Supply chains, logistics, and the economics of mobility

Thematic workshop
Welcome to the thematic workshop on supply chains, logistics, and the economics of mobility

**Brian Cooperman**
Analytics Expert
McKinsey & Company
Waltham, USA

**Stephanie Haag**
Associate Partner
McKinsey & Company
Munich, Germany

**Dmitry Chechulin**
Associate Partner
McKinsey & Company
Moscow, Russia

**Dominic Papa**
Vice President, Smart State initiatives
Arizona Commerce Authority

**Margarida Campolargo**
Head of Smart Cities Unit
City of Porto
### Thematic workshop – Supply chains, logistics, and the economics of mobility | Friday, December 3rd | Suggested agenda

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Agenda item</th>
<th>Format</th>
<th>Lead</th>
<th>Suggested activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>14:00 – 14:05</td>
<td>Welcome, direction setting &amp; reflections on city progress</td>
<td>Presentation</td>
<td>Ethan Stratford, McKinsey, Thematic Network Coordinator</td>
<td>• Introduction to day’s objectives</td>
</tr>
<tr>
<td>14:05 – 14:45</td>
<td>Challenge deep dive: Implementation tips on data-driven interventions</td>
<td>Provocation</td>
<td>Brian Cooperman, McKinsey</td>
<td>• TNC kicks off with big picture input on the theme &amp; sub-theme (~10 mins)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mentor presentation</td>
<td>Margarida Campolargo, City of Porto</td>
<td>• Mentor cities speak on their experiences and learnings relevant to the sub-theme (~10 mins)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q&amp;A</td>
<td>Stephanie Haag</td>
<td>• Q&amp;A chaired by host (~20 mins)</td>
</tr>
<tr>
<td>14:45 – 15:25</td>
<td>Challenge deep dive: Lessons from supply chain and mobility transitions</td>
<td>Provocation</td>
<td>Dmitry Chechulin, McKinsey</td>
<td>• TNC kicks off with big picture input on the theme &amp; sub-theme (~10 mins)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mentor presentation</td>
<td>Dominic Papa, City of Phoenix</td>
<td>• Mentor cities speak on their experiences and learnings relevant to the sub-theme (~10 mins)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q&amp;A</td>
<td>Stephanie Haag</td>
<td>• Q&amp;A chaired by host (~20 mins)</td>
</tr>
<tr>
<td>15:25 - 15:30</td>
<td>Closing remarks</td>
<td>Presentation</td>
<td>Stephanie Haag, McKinsey, Thematic Network Coordinator</td>
<td>• Next steps</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Feedback collection</td>
</tr>
</tbody>
</table>
Our thematic group

Supply chains, Logistics and the Economics of Mobility

**Mentor cities**
Amsterdam, Medellin, Antwerp, Hamburg, Singapore, Phoenix, Porto

**Core Cities**
Alcobendas, Chalkida, Corfu, Gdańsk, Haskovo, Kavala, L'Aquila, Logroño, Métropole Rouen Normandie, Metropolitan City of Rome Capital, Padua, Pamplona, Skellefteå, Tripoli (Consortium), Vari-Voula-Vouliagmeni,
Objectives of this session

- Get inspired and motivated about the opportunities for impact
- Learn from mentor cities experiences with a focus on implementation
- Share and reflect on challenges in moving from strategy to implementation

Where we are at in the ICC

**Preparation & assessment**
- 1st City Lab
- Mayor summit #1
- Needs assessment workshop
- Stakeholder workshop
- Maturity assessment and strategy workshop
- Local launch

**Ambition & roadmap**
- 2nd City Lab
- Roadmap and monitoring workshop

**Implementation**
- 3rd City Lab
- 4th City Lab
- 5th City Lab

**Review & way forward**
- Mayors summit #2
- ICC Closing
- Local clothing
Implementation challenges across logistics and mobility initiatives hinge around data and integration

1. Supply chain
   - Integration of logistics partners
   - Collecting quality data e.g., to implement logistics poles
   - Understanding how best to use data

2. Mobility
   - Digital integration of new and old public transport and mobility infrastructure
   - Physical integration of new and old public transport and mobility infrastructure
   - Lack of investment into existing infrastructure
Challenge deep dive: Implementation tips on data-driven interventions

Brian Cooperman
Analytics Expert, McKinsey & Company
Challenge deep dive: Building a mobility platform

Margarida Campolargo
Head of Smart Cities Unit,
City of Porto
EXPLORE PORTO
Explore.Porte is a new service created by the municipality to encourage citizens and visitors to know and explore the city. It aims at providing information on points of interest and mobility solutions through a web application and signalling devices - points - spread throughout the city. A citizen, or visitor, equipped with a smartphone can instantly get information on the place where he/she is standing and its surroundings, as well as the best route to get anywhere.
GOALS

Provide useful and reliable information on mobility and points of interest in the city of Porto

Moving from planned information (GTFS) to real-time information (GTFSRT)

Contribute to the creation of an open system for exploring the city and making data available in a collaborative way between ecosystem entities

Contribute to SDG 11: Sustainable Cities and Communities
TARGET GROUP

The target audience of the project are citizens and visitors who have a smartphone. There are 3 main types of Explore.Porto users:

- **Citizens** who want to have information about the places and/or the best routes to get to a certain place.
- **Visitors** who, like citizens, may want information about places or routes, from the perspective of exploring the city from a tourist point of view.
- **Partners** who enter information about places and public transport on the platform.
DRIVERS FOR USERS

Convenience

Safety

Real Time Information
ADDED VALUE FOR PARTNERS

- VISIBILITY
- ADAPTABILITY
- QUALITY
- SCALABILITY
- CENTRALIZATION OF INFORMATION
- OPEN PLATFORM
This solution is based on the open source product Digitransit (https://digitransit.fi/en/). The search engine is based on PELIAS which is also a product based on open data. The databases used are those of Open Street Maps and that of the Porto City Council.

Explore Porto uses, in support of the developed app, a network of around 1000 beacons spread throughout the city (at bus stops and at strategic tourist points), with QR Codes and / or NFC tags that allow access to more information about the place.
FEATURES

- Itinerary suggestions: plan a route, get real-time information on public transport
- Alerts on temporary changes to the normal functioning of public transport routes
- Identification of points of interest near the current location
- Selection of favorites: save routes or points of interest that we want to have at our disposal
- Exploration of points of interest in the city: with access to the description, history, address and opening hours and updated relevant information
- Possibility of categorizing points of interest by those who introduce them to the platform
From point A to point B.

Now you can explore the city in a unique way, plan your route, have full access to real-time information on public transportation, and get detailed information about the main points of interest. You can also check alerts about temporary changes to normal operations.
The high point of your days.

From home to the office, stopping for lunch with friends or walking through one of our beautiful gardens to take that photo for your Instagram. Your favorite points at your fingertips.
The strong points in the city.

Torre dos Clérigos, Museu de Serralves or the place with the best francesinha in town. Discover the history and the timetables to all Porto's points of interest: from the most well-known to the best hidden and secret places.
You're at the point of exploring the city.
Description
Building designed by the Dutch architect Rem Koolhaas, Casa da Música was inaugurated in 2005 and since then has become an icon of contemporary architecture, attracting visitors from many different parts of the world. The programming, which is both varied and innovative, ranges from classical music to the avant-garde and beyond. Benefiting greatly from their state-of-the-art facility, Symphony Orquestra do Norte, Ensemble Baroque Douralvo, and Casa. The institution also plays an important role in education, providing concerts, workshops, and master classes for families with children and schools. Daily, there are guided tours of the building, which has several levels and a restaurant located on the rooftop, with a panoramic view over the city. On performance days, the box office is open until 30 minutes after the start of the show.

Schedule
Monday-Friday
10:00 am-00:00 pm

Contact
Address
605639 Avenida da Boavista Porto Porto 4150-071 Portugal
POINTS
How does it work?

These blue devices are installed at reference points of interest and at bus stops.
A user can interact with the Point through 2 technologies: NFC and QR code.
Using a smartphone and through a QR code scan or reading the NFC tag, the Point will transmit a link to the smartphone that connects to Explore Porto at the Point’s location.
One point, all the city.

Find the points spread all over town, scan the QR Code with your smartphone, and discover all the information about the city in just one place.
POINTS
How does it work?

1. Procure os mais de 1000 pontos espalhados pelas paragens de autocarros, estações e pontos de interesse. Look for the more than 1000 beacon points spread around bus stops, stations and landmarks.

2. Aproxime o seu dispositivo móvel do ponto ou leia o QR Code com a câmara do seu smartphone. Pode também aceder diretamente explore.porto.pt Hold your mobile device over the beacon or scan the QR Code with your smartphone’s camera. You can also visit explore.porto.pt

3. Programe o seu trajeto e descubra toda a informação da sua cidade em tempo real. Schedule your route and discover all the information about your city in real time.
POINTS
Features: mobility
POINYS
Features: point of interest
POINTS
Design

- In line with the city’s graphical identity
- Participatory approach
- Clean Design
- Integrated
POINTS
Impact study and choice of colors and features

A participatory approach was undertaken to define both colors and features of this app.
291 people were involved in this process through street interviews and online questionnaires.
As a result, the color blue was selected with the arguments of attraction, pride and tranquility. As for the features a first list of expectations and needs was elaborated and incorporated into the app.
POINTS
Impact study and choice of colors and features - Street interviews
PRELIMINARY RESULTS

57,000.00

30%

ABOUT 1,000 BEACONS AND NFC IN THE CITY

USERS

RETURN RATE
Thank you!

www.portodigital.pt
Challenge deep dive: Lessons from supply chain and mobility transitions

Dmitry Chechulin
Associate Partner, McKinsey & Company
McKinsey conducts benchmarking of urban transport systems to identify key success factors for cities

Urban transport systems of 25 global cities

Elements of success

25 cities
Bangkok
Beijing
Berlin
Buenos Aires
Chicago
Hong Kong
Istanbul
Johannesburg
London
Los Angeles
Madrid
Mexico City
Milan
Moscow
New York
Paris
Sao Paulo
Seoul
Shanghai
Shenzhen
Singapore
St. Petersburg
Sydney
Tokyo
Toronto

Broad range of insights

Long list of objective metrics
- 50+ metrics, incl. 10+ geospatial analytics

Survey of 10,000 city residents
- Satisfaction with current state of transport aspects and changes over time
- Awareness of transport projects
- Impact of the COVID on behavior

Projects implemented
- Development of transportation systems
- Response to COVID-19

Framework

1. Availability
   - Rail
   - Road
   - Shared
   - External

2. Affordability
   - Public
   - Private

3. Efficiency
   - Public
   - Private

4. Convenience
   - Services
   - Ticketing
   - Comfort
   - Intermodality

5. Safety and Sustainability
   - Physical
   - Environmental

Source: McKinsey Analysis
One of the findings – leading cities implement significantly higher number of transportation improvement projects than the rest

Most frequent project types

- **Public transport infrastructure**
  - Metro expansion
  - New dedicated bus lanes

- **Road infrastructure**
  - Improvement of connectivity (tunnels, bridges, overpasses)
  - Road network expansion

- **Digitization**
  - MaaS
  - Information on public transport load factor
  - Ticketing system improvement

Source: McKinsey Analysis
Examples of services launched during Moscow transport transformation (1/2)

- Paid parking
- Ticketing solutions
- Microtransit bus service
- Bus contracting model
- Bicycle sharing system
- Traffic control center
- Personalized comms system
- Wayfinding system

Source: McKinsey Analysis
### Examples of services launched during Moscow transport transformation (2/2)

<table>
<thead>
<tr>
<th>Service</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slow/cargo rail to “new metro”</td>
<td></td>
</tr>
<tr>
<td>Bus fleet electrification</td>
<td></td>
</tr>
<tr>
<td>Advanced analytics to improve CX (FIFA)</td>
<td></td>
</tr>
<tr>
<td>MaaS application</td>
<td></td>
</tr>
<tr>
<td>FacePay</td>
<td></td>
</tr>
<tr>
<td>Autonomous taxi pilot</td>
<td></td>
</tr>
<tr>
<td>River cruises &amp; ferries</td>
<td></td>
</tr>
<tr>
<td>Terminals revamp</td>
<td></td>
</tr>
</tbody>
</table>

**Source:** McKinsey Analysis
## Lessons learned – risk factors to consider in project implementation

<table>
<thead>
<tr>
<th>Risk area</th>
<th>Potential impact</th>
<th>Approach to mitigate</th>
</tr>
</thead>
</table>
| Implementation | • Timing of implementation  
• Customer experience                       | • Establish PMO  
• Ensure external alignment                                                   |
| Legal        | • Timing of implementation (change laws)  
• Need to adjust the project concept                                           | • Proactive planning of legal changes  
• Involvement of stakeholders at early stages of concept and implementation plan development |
| Technology   | • Timing of implementation (procurement and development & testing)  
• Customer experience (bugs)  
• Need to adjust the project concept                                           | • Preventive planning of long-lead items  
• Involvement of stakeholders at early stages of strategy/ concept development  
• Conduct extensive QA during development and open testing period before launch |
| Personnel    | • Timing of implementation (recruitment)  
• Customer experience (quality of training)                                      | • Plan recruitment early on if needed to implement (e.g., drivers)  
• Design and implement specialized training programs  
• Potentially involve specialized service providers (e.g., training, mysterious shoppers)  
• Include clear metrics of CX in KPIs                                         |
| Public       | • Low support / protests  
• Insufficient credit for positive changes                                      | • Proactive planning of PR & communication activities  
• Involve citizens in initiative creation and planning (and communicate that involvement later)  
• Develop and publicize clear compelling explanation materials to educate the audience |

Source: McKinsey Analysis
Challenge deep dive: Lessons from supply chain and mobility transitions

Dominic Papa
Vice President, Smart States Initiative
City of Phoenix
Closing remarks

Stephanie Haag
Associate Partner
McKinsey & Company
Thank you!