the development of new mobility solutions

Definition of the current market size (membership & vehicles) and growth expected in Europe

An assessment of the various business models and leading organisations

Key conclusions and takeaways to drive Car-Sharing adoption
The urbanisation and mega trends that will shape tomorrow’s mobility and transportation needs

Mega Cities & Mega Regions (Over 50 cities by 2025 <10 million inhabitants)

Integrated Mobility (smooth inter-modality – metro, bus, vehicle sharing, etc.)

Smart and Sustainable Cities (Over 100 smart cities with state of the art mobility & connectivity)

Vehicle Ownership/Sharing Trends (Over 10 million members of carsharing in Europe and North America by 2016)

Technology Developments (Integration - mobile payment, cloud computing, security)

New Economic Developments (BRIC and Next BRIC Infrastructure developments)

Standardisation & Harmonisation (inter-operability across systems)
**Top 20 megacities & car ownership trend:** Cities in the developing economies expected to see a decline in car ownership for the first time

### Evolution of Megacities: Top 20 Megacities – Car Ownership Growth (Global), 2009 - 2025

<table>
<thead>
<tr>
<th>City</th>
<th>Population (Million)</th>
<th>Per capita 2025 (USD)</th>
<th>Cars per 1000 - 2009</th>
<th>Cars per 1000 – 2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tokyo</td>
<td>38.5</td>
<td>46,494</td>
<td>353</td>
<td>340</td>
</tr>
<tr>
<td>New York</td>
<td>25.9</td>
<td>67,591</td>
<td>230</td>
<td>220</td>
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<tr>
<td>London</td>
<td>14.4</td>
<td>57,746</td>
<td>400</td>
<td>340</td>
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<tr>
<td>Mexico City</td>
<td>21.0</td>
<td>33,795</td>
<td>209</td>
<td>270</td>
</tr>
<tr>
<td>Shanghai</td>
<td>21.0</td>
<td>32,952</td>
<td>32</td>
<td>122</td>
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<tr>
<td>São Paulo</td>
<td>21.5</td>
<td>28,001</td>
<td>150</td>
<td>335</td>
</tr>
<tr>
<td>Buenos Aires</td>
<td>13.8</td>
<td>43,581</td>
<td>190</td>
<td>350</td>
</tr>
<tr>
<td>Mumbai</td>
<td>26.4</td>
<td>21,224</td>
<td>24</td>
<td>72</td>
</tr>
<tr>
<td>Beijing</td>
<td>20.0</td>
<td>25,000</td>
<td>35</td>
<td>155</td>
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<tr>
<td>Delhi</td>
<td>22.5</td>
<td>21,335</td>
<td>117</td>
<td>250</td>
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<tr>
<td>Moscow</td>
<td>14.5</td>
<td>42,759</td>
<td>307</td>
<td>475</td>
</tr>
<tr>
<td>Guangzhou</td>
<td>11.8</td>
<td>36,332</td>
<td>43</td>
<td>173</td>
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<tr>
<td>Seoul</td>
<td>9.7</td>
<td>43,860</td>
<td>239</td>
<td>320</td>
</tr>
</tbody>
</table>
As a Result of Urbanisation in Future, There Will be Shift from *Cities Designed around Cars* to *Cars Designed around [Mega] Cities*: OEMs to Develop New Vehicles and Platforms

**NISSAN**

- **‘City Cars’** – In sync with the city → Pixo, Note and Cube
- **Compact Vehicle**: less than 4,000mm x 1,675mm
- **Low emissions**: 1-litre engine, EV in future
- **Tight turning circle** of 4.5m
- **Power assisted steering** for easy maneuvering in city traffic
- Parking system, Start Stop system, Nissan Connect, foldable rear seats, customizable setting

**BMW**

- **Megacity Vehicle** – be launched in 2013.
- **Electro-mobility** – ZEV (Li-ion battery with 35 kWh capacity )
- **Electric drive** - Electric motor for quicker acceleration and zip drive.
- **Lighter drive** –CFRP passenger cell, Aluminum chassis.

**TATA**

- **City Car** in EU and NA
- **Compact Vehicle**: 3099mm x 1,495mm
- **Low emissions**: sub 1 litre engine (624cc), EV in future.
- **Turning radius**: 4m.
- **Low vehicle weight**: 600 kg (1,300lb)

Though newer cars are becoming city-centric, consumers are not relieved off hassles of purchase, maintenance, parking, congestion, insurance and inspection.

Mega Cities need *not just a car*, but a flexible, hassle-free mobility solution that is eco-friendly.

Logos are only for descriptive purpose. Source: Frost & Sullivan
Opportunities in Car Sharing 2020: Carsharing to emerge as additional business opportunity for automotive manufacturer for customer retention and long term sustainability

1. **Member**
   Carsharing subscriber base to be 14 Million in EU by 2020

2. **Vehicle**
   200,000 shared vehicles expected in Europe by 2020

3. **Potential Market**
   France, United Kingdom, Germany and Switzerland to hold around 75% of Revenue Share in 2016.

4. **Usage of Electric Vehicle**
   By 2016, 1 in 5 vehicles of the carsharing vehicle fleet is expected to be a battery powered EV.

5. **Revenue Generation**
   The revenue potential of carsharing market is expected to be € 7 billion by 2020 in Europe.

- **Carsharing Vehicles & Members (World), 2010-2020**
  - Worldwide 32 Million subscriptions expected by 2020
  - Member
  - Vehicle

- **Members (in Million)**
  - Japan
  - NA
  - Europe

- **Vehicles (Thousands)**
  - 2010
  - 2020
Carsharing Customer Profile - Potential Impacts and Benefits of Carsharing are Easily Understood by Educated Consumers

General Profile
- Gender: Male: ~ 60%, Female - ~ 40%
- Average age group: Mid – 30’s
- Growing age group: 25 – 30
- Each carsharing vehicle removes 8-10 private vehicles off the roads
- In Germany, statistically, each carsharing vehicle is used by 35-40 members

Education
- About 60% of Carsharing users are university graduates or hold advanced degrees
- This age group finds carsharing more in-line with their needs and expenditure
- Growing target group: College and university campus students
- Currently, more than 80% of Italian Carsharing Members are working professionals

Demographics & Demand
- Customers: Residential: ~ 83-87%; Corporate: ~ 12-17%; Universities: ~ 2-4%
- Miles Travelled: Individual: 15 trips x 20 miles. Business: 30 trips x 32 miles (annually)
- Potential Target Group: Universities, Government, Private fleet vehicles
- Average trip per day: 2-3 hours; 23 miles; 2-3 trips per month
- Vehicle demand adjustment: Excess demand from Rental companies handled by CSOs
**Country Benchmarking:** National Framework is Needed to Bring Carsharing into Mainstream Transportation Solutions

**Mobility management represents a country's interest in the areas of:**
- Promotion of clean vehicles
- Sustainable transportation
- Awareness of sustainable mobility
- Road pricing schemes
- Travel awareness on modality

**Benchmarking of Carsharing Countries (Europe), 2010**

- **High Mobility Management**
  - The Netherlands
  - Switzerland
  - The United Kingdom
  - France
  - Sweden

- **Low Mobility Management**
  - Germany
  - Austria
  - Belgium

- **High Federal Support**
  - Spain
  - Italy

- **Low Federal Support**

**Federal support includes the following:**
- State Funding
- Parking policies
- Incentives to CSOs and subscribers

*Source: Frost & Sullivan*
Car Sharing: 14mn Members in EU by 2020 with Germany, UK and Switzerland the 3 biggest markets for Car-Sharing membership in Europe

Key Car Sharing Companies and Membership by Country (Europe), 2010

Car Sharing Members in 2009
- > 80,000
- 15,000 – 80,000
- <15,000

Carsharing Membership (Europe)

Carsharing Market Revenue (Europe)

Revenue possibility of €7 billion by 2020

Source: Frost & Sullivan
France, The United Kingdom, Germany and Switzerland are Expected to Together Hold Around 75% of the Revenue Share in 2016

Key – Revenue Potential in 2017:
- < 40 € Million
- > 40 - < 100 € Million
- > 100 - < 500 € Million
- > 500 € Million

Partnership between local authorities and operators has delivered successful schemes, esp. in London, where 4000 new parking bays are expected by 2013

Fewer number of main stream operators to limit expansion and carsharing coverage.

Lack of government support to limit adoption and saturate the market.

Note: Others include, Denmark, Finland, Greece, Ireland, Luxembourg, Portugal

• Higher hourly charge/mileage charge of EVs compared to traditional powertrain vehicles are likely to increase revenue share for countries such as France and the United Kingdom and they are expected to have a revenue CAGR of 80% and 55% respectively
Around 77,000 Vehicles Expected in the Carsharing market by 2016, Potential to Replace More Than 1 Million Vehicles

**Total Forecasts for Carsharing Vehicles (Europe), 2010 and 2016**

- **Germany**
- **The United Kingdom**
- **Switzerland**
- **France**
- **Others**

**Vehicles CAGR : 28.6%**

- **2010** estimated:
  - Germany: 16,287 (3%)
  - The United Kingdom: 3,000 (35%)
  - Switzerland: 6,000 (17%)
  - France: 9,000 (27%)
  - Others: 2,000 (3%)

- **2016**:
  - Germany: 77,254 (24%)
  - The United Kingdom: 12,000 (16%)
  - Switzerland: 24,000 (8%)
  - France: 15,000 (28%)
  - Others: 8,000 (3%)

Note: Others include Austria, Belgium, Italy, The Netherlands, Spain, Sweden, Denmark, Finland, Greece, Ireland, Luxembourg, Portugal

- **Vehicles replaced would lead to reduced congestion, parking spaces** and with EVs being an attraction, there is a **significant emission reduction** that can be achieved due to carsharing alone.
**Future Mobility Concepts:** The concept of a dynamic transport solution integrating different modes under a single entity to make personal transportation easy and simple.

**MultiModality Paving way to Mobility Integrators – One Stop Shop Mobility Solutions provider**

Mobility Integrators (MI) to offer various types of mobility solutions to complement commuters inter-modality and multi-modality travel split.

**Future Mobility is not just about vehicles, it is a convergence of different industry sectors that is interacting seamlessly.**

**Technology Evolution MOBILE 2.0**
UK and Germany, which Comprise 60% of EU member Market Share are to be Driven by For-profit Carsharing Businesses

<table>
<thead>
<tr>
<th></th>
<th>Non-profit</th>
<th>For-profit</th>
<th>Co-operative</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Financing</strong></td>
<td>Sponsorships, subscriptions and grants</td>
<td>Easy access to capital</td>
<td>Subscribers or members</td>
</tr>
<tr>
<td><strong>Growth Potential</strong></td>
<td>Low</td>
<td>High</td>
<td>Medium</td>
</tr>
<tr>
<td><strong>Geography</strong></td>
<td>• Germany</td>
<td>Europe wide</td>
<td>• Sweden</td>
</tr>
<tr>
<td></td>
<td>• The United Kingdom</td>
<td></td>
<td>• Germany</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Switzerland</td>
</tr>
<tr>
<td><strong>Geographic Expansion</strong></td>
<td>Local Initiatives</td>
<td>High potential for growth</td>
<td>Mostly regional initiatives</td>
</tr>
<tr>
<td><strong>Government Support</strong></td>
<td>High</td>
<td>Low</td>
<td>Low / Medium</td>
</tr>
</tbody>
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**Peer-to-peer Carsharing**

- Leasing an individual private vehicle into a carsharing fleet.
- Insurance, technology and reservation taken care by the CSO.
- CSOs can acquire/lease a vehicle at a lower cost while the individual can lease an unused vehicle.
- Revenue sharing potential for both CSOs and the car-leasing individual.

*Note: All figures are rounded; the base year is 2009. Source: Frost & Sullivan*
One-way trips crucial for a typical Pay-As-You-Drive Carsharing Model

For-Profit Business Model
- Pay-by-the minute and On-demand mobility concept with 200 smart cars in Stuttgart by 2012
- 600k Rentals completed in Ulm since March 2009
- Fleet of 300 smart fortwo's Micro Hybrids
- Maximum €12.90 per hour
- Open-ended, floating parking and one-way trips possible.
- 90% of car rentals in Ulm project used one-way trips

Cooperative Business Model
- Reserve, Drive, Refuel & Return
- 1250 stations with 2500 cars across Switzerland
- 16 vehicles across 10 tariff plans
- Only round-trips allowed

- Drive credit worth CHF 25 for referral scheme
- 2300 – 0700 hrs at 50% daytime tariff rates
- Tie-up with Hertz & Avis for the car-rental scheme to share weekend and holiday demand
Carsharing is Currently an Urban Phenomenon and Competition to Drive For-profit Companies to Semi-urban and Rural Areas

Roadmap of CSOs by Demographics (Europe), 2007-2015

Key:
- High Presence
- Medium Presence
- Low Presence

Source: Frost & Sullivan
Key Takeaways: Consumer Awareness and Governmental Support essential for wider adoption of Carsharing as a mobility Solution

Sustainable mobility solution for 5 Million Europeans by 2016

Collaborate with other systems for Multimodal & intermodal solutions

Mergers & Acquisitions aid Carsharing in gaining global reach

- Consumer Awareness about carsharing is pivotal to success
- VMs, rental companies & government initiatives are to enter carsharing space
- Fuel prices, demand for parking spaces, congestion and environmental pollution drive Carsharing growth
THANK YOU