

The smart mobility society: a car manufacturer's vision, by Toyota

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Toyota's Ha:mo

A new type of urban
ultra-compact EV sharing
connected to public transport

Summary

Toyota's vision

Ha:mo Network

Grenoble City

Cité Lib by Ha:mo

Conclusion



Toyota's vision

Smart mobility society



Urbanization challenges cities



Rethinking urban transportation

DEVELOPPED COUNTRIES



Lack of space
Financial constraint

EMERGING COUNTRIES



Severe congestion
Economic losses

LESS DEVELOPPED COUNTRIES



Political uncertainties
Poverty conditions

NEW MOBILITY SOLUTIONS HAVE BECOME A NECESSITY

Two major trends in urban area

MASS TRANSIT SYSTEMS



Light Rail Transit & Subway

Bus Rapid Transit

SHARED MOBILITY



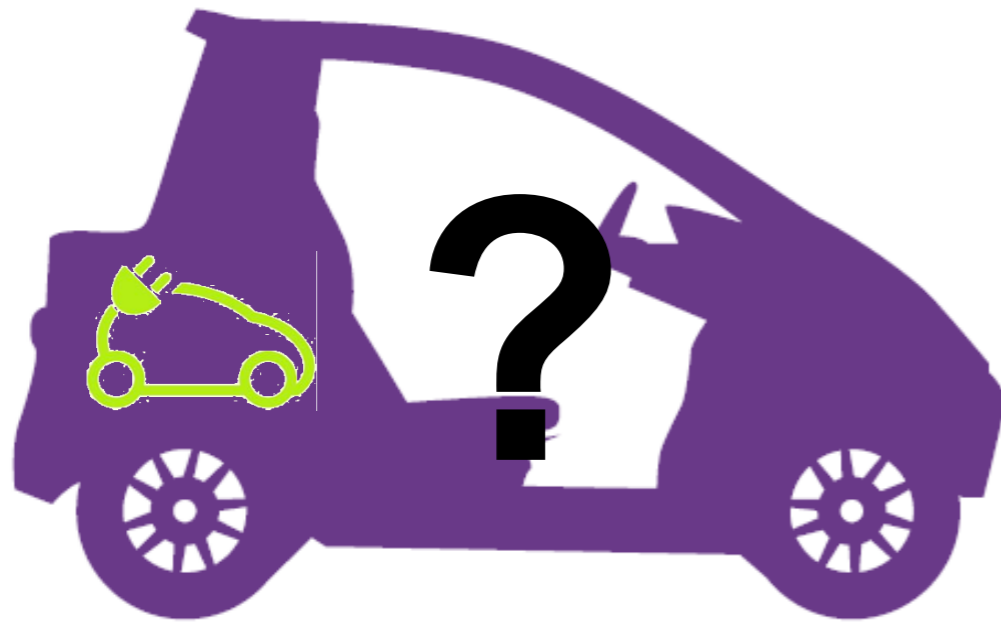
Ride sharing

Car & bike sharing

COMBINING BOTH TO SUPPORT MODAL SHIFT ?

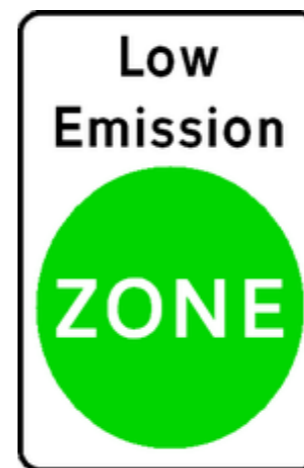
Vehicles, adapted to cities ?

SHORT-DISTANCE NEEDS SUSTAINABLE CITY POLICY



40% < 3km & 10% < 1km
1 to 1,5 passenger /trip
60% with the driver alone

Figures for France 



ULTRA-COMPACT EV, SUITABLE FOR URBAN CITIES ?

A vision: Smart Mobility Society

COMFORT Connected with people...

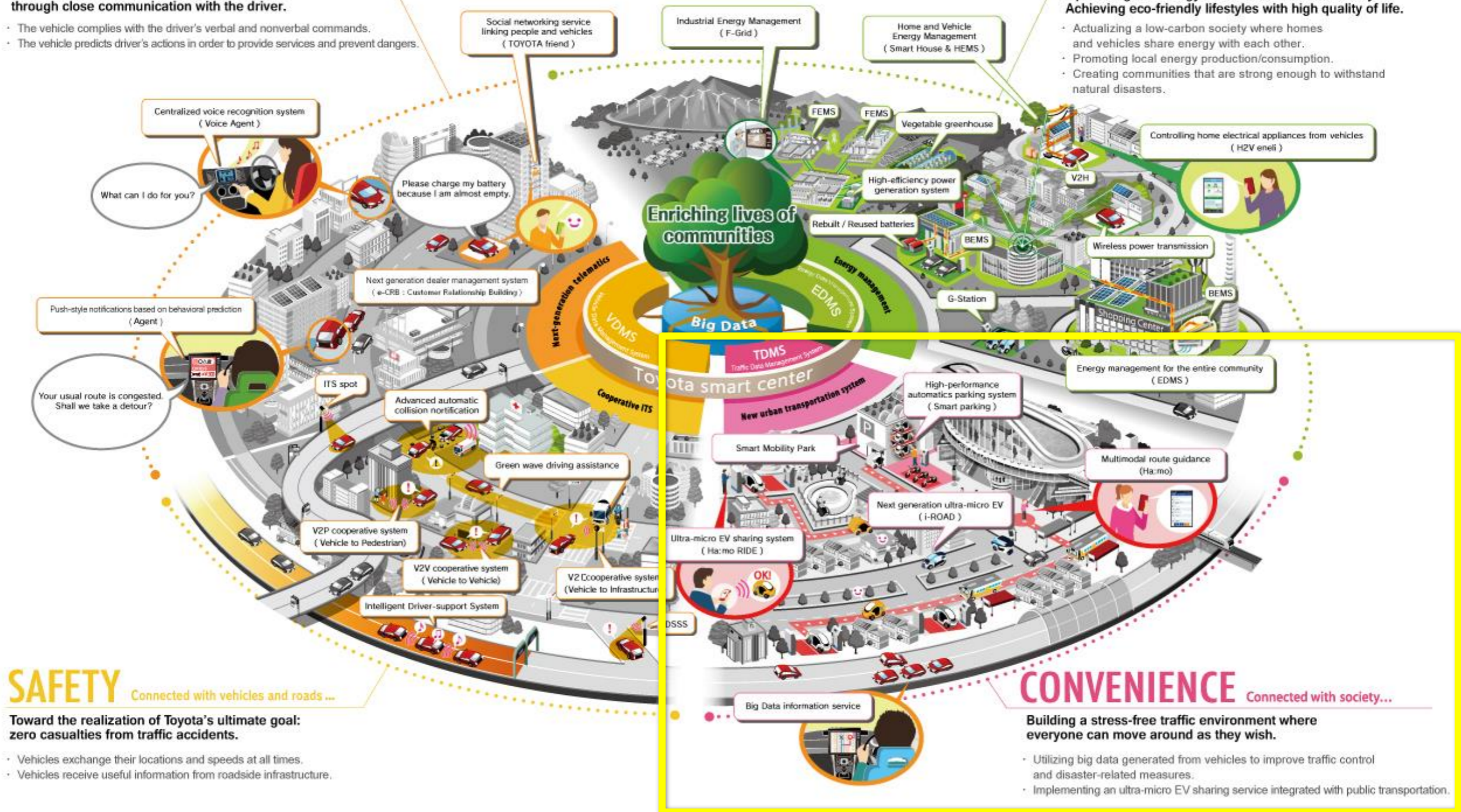
The vehicle will become a trusted partner through close communication with the driver.

- The vehicle complies with the driver's verbal and nonverbal commands.
- The vehicle predicts driver's actions in order to provide services and prevent dangers.

ECOLOGY Connected with the community...

Optimizing the energy use of the entire community. Achieving eco-friendly lifestyles with high quality of life.

- Actualizing a low-carbon society where homes and vehicles share energy with each other.
- Promoting local energy production/consumption.
- Creating communities that are strong enough to withstand natural disasters.



SAFETY Connected with vehicles and roads...

Toward the realization of Toyota's ultimate goal: zero casualties from traffic accidents.

- Vehicles exchange their locations and speeds at all times.
- Vehicles receive useful information from roadside infrastructure.

CONVENIENCE Connected with society...

Building a stress-free traffic environment where everyone can move around as they wish.

- Utilizing big data generated from vehicles to improve traffic control and disaster-related measures.
- Implementing an ultra-micro EV sharing service integrated with public transportation.

Ha:mo Network

Multimodal solution

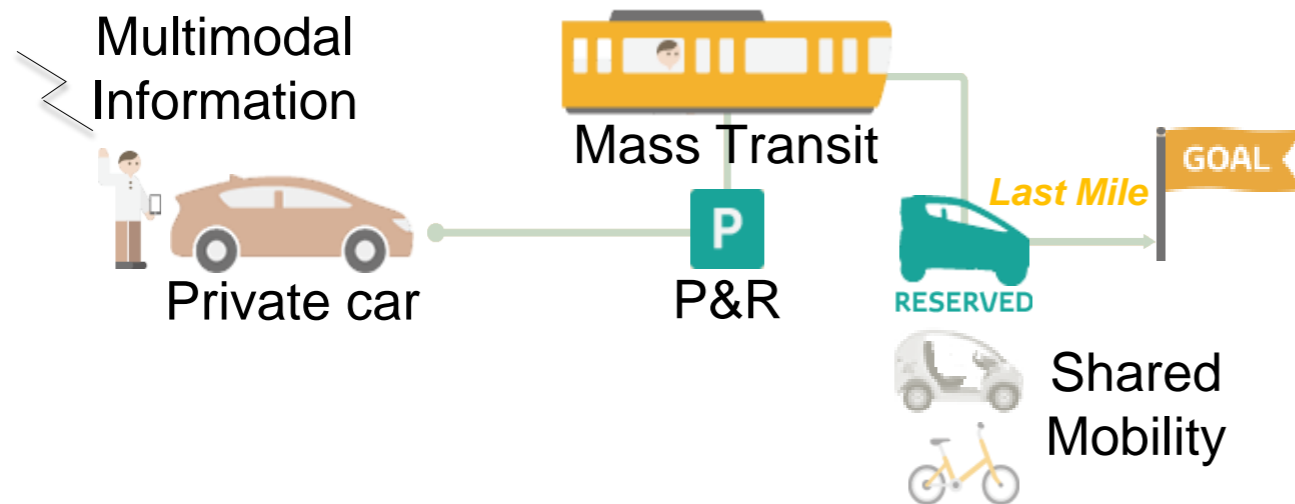


Ha:mo: vision & concepts

TOYOTA presents



Harmonious Mobility Network



COMBINING MODES
a complementary solution
to support modal shift



**Society with Great
Freedom of Movement**

Improve convenience
and accessibility



**Local Communities
Revitalization**

Improve access and
movement in the whole city



**Green
Society**

Reduce CO2 emissions,
less energy consumption waste

A SOLUTION FOR SUSTAINABLE MOBILITY

Ha:mo's main features



RESERVATION
24/7



MULTIMODAL
ROUTE PLANNER



START

GOAL



ONE WAY & STATION BASED
MOBILITY SHARING SERVICE



SPACE & ENERGY SAVING

Ultra-compact electric vehicles



COMS

1 seat / 1 trunk
L: 2.395mm
W: 1.095mm
H: 1.500mm
50km/charge
Lead-acid battery

i-ROAD

2 seats (tandem)
L: 2.345mm
W: 0.870mm
H: 1.455mm
50km/charge
Lithium-ion battery

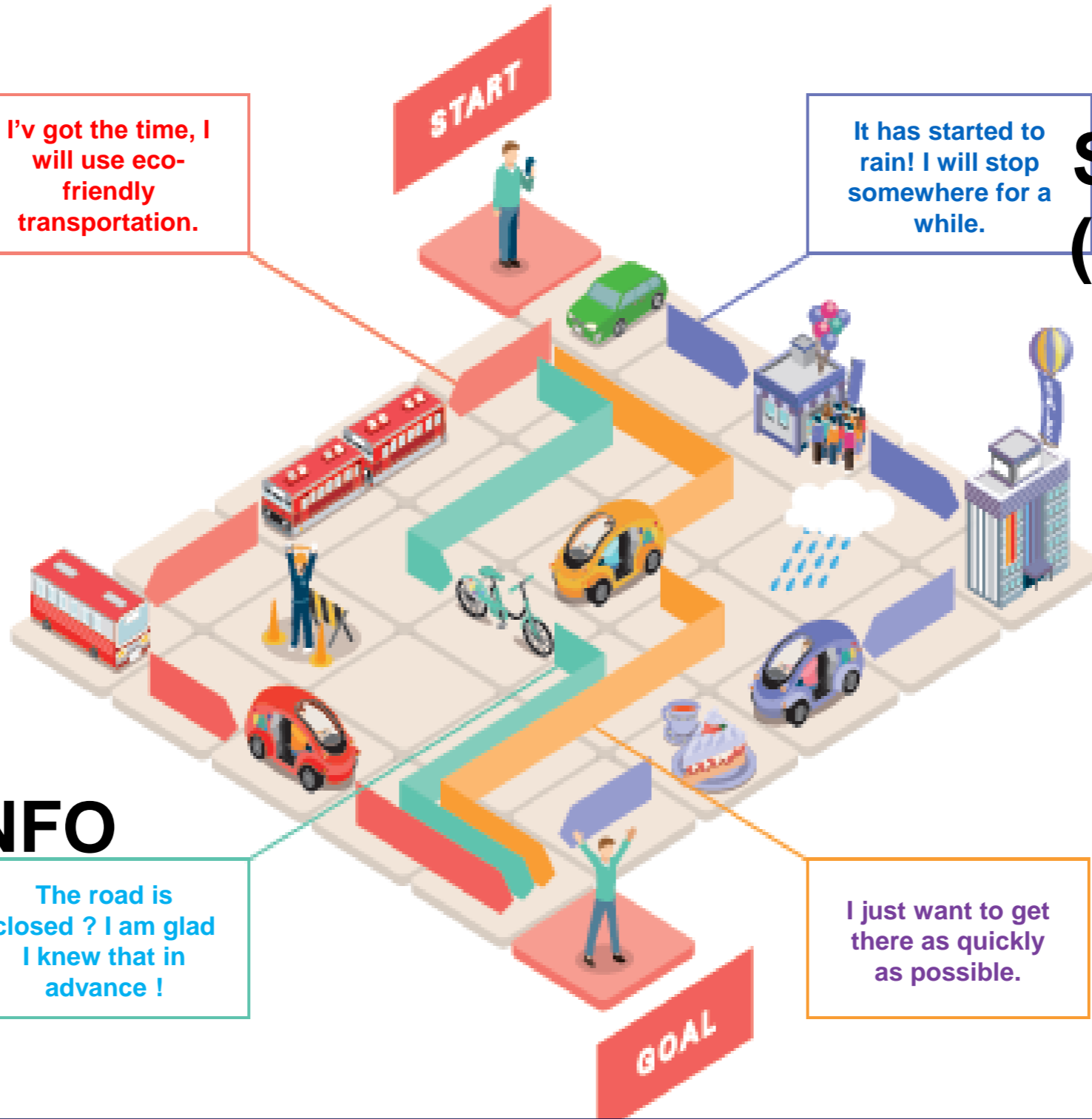
A flexible solution for urban needs

**LAST MILE
(ecological)**

I've got the time, I will use eco-friendly transportation.

**STOP-OVER
(convenient)**

It has started to rain! I will stop somewhere for a while.



**REAL-TIME INFO
(efficient)**

The road is closed? I am glad I knew that in advance!

I just want to get there as quickly as possible.

**DIRECT
TRIP
(quick)**

Verification projects

TOYOTA CITY 

GRENOBLE CITY 

荷物もたっぷり 積めてイイネ!
乗りたい時に すぐ乗れるのがイイネ!
仲良く2人で 乗れてイイネ!

気軽にシェアして乗りこなそう! **Ha:morIDE**

1人乗りのスタンダードな P-COM
2人で乗れる便利な T-COM
新感覚の乗り心地! I-ROAD

詳しくは hamo ラクラク 検索

Ha:morIDEサポートセンター
フリーダイヤル
0800-123-8008

Smart.mobi | TOYOTA | YAMAHA

Cité Lib by H:mor

Envie de garder votre autonomie sans pour autant utiliser votre voiture en ville? Cité Lib by H:mor c'est 70 véhicules urbains 100% électriques, en autopartage. Mis à votre disposition pour tous les trajets intramuros, retrouvez ces nouveaux véhicules dans 27 stations présentes sur l'agglomération grenobloise.

Pour plus d'informations
www.citelib.com
www.facebook.fr/citelib
blog.citelib.com

Devenez autopartageur

INSCRIPTION en ligne sur www.citelib.com ou en Agence Cité Lib
Du lundi au vendredi de 9h30 à 12h30 et de 13h30 à 18h30
38 cours Berriat, Grenoble
09 64 37 89 90 - contact@citelib.com
Et en Agence Métromobilité à partir de la rentrée 2015

FRAIS D'INSCRIPTION
Frais de dossier 15€
Caution de 300€ non encaissée et restituée en cas de résiliation
Clients Cité Lib dispensés de frais de dossier et de caution.

DOCUMENTS NECESSAIRES
Permis de conduire
Justificatif de domicile (daté de moins de 3 mois)
RIB

Nouveaux tarifs : 1€ le quart d'heure

70 véhicules électriques compacts pour vos trajets courts sur l'agglomération grenobloise

National program
Mother project

Local project
First city expansion

TECHNICAL & OPTIONS
EVALUATION

MARKETING & BUSINESS
EVALUATION

Grenoble City

A suitable context



Environment & mobility context

GRENOBLE CITY

161k inhabitants
40% of the jobs

TRAFFIC CONGESTION

40 days /year (3rd city, Fr)

METROPOLITAN AREA

448k inhabitants
sprawling in valleys

POLLUTION ALERTS

40 days /year (PM, NO2)

**REDUCING
MOTORIZATION
IS A NECESSITY**



Air, Energy & Climate Master Plan

Mass transit network
Soft mobility modes
Innovative mobility solutions
Urban logistics

Public & Corporate Mobility Master Plans

A strong policy for modal shift

MASS TRANSIT NETWORK



5 tramway lines
(47 mill. pass./2013)

SOFT MOBILITY MODES



4,000 bicycles (rental)
800 parking deposits

INNOVATIVE MOBILITY SOLUTIONS



Multimodality
badge, services ...

CAR USE -18% & CAR SHARE 53% TO 48% (2002-2010)

The Presqu'île case

SCIENTIFIC & BUSINESS PARK



Population x2 in next 10 years
+ 800.000 m² of construction
Family/students, investments ...

CORPORATE MOBILITY PLAN



Reducing drastically car share
44% to 35% (2016)
... and even 20% (2025)

AN IDEAL CONTEXT TO EXPERIMENT HA:MO

Cité Lib by Ha:mo

The project



Public-private project (2014-17)



A mid-scale electromobility project

35 COMS + 35 i-ROAD



Free of charge onto
on-street parking

Forbidden to drive on express
roads & highways

27 STATIONS (120 SLOTS)



Located in the city centre
as well as in the suburb

Supplied with green energy

A multimodal approach

MÉTROMOBILITÉ
AGENCIES



MULTIMODAL
ROUTE PLANNER



RESERVATION
APPLICATION

MULTIMODAL
OURA BADGE

DEPARTUR
E

CONNECTION TO
MASS TRANSIT NETWORK

CHARGING
STATION

DESTINATION
BILLING

1€ / 15 min.
+1€ / reservation



DISCOUNT 



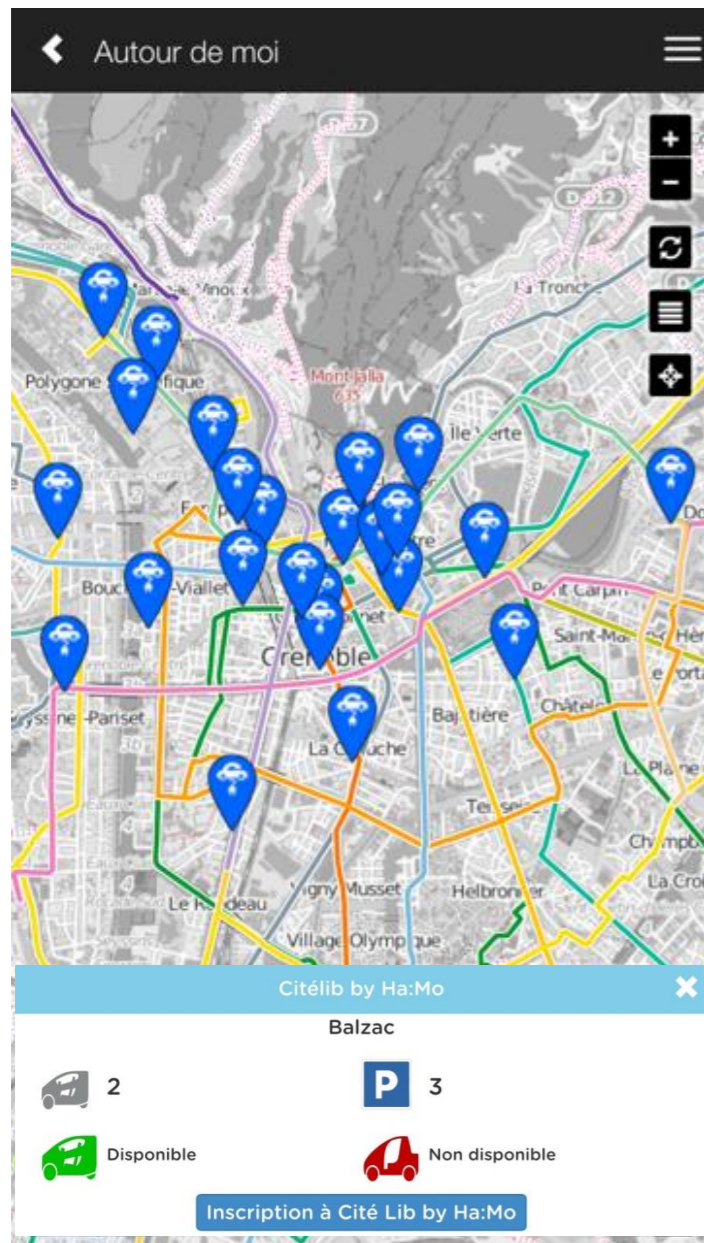


Connected to public transportation

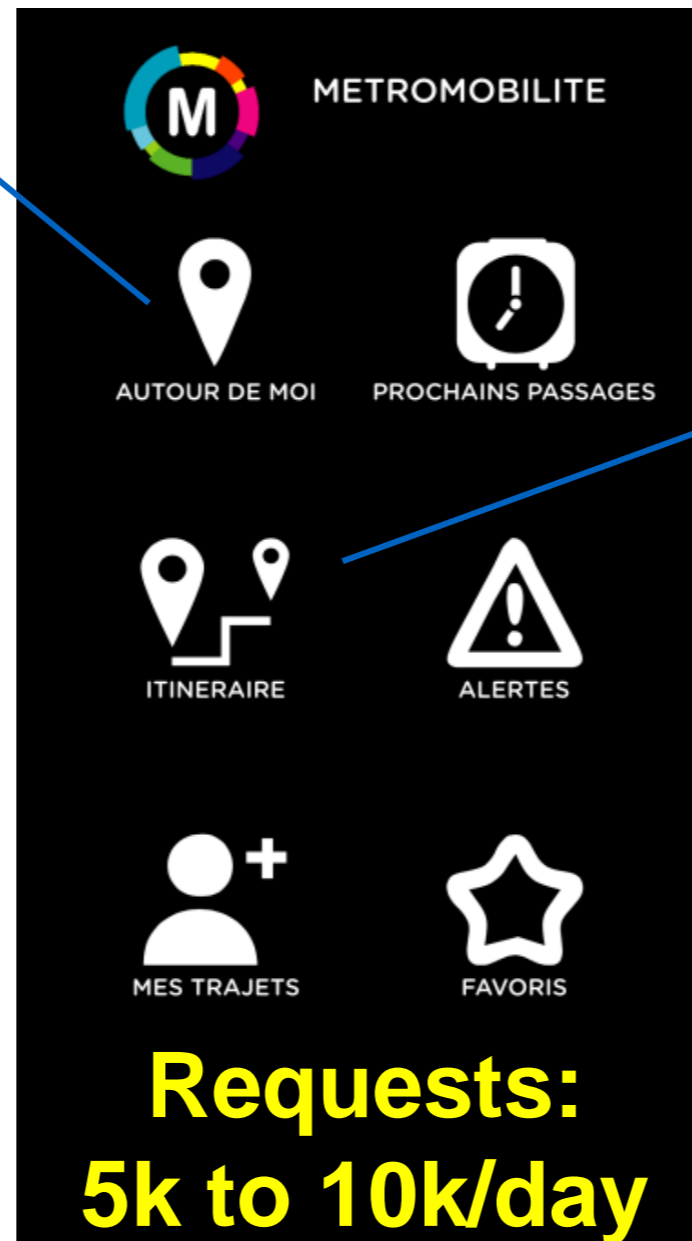


Integrated in Métromobilité

REAL-TIME INFO.

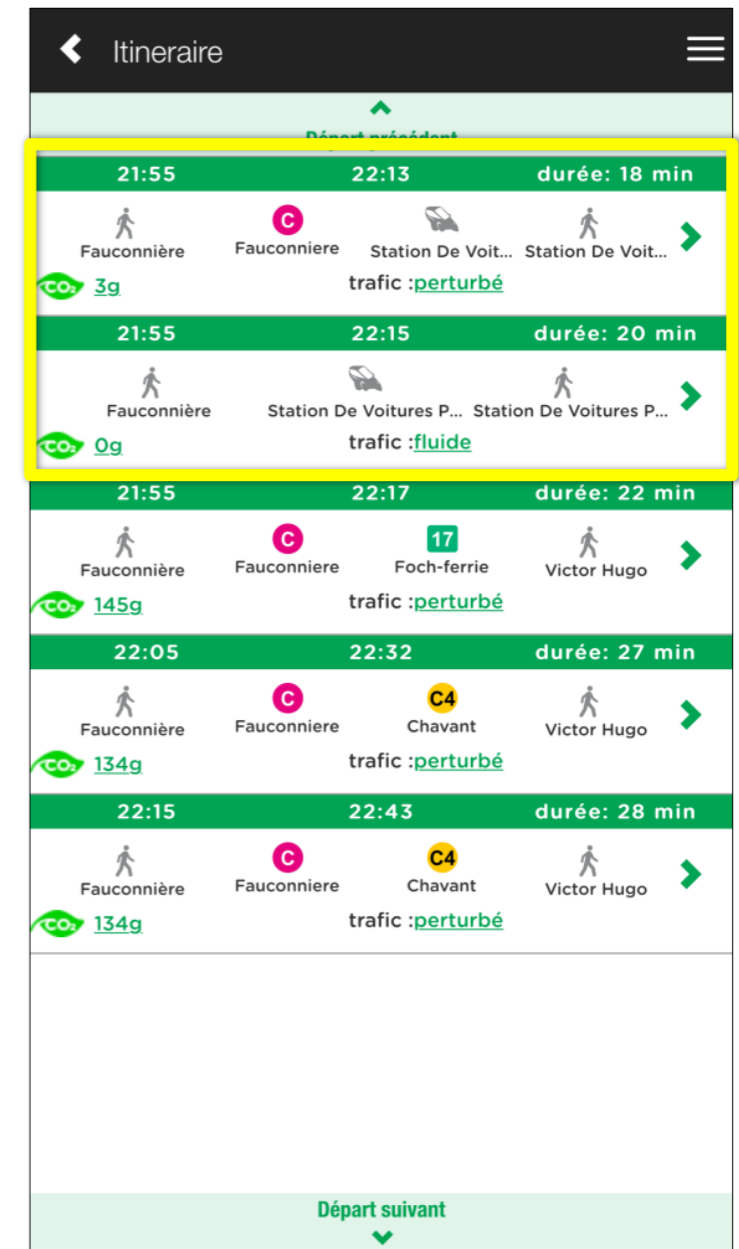


APPLICATION'S MENU



(Google Play & Apple Store)

ROUTE PLANNER



The project in 3 steps

	1 st YEAR	2 nd YEAR	3 rd YEAR
Objective	Adjustment	Expansion	Business
	Systems Organization Pricing	Communication Marketing Loyalty	Business model Operating profit Other cities ?
Members	~500	~1,500	~3,000
	Early adopters	Occasional users	Frequent users
Main KPI	Efficiency	Volume	Financial
	Quality Costs Users' voice	Membership Revenues Operations	Frequency Revenues/user Structure costs

Collaboration with CEA



First results in brief

Members: >600
Active users: 30%

ROUND TRIP 33%

ONE WAY 66%



30%



70%

AVERAGE

Time: 60 min.
Stop-over: 50%

Distance: >6km

21h-6h: 10%

Data: until Sept. 2015

Active users: diversity of needs

	User 1	User 2	User 3	User 4
use/month	14	16	18	26
Age	20s	40s	20s	20s
Status	Student	Employee	Independent	Employee
Private car	No	Yes	/	/
PT*	Yes	No	Yes	Yes
One way	23%	96%	94%	96%
i-ROAD	79%	87%	86%	87%
Reason	Lunch break	Child's activities	Last mile	Inefficient PT
Trips	School/home (Stop-over)	Very diversified + week-end (late)	Suburb/ workplace	Back to home in Grenoble

* Public transportation

Conclusion

The first year, necessary adjustments to build a reliable basis with full system in operation

From now, importance of marketing communications to increase and diversify membership

Confidence in the future as some mobility needs are already identified: niches, new needs ...

www.citelibbyhamo.fr

Cité Lib by Hamo

L'autopartage urbain qui va révolutionner votre quotidien

Services Tarifs Utilisation FAQ Contact

RÉSERVEZ EN LIGNE INSCRIVEZ-VOUS !

CBH - projet de Grenoble

2:37 / 4:47 YouTube

Désormais pour les entreprises

Trois types de forfait en fonction de la taille et des usages de l'entreprise.

Gratuité du stationnement

La gratuité en voirie sur toute l'agglomération. Idéal pour un arrêt temporaire pendant votre réservation !

« J'avais hâte de passer la formation pour commencer les virages en i-ROAD. C'est très agréable à conduire et c'est un contact social très sympa : ça fait même sourire les policiers ! »

Rewarded with a smile
by exceeding your expectations

TOYOTA