

## MTR CORPORATION (HONG KONG)

Automatic dialogue platform on MTR Mobile App to respond to customers enquiries about directions to points of interest around MTR exits.

## TRANSPORT FOR LONDON (UNITED KINGDOM)

Automatic dialogue platform on Facebook Messenger to respond to customer enquiries about bus arrivals, bus route statuses, service updates, provide maps and switching to messaging a customer service agent.

## JR-EAST (JAPAN)

Multi-lingual humanoid robot able to provide answers about public transport systems, nearby facilities, and sightseeing activities.

Workflow support system to provide relevant information to call centre agents in processing customer queries in real time.

## INTERVIEW

IVADO aims to bring together industry professionals and academic researchers to develop cutting-edge expertise in data science, operational research and artificial intelligence. IVADO's objective is to be the link between academic expertise and the business needs of organisations, from international corporations to start-ups. The institute therefore supports the development of processes to extract trends, metrics and concrete information from the jumble of big data. We invited Gilles Savard (General Director) and Jean-Marc Rousseau (Director of Technologic Transfer) to share their vision of the evolution of the exploitation of data in public transport, and more generally for urban transport.



**GILLES SAVARD**  
General Director at IVADO



**JEAN-MARC ROUSSEAU**  
Director of Technologic Transfer  
at IVADO

### What would be the main challenges for public transport stakeholders regarding data exploitation and integration ?

*Gilles Savard:* Data is at the heart of the transformation we are living today. Their abundance and exponential growth fuel the new digital intelligence which is transforming sectors such as finance, health, transport and logistics, as well as manufacturing or politics even. These transformation results from several technologies, internet of things, cloud, 5G soon.

Still, the integration between data generators and value creation requires analytical and digital intelligence and algorithmic science.

Concerning transportation, the concept of intelligent transport has been around for a long time, and yet this may be the sector where the impact of the algorithm has been the least important so far. There might be a certain degree of penetration of algorithm at the local level, but we are far from taking advantage of their full potential if we consider the full mobility system.

With the increase of the availability of data, we rediscover the potential of algorithms. What is interesting, is that we knew their potential, while not fully exploiting it. We therefore today have the advantage of having them already developed to make the most out of the big data.

*Jean-Marc Rousseau:* As founder of the GIRO company, I have contributed to the development of the optimisation of the systems. The next challenge is the integration of the systems for its optimization, beyond the modal silos. The challenge should be to make travelling easier for the citizens, through the emergence of optimised regional mobility solutions.

*Gilles Savard:* Indeed, the integration is the first challenge, and more than the technology, the challenge is of course mainly a matter of governance and organisations. Public transport companies and authorities should cooperate for greater transport data fusion to accelerate their development and their adaptation to the changing mobility landscape.

### How can public transport stakeholders make the most out of data?

*J-M.R:* One of the main challenges remains the ability to understand and forecast demand for transport services, in particular for on demand services. For this matter we need to understand better how people move around in the city, and we still have much to do in this respect. Hopefully our sector will be able to cooperate better than it does today with mobile phone companies for this purpose.

*G.S:* The technological challenge is indeed the understanding of the customer behaviour, which is at the heart of the intelligent transport system. How can we better understand unconstrained traveller, which means answering the question: how would the traveller change their behaviour if the mobility supply was changed? Technology goes more and more in helping us to understand human behaviour. For instance, are working with SNCF to try to address this challenge, with automatic learning processes, for instance to understand the behaviour of the passenger which consults information on a trip but do not confirm the booking. Research in neurons network can also help for instance. A key element is also the quality of data at hand to carry research in this area.

### How can data help building more and more personalised mobility services?

*J-M.R:* The goal is to move towards predictive analytics. It is very difficult to replicate models

from one city to another. It is always necessary to adapt to the local situation, and therefore you need an origin / destination matrix for a given city to propose an efficient service. And this implies the need to understand the final destination and not only the exit point of the network.

*G.S:* A good understanding of travels, also by segments of the population, allows for more intelligent mobility solutions according to time, type of travel, etc. Then this can be processed to provide optimal multimodal travel solutions. The challenge for this is more on the side of the availability of data of good quality than a matter of availability of the right algorithms, which can be developed, especially if you use learning algorithms.

A more complex challenge is the adaptation of the supply of services according to the demand at a specific time according to the traffic situation with short

term predictive analysis. The path forward is more the progressive improvement than a redesign of services. This could indeed be more interesting to adjust to special events/incidents, etc.

### Regarding the value of data, how can companies make profit of their assets and how does it contribute to customer service excellence?

*J-M.R:* The main value is for the society if the processing of data brings a better mobility system. To answer the question of whether you can create value through sharing data, you should look into game theory. The challenge is that if indeed society as a whole can benefit from data sharing, this does not mean that all actors involved in this will benefit from it. It is up to the public authorities to regulate to address this challenge.

It should be possible to create value by making the most out of data for instance for stations

management, and along the whole mobility chain.

Some apps manage to monetize data through the provision of travel planning functions. By getting to know better and better the users, they can continuously address them better with targeted messages.

But overall we do not believe that there is a significant potential for the monetization of data by a public transport operator.

*G.S:* Beyond transportation, when it comes to understanding the behaviours of people and monetising this, the GAFAs are ten years ahead and are probably capturing over 90% of the value which can be monetized. The value for the rest is mainly the value for the whole society.

One should also consider that the potential for the additional creation of value by using data, through advertisement for instance, is not limitless.

