

4th Ele.C.Tra Technical meeting, 18-19 June Athens

WP6: POST-OPERAM

Feasibility studies: Training session



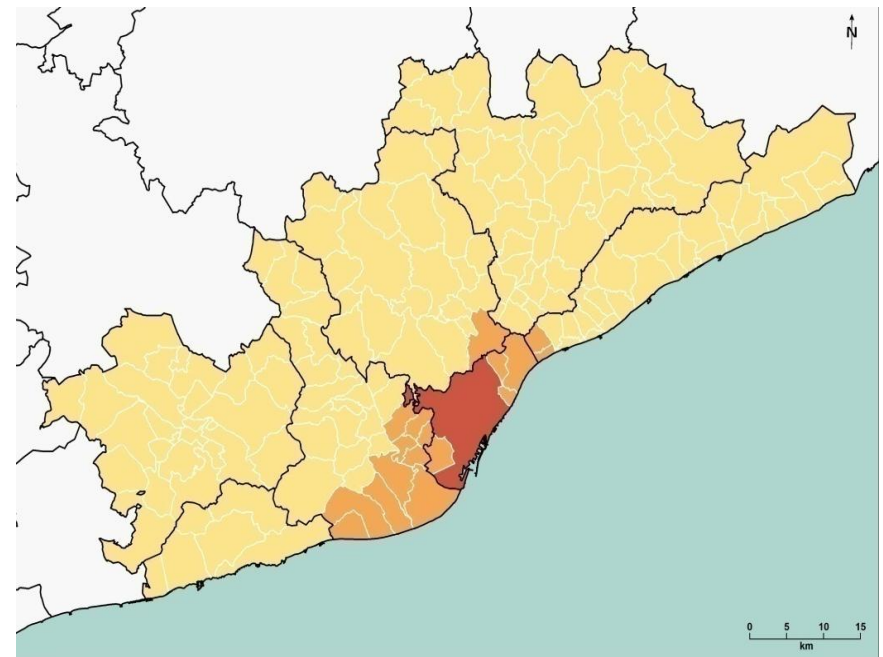
Jordi Abadal

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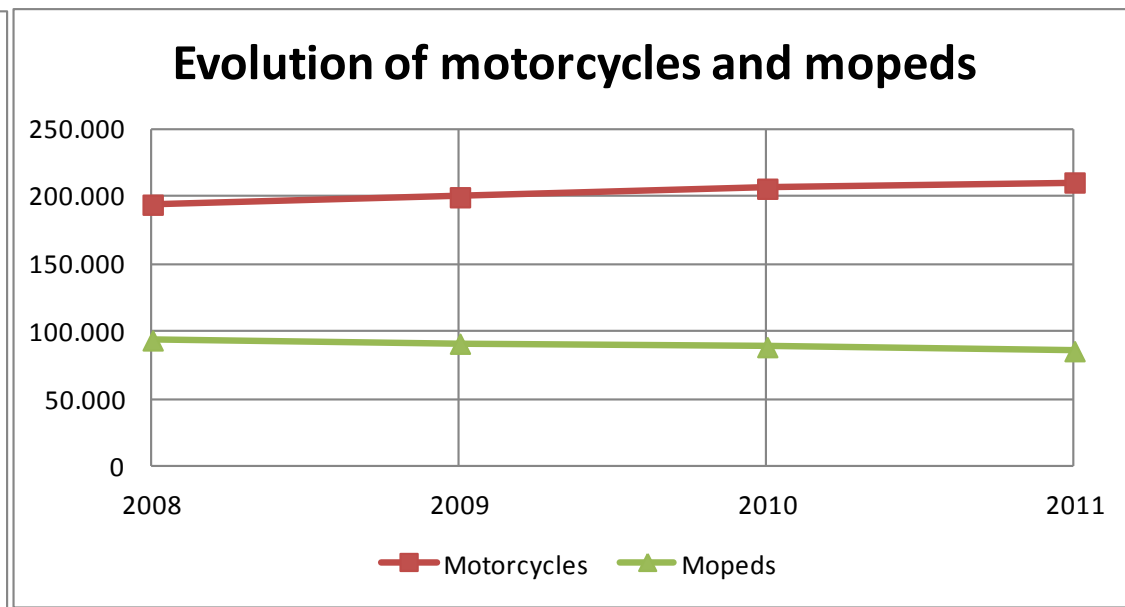
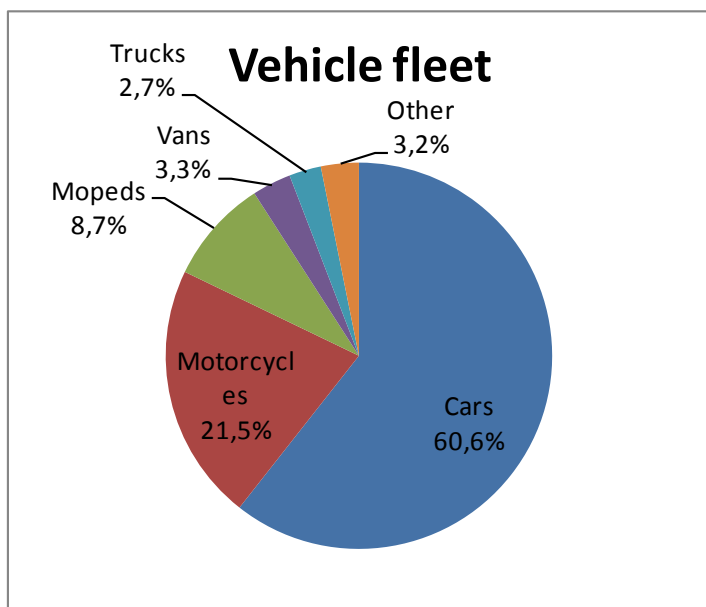


Barcelona

	CITIES	AREA [km ²]	POPULATION	DENSITY [Hab/km ²]
Barcelona	1	101	1.615.448	15.995
AMB	36	628	3.226.944	5.138
RMB	164	3.241	4.777.042	1.474



Barcelona

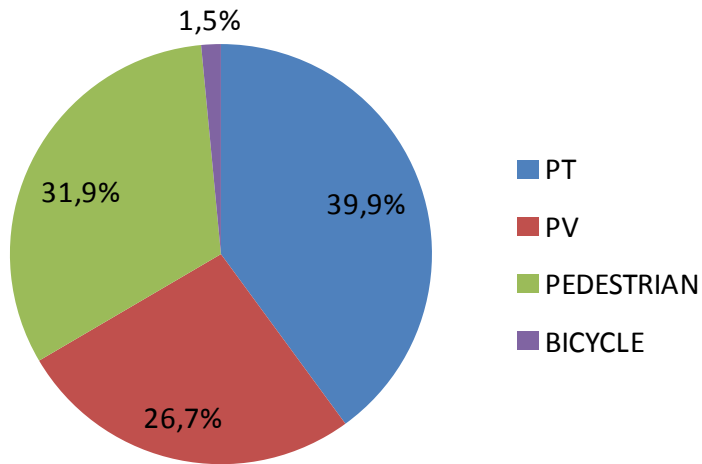




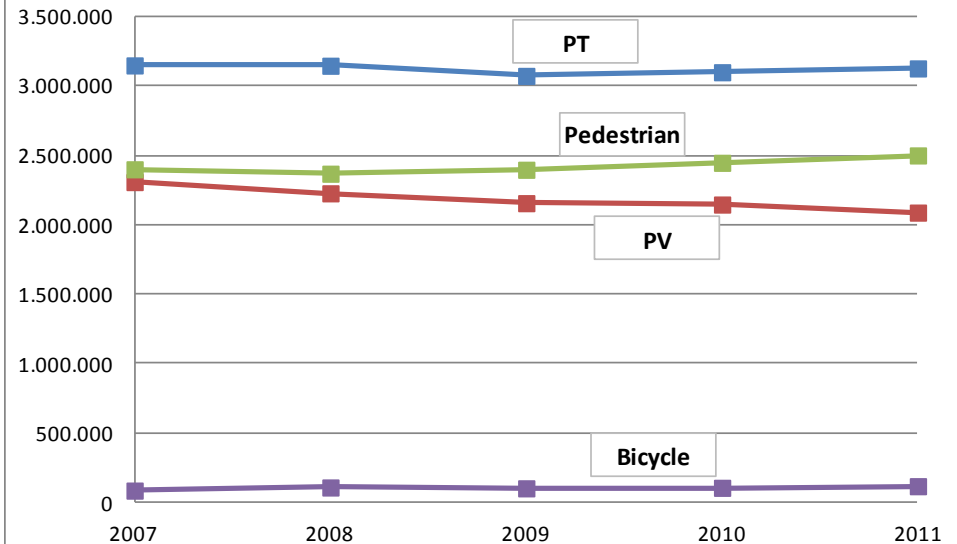
Barcelona

Modal distribution

Total trip steps



Evolution of current modal distribution and future scenarios





Electric scooter sharing service in Barcelona

Concept “Mobility on Demand”
developed by MIT from Boston.

Currently there are 70 scooters in BCN
- The pilot start with 50 scooters (2013)
- They had the objective to arrive to
500 by the end of 2014





moti

Scooter designed specifically for the sharing system:

1. Resistant to intensive use (chassis, easel, dampers, handlebar...)
2. Support remote communication and management systems
3. Suitable for all kind of users (gender, age): light, easy driving...
4. Specific licenses not required
5. Low maintenance and can be repaired in site (street)



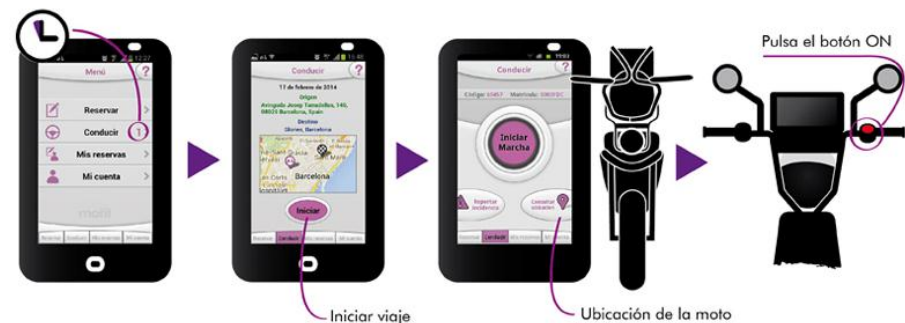
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6. Particular design: company image, theft dissuasive
7. Image from users
8. Local production with local components: increase economic local benefits, improve quality of product and after sales services, avoid delocalization



Operation for users

1. Register as a user
 - Visitor: for free
 - Standard: 29€ (one time fee)
 - Priority: 11 €/month
2. Download APP
3. Book your motorbike
4. Pick the motorbike (<250 m)





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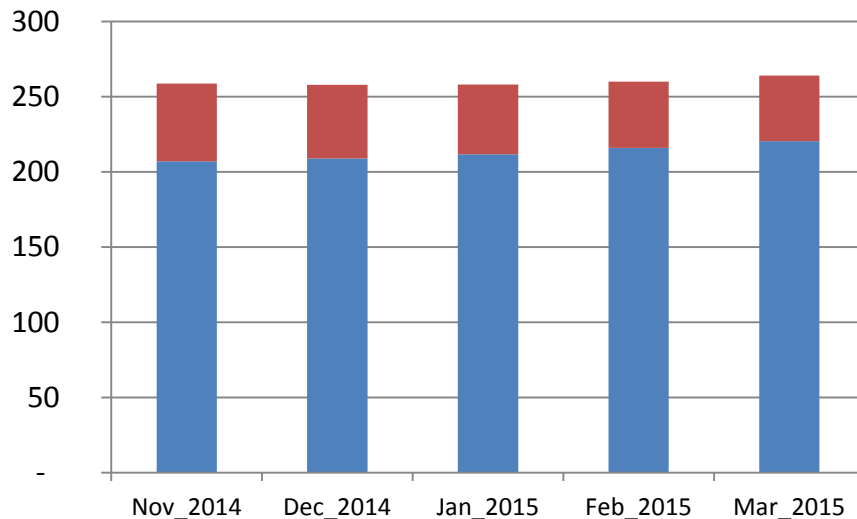
Modalities

1. Trip: 0,45 - 0,7 €/km
2. Time: 4 - 6 €/h
3. Periodic: 7 - 54 €/month
4. Touristic route: 12-18 €



Pilot data (November 2014- March 2015)

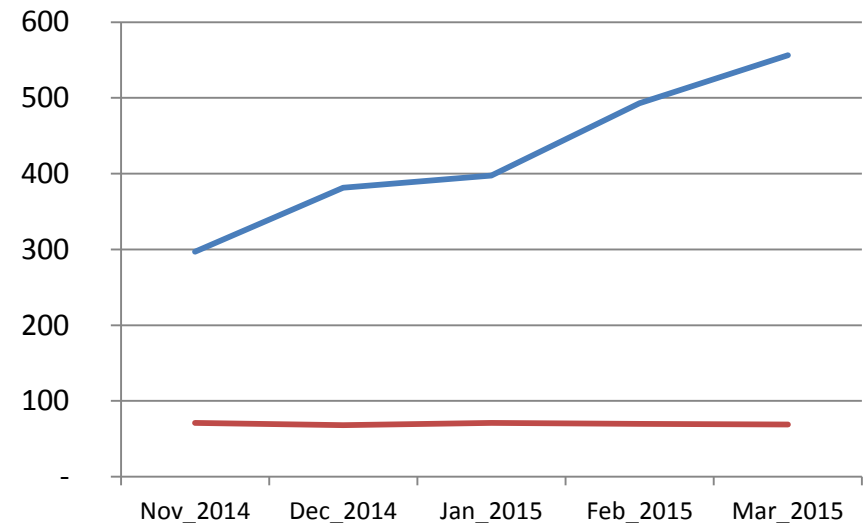
Users



■ Citizen

■ Tourists

Scoters



— Number scooters

— km per scooter



**Motorbike renting company with the headquarters in Barcelona
More than 3.000 motorbikes in most touristic cities (Spain,
France, Italy, Croatia, etc.)**



**Electric scooters renting
130 scooters for Barcelona
More than 500 users
149 €/month**





ECooltra

Scooter model

Autonomy: 80 km

Battery: Lithium Ion (3 kWh)

Charge time: 85% 2h; 100% 4-5 h

Weigh: 120 kg

Consumption: 0,6€/100 km





Two business models

B2B: business to business

Mainly for food delivery and messenger service (60%).
Also real state agency, gas installers...

B2C: business to consumer

Not successful: users don't see economic benefits. To be rentable they need to run more than 50 km per day.
Successful case: students in IESE Business School (mainly foreigners). In front of the university there is an electric charge point which was installed with public support.



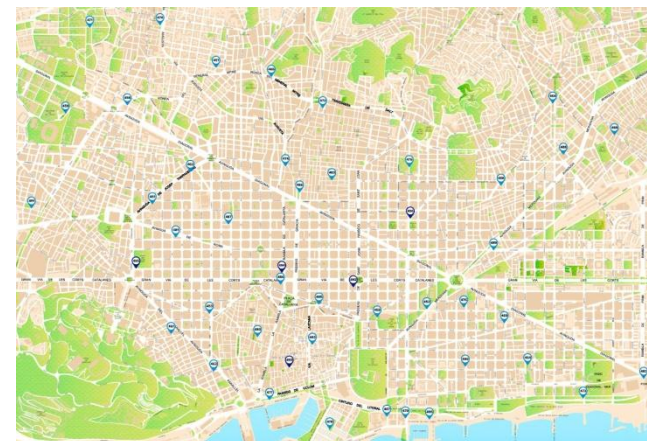


Electric BICING

Started in December 2014 with 23 stations and 150 bikes

Now its in the 2nd phase with 46 stations (41 in underground parking's and 5 in public space), 300 bikes and 2.250 (February 2015)

Price: 14 €/year and 0,45 €/30 min





The urban police incorporate 30 electric motorbikes to its fleet (12-03-2015)

It is expected to arrive to 200 motorbikes in next four years.

Motorbike → C-Evolution (BMW)

Power: 47 HP

Autonomy: 100 km

Maximum speed: 120 km/h

Externalities

Fuel saving: 12.175 litres/year

CO₂ reduction: 18 t CO₂/year

Economic saving: 100.000 €/year





Key factors and recommendations for the implementation of electric scooter sharing systems



Critical mass

1. Decrease investment costs per user
2. Reduce operation costs
3. Facilitate to couple demand and supply
4. Increase servitude area





Reduce prices of sharing service

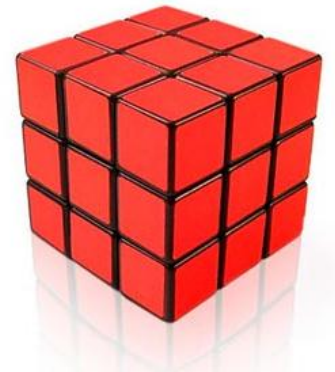
1. Increase number of users
2. Incentives for users for improving the service
3. Grants from public authorities or public/private system
4. Fiscal deductions for the operator
5. Impose taxes for parking private/non electric scooters in public spaces
6. Free tolls for sharing/electric scooters





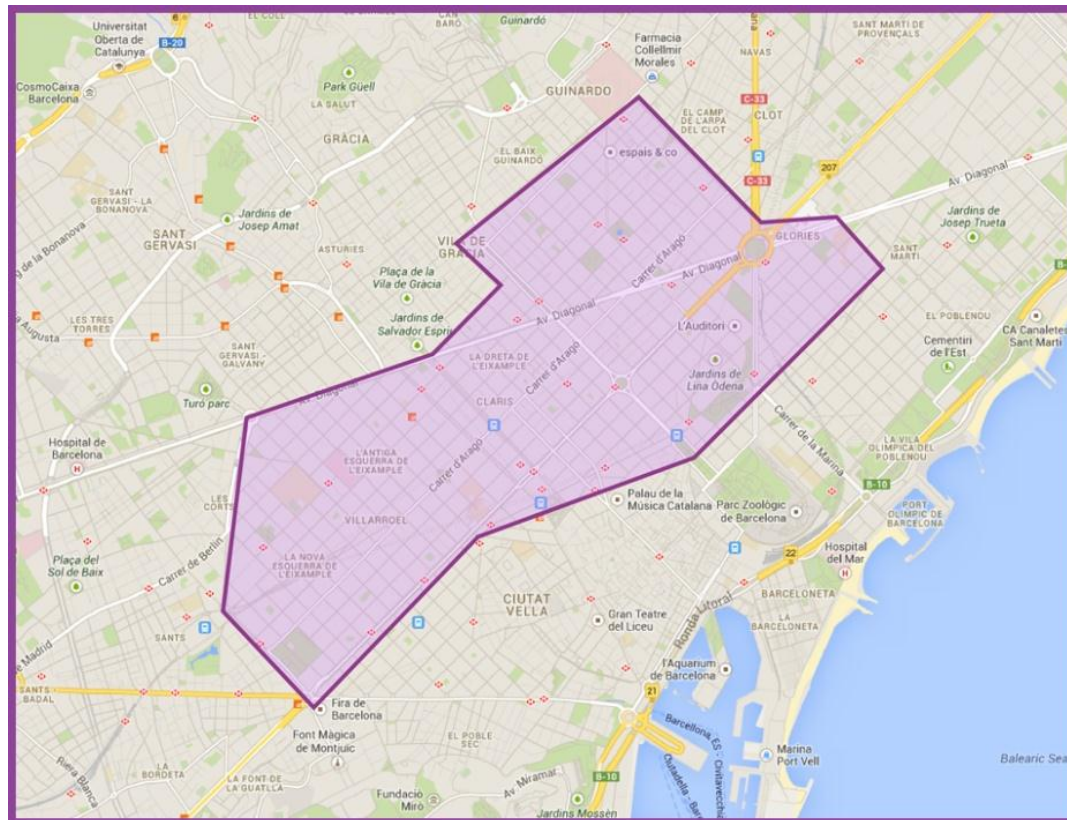
Facilitation for users

1. Increase servitude area and availability
2. Specific parking sites for sharing/electric scooters
3. Provide tools/calculators to economically compare private and sharing scooter system
4. Unify sharing systems (bike, scooter and car): mobility sharing user card, APP integrating all systems
5. Restrictions for fossil fuels vehicles to circulate in certain zones (LEZ, HOV lanes) and during certain periods (air pollution episodes)





MOTIT Area





New potential users

1. Areas with specific characteristics:
industrial areas, train stations, commercial
or business area, zones with high slopes...
2. Agreements with specific companies or
public bodies: employers trips or trips
related to the company (<50 km/day)





Other actions (mainly from public administration)

1. Mandatory or preference of electric vehicles for public tenders
2. Public/private cooperation or public management
3. Good infrastructure of charging points
4. Avoid different companies with the same business model
5. Communication campaigns: economic and time saving, improve air quality, reduce noise levels, improve public space...
6. Scooter testing events: many people is afraid of riding a motorbike

Thank you for your attention!

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