Obtaining advantages through digitalization

Case study TMB-Barcelona

Michael Pellot

Sustainable transport of Almaty city.
Transferring experience. Moving forward

Closing event of UNDP-GEF «City of Almaty Sustainable Transport» project
November 16-17, 2017
Almaty, Kazakhstan

TMB Transports Metropolitans de Barcelona

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TMB Introduction

Integrated Mobility Services Provider

Metropolitan Region of Barcelona

Metropolitan Region

Metropolitan Area

TMB's scope: 2,3 million inhabitants

Barcelona

Number of Municipalities:	164
Surface:	3,237 Km^2
Population:	4.3 million inhabitants

Mobility in the First Crown of Barcelona

Mobility modes in a working day (trips)
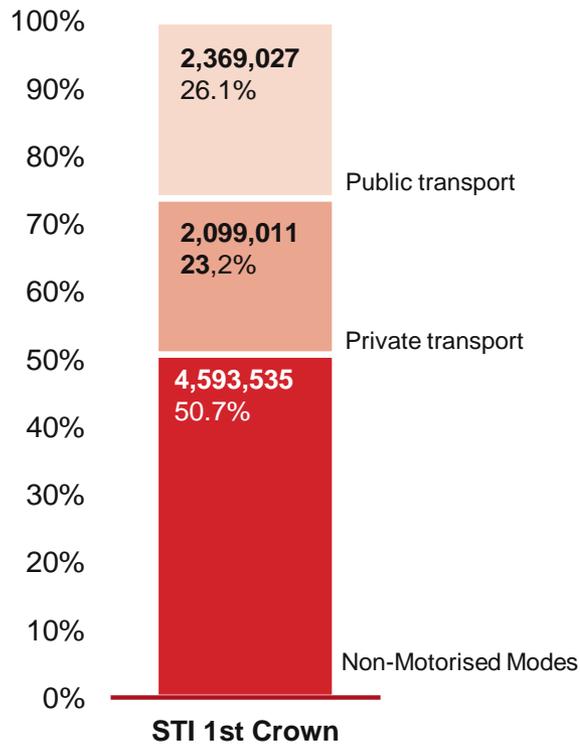
Mobility share in a working day (trips)

100%	**2,369,027** 26.1%	Public transport
70%	**2,099,011** **23**,2%	Private transport
50%	**4,593,535** 50.7%	
0%		Non-Motorised Modes

STI 1st Crown

Zone

20.6% Rest of STI

79.4% First Crown of STI

Mode

37.4% Bus

62.6% Railway

Operator

40.0% Metro TMB — **+382M** journeys

20.5% Bus TMB — **+196M** journeys

16.9% Bus others

11.3% Renfe

8.5% FGC

**2.8%** Tram
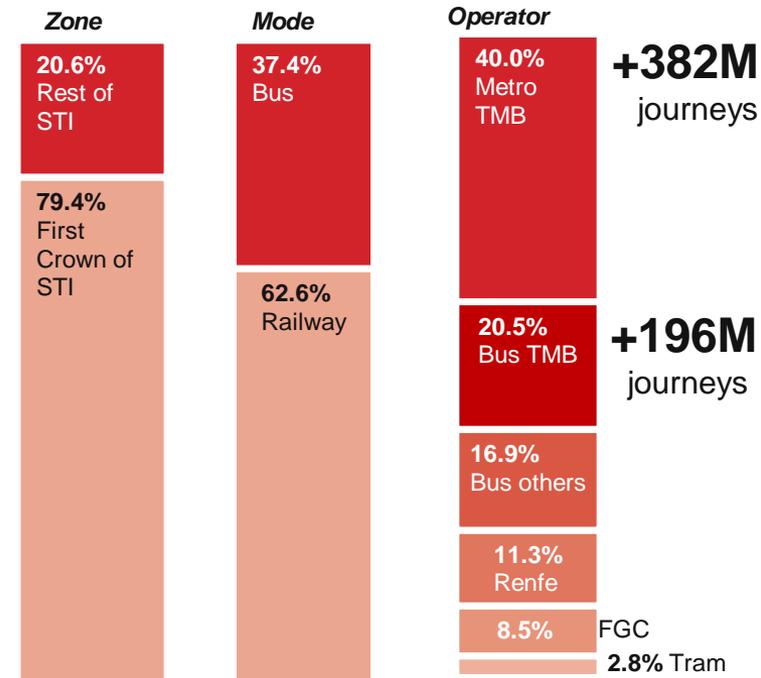
Source: ATM 2016 – EMEF 2014

TMB is...

- ✓ The main public transport operator in **Barcelona** and **Catalonia**, with 2 millions passengers per day, and more than 577 million ticket validations per year

- ✓ The company that manages the **Metro** and **bus** services covering **Barcelona** and eleven townships in its hinterland, on behalf of **Area Metropolitana de Barcelona** (AMB)

- ✓ The company also manages **leisure transport** services as the **Barcelona Bus Turistic, cable car of Montjuïc, Blue tramway** and **funicular railway of Montjuïc**, and the **new business development** unit

Offer of Metro services

Population: 2,3 M inhabitants. Journeys/year: 382 millions

9 lines
(4 UTO)

Length
119,0 km
(30 km UTO)

156 stations

171 trains

3.634
employees

Source: TMB dec. 2016

B
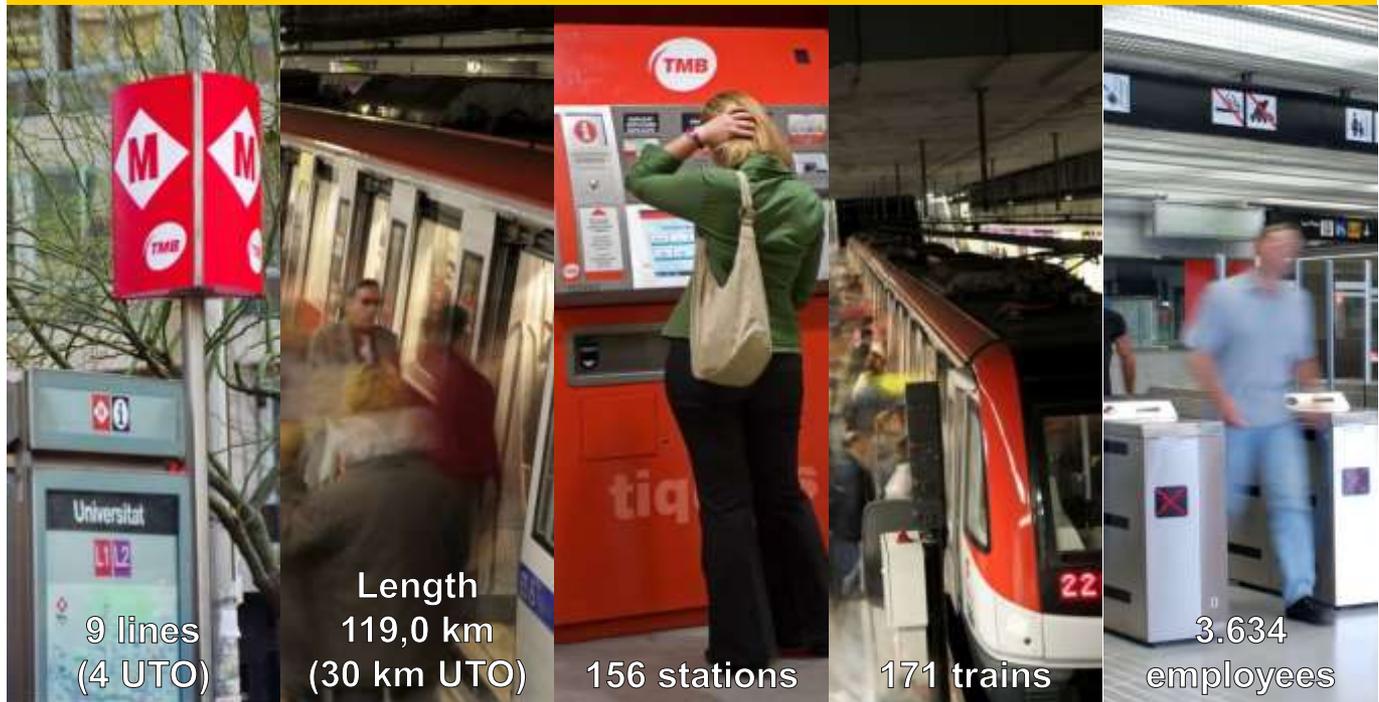
Offer of Bus services

Population: 2,6 M inhabitants. Journeys/year: 196 millions

99 regular lines

Length 857.06 km

2,529 stops

1,060 Buses

4,128 employees

Source: TMB dec. 2016

Leasure Transport Services

Barcelona BusTuristic

Teleferic de Montjuïc

Tramvia Blau

Funicular de Montjuïc

CATALUNYA BUS TURÍSTIC

TMB Strategic Plan

2015-2020

Challenges

> Which will be the new **strategic position** in the value chain?

> Is **efficiency** right placed towards a **liberalization scenario**?

> Key role of motivation: **Employee Experience!**

> For a **90 years** old Metro: is there a **clear financial** scenario?

Deployment of the Strategic Plan

CUSTOMER CENTRIC

Focus in customer knowledge to design convenient services that increase our market share

PRODUCT

Effective network matching supply to demand with highest service quality

EFFICIENCY

Deploy organizational models driven by efficiency & accountability in a lean atmosphere

MOTIVATION

Develop talent in a new scenario of communication and transparency

Digitalization

How do we understand digitalization?

How do we understand digitalization?

1 Change in our customers behavior & expectations

2 Add transparency to funding needs

3 Change the skills and talent required

4 Provides opportunities in terms of efficiency

5 Change our product dramatically (automation application)

Current projects

From paper to reality – Some examples

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Example: Digital Train - Streaming real time ridership (car loading)
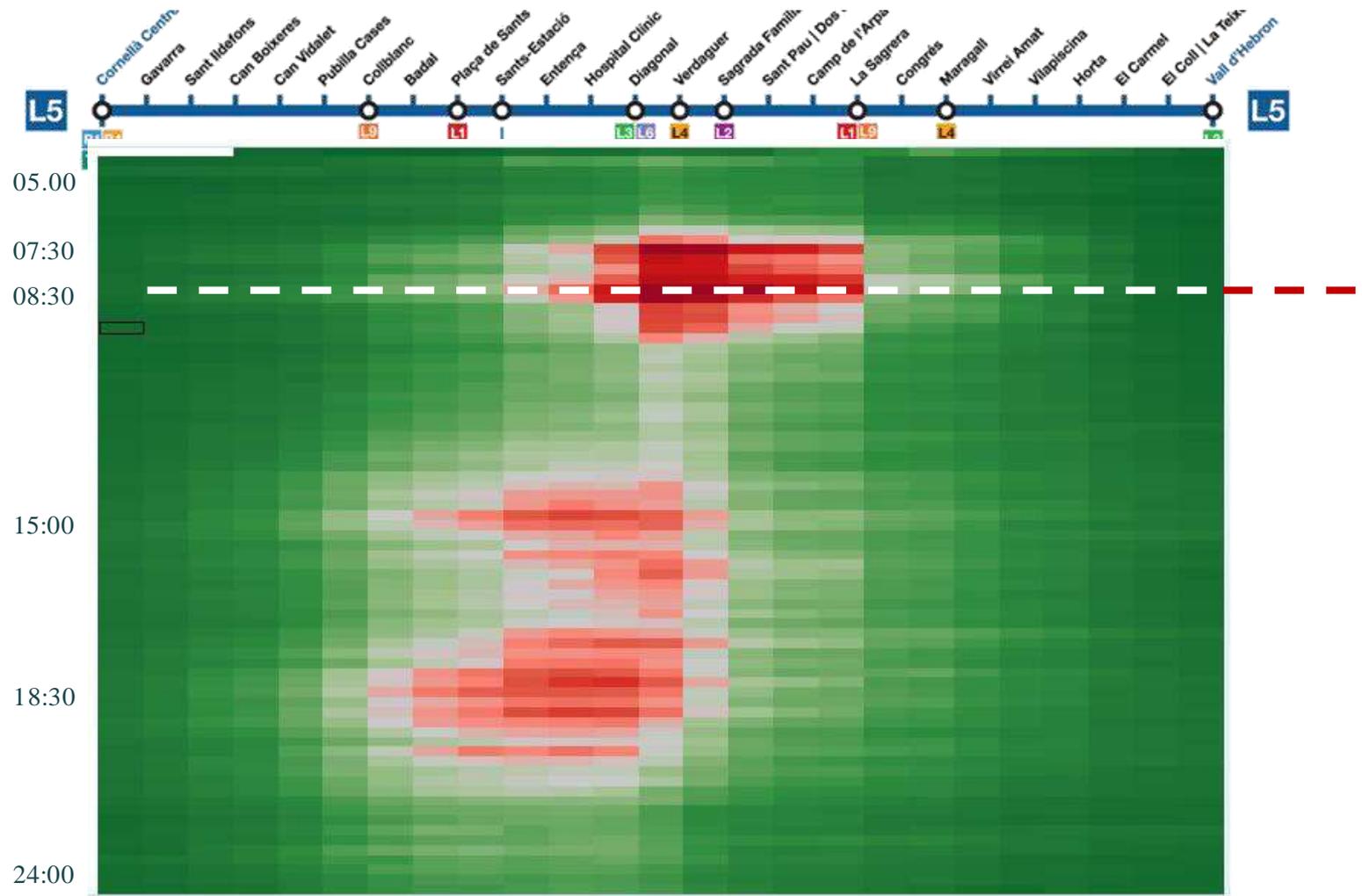
Example: Digital Train - Streaming real time ridership (car loading)

Morning peak hour (pax/m^2)

4.5 pax/m^2

32 out of 33 trains at peak hour

Matching supply to demand

Cornellà Centre, Gavarra, Sant Ildefons, Can Boixeres, Can Vidalet, Pubilla Cases, Collblanc, Badal, Plaça de Sants, Sants-Estació, Entença, Hospital Clínic, Diagonal, Verdaguer, Sagrada Família, Sant Pau | Dos de Maig, Camp de l'Arpa, La Sagrera, Congrés, Maragall, Virrei Amat, Vilapiscina, Horta, El Carmel, El Coll | La Teixonera, Vall d'Hebron

Example: Digital Bus - Streaming real time ridership (vehicle loading)

System with **three** different **inputs** of number of passengers:

– **Tickets validations**: Number of people that use the vehicle. The point of embark is registered by validation, but the point of disembark is not detected.

– **Passengers counting systems**: Based on infrared counters or aerial cameras, register points of embark & disembark but doesn't follow specifically an individual.

– **Wi-Fi counting systems**: Counts the Wi-Fi-based devices. Permits to know where the passenger get on and get off but not everybody has Wi-Fi devices

✅ The combination of counting systems, gives the opportunity to get accurate information of the vehicle loading and the mobility behavior of the customers.

Example: Employee Engagement - Cultural shift

TMB identifies the cultural shift as a key success factor for the digital transformation

✅ Leverage the lessons learnt of the thorough cultural change deployed for our automated lines

Conclusions

Reading the tea leaves

Conclusions

- ✅ Digitalization brings in **an opportunity** in terms of competitive advantage in a disrupting scenario for public transport

- ✅ Being the backbone of the mobility **we must take the leadership**

- ✅ Changes that we are going to suffer will be at **top strategic level**

- ✅ Having been public transport companies **now we must move as lean as a start-up** (trial-error)

- ✅ The main focus must be the **revolution in the skills and attitudes** of our teams (i.e. automation)

Thank you

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