

THE CHALLENGES OF NEW MOBILITIES

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As sociologists specializing in mobility we approach issues related to transport, city and digital technology. The limits between these fields also become blurred for traditional actors of transport who increasingly become operators of mobility. Mobility's bigger scope requires innovations that these actors have to look for. This parallax is a prospective reading of present times. The question we need to address is : what are the ongoing transformations we cannot see because they are hidden behind other concerns? Today, we propose to share with you a shift of emphasis. In this perspective, mobilities, transports and travels are not mixed up anymore but still overall, mobilities are quite confused. Things are equipped, settled and implemented according to specialists' forecasts and yet, as well as during the "phoney war", the war of mobilities does not happen where it is expected to be. Current demands cannot be answered to by former trends. Society imposes on people a further increase of mobility but this is not what people ask for. The emphasis must be put on upgrading mobilities' qualities.

We will first propose a diagnostic of the current situation and then we'll see that the solutions under which this change is likely to happen already exist.

Transport offer is dense and composite

There has never been such a great focus on transport before. There have never been so many innovations around mobility: new modes and concepts often add up to the already rich and existing offer while multimodality is put forward to an extent it has never been before. While the rate of car use is slightly decreasing, the divide between car and other modes of transport tends to become blurred. After half a century, urban policies try to catch up and rehabilitate walking and cycling within cities. Car is increasingly being considered as a service with new models being explored such as car pooling and car sharing. Mobilities are considered according to different scales: the local one as well as the regional, national or even international ones under the idea of "multimodal platform". Last but not least, environmental threats due to transport's gaz emissions are taken into consideration.

The limits of the mobilities' system

At first sight, things would seem fine if these evolutions were to provide answers to society's stakes. Yet, has anyone considered the impact of these trips on people's daily lives and on their territories? Adding up infrastructures just shows a general increase of travels but at the same time it demonstrates the inability of the system to absorb congestions. Now, even public transports face such a challenge. This is the reason why the British operator, TfL, Transport for London launched a program called Legible London, which calls for a modal shift from taking the tube to walking on short distances. In France, the city of Paris as well as the State are fighting to prevent a too rapid pace of increase in the métro, the RER and the regional trains' frequentation. And yet, as for the métro, the use of the line 13 already reached a rate of 116%!

In the street, new walkers and bike riders add up to tramways, cars, buses and delivery trucks so that the public realm becomes more and more complex to go through and to manage. Plus, with the proliferations of transport modes, users do not always have a clear understanding of what the offer is. Overall, people don't feel comfortable with travels as they are nowadays and look for something different that we have been measuring in our studies. To put it in a nutshell: the question is not really to know how to travel but to know how to organize myself to move less and in a different (better) way. It is clear here that people ask for tools that would allow them to monitor their daily trips.

Public authorities partly absorb this growth when they build new infrastructures. However, in doing so they treat the superficial wound but they do not cure the problem in depth because it has not been well diagnosed. Many people view travels as too long, too numerous, too hard, too complicated and sometimes not efficient. In the Ile-de-France agglomeration, within 10 years, travel distances have faced a 60% increase while the population has risen of 12%. In France again, the commuting distance between residential location and workplace location has been multiplied by 10 within a 40-year timespan for people who don't work in their municipality of residence.

So far, we've just been looking at the commuter. What about the territory? If we stay in France, then 60 thousands hectares of green land are each year eaten away by urban developments. This is in average the surface of a département (the equivalent of Counties in France, and we only have 90 of them...). This centrifugal movement just swallows up money. Maintenance and running cost of infrastructures are often the first budget item of public authorities. These new infrastructures however also drive the growth of mobilities.

When growth is at stake

Nowadays, we challenge the growth of mobilities in the same way as we question the growth of raw materials' or oilfield consumption.

The society has to deal with urban sprawl, fragmented daily activities, and with the increase of negative transport externalities in social, economic and ecological terms. The city itself urges for changes. Parking is at stake when millions of cars take up a great part of the public realm while urban dwellers call for a livable city with livable streets. People require more urbanity.

In the Randstadt region in the Netherlands there are more and more companies coming to teleworking to deal with the productivity's losses due to some of the worst traffic congestions in Europe. In Paris' area, while 35 thousand cars are stuck in traffic every day either at the entrance of the capital or on the regional radial roads, solutions are just thought in terms of infrastructures. The whole city is paralyzed by an auto-immobile and congestion just adds up to the millions of hectares of parked vehicles (cf. Predit). We are probably reaching the limits both of the elasticity of demand and the elasticity of infrastructures' supply.

If new infrastructures need to be built it is however always a very expensive and long term project. Our reflexion will be based on this broad diagnostic framework which is applicable to most countries. What is at stake now is to define a smoother mobility. A change of focus is required to maintain people's right to move while giving a priority to "intelligent", responsible, sustainable and global mobilities. This system of mobility has to be thought of in such a way that it can respect the urban dweller, the city and the planet at the same time. It also has to fit with public budget shorten by the economic crisis. Overall, this new mobility has to be both less constraining for urban dwellers and more responsible for the society as a whole.

MOBILITIES ' INTELLIGENCES

Let us consider some new avenues, which are worth exploring.

The empowerment

The economic crisis provides an opportunity to envision new standards. In the meantime, internet offers an opportunity to think about users' empowerment. Net surfers of the Web 2.0 showed us a possible paradigm shift. What we have been observing so far is that Web 2.0 users have managed to define an offer, to trigger the development of new solutions and eventually to even elaborate their own solutions. This is also true within the city and that explains why we have called it the city 2.0. These embodiment and empowerment tools already exist and are gaining ground. One can indeed observe the success of services such as self service bike hire systems, car-pooling, car-sharing or even transport in demand. But this is also striking with mobile phones, city screens and new transactional tools. In London, the Oyster Card combines different functions while in Tokyo the Suica card has now migrated on mobiles and can be used as an electronic banking device. Dozens of millions of such transactions can be counted each day.

The user generated content

We can expect that the opportunities offered by these devices will further develop and that through them, individual users or social networks will contribute to providing information. As we will see later in this presentation, research programs already exist which study the use of digital traces in order to upgrade information systems, to reveal real time processes and to bring forward predictive answers. These are some more "intelligences".

Integrating users' skills and new work activities

The ability to integrate the user's skills is part of the solutions. It is however just a single element in the transformation of the interplay between actors. Indeed, operators of mobility's scope of activity is changing and widening. When the Deutsche Bahn or the SNCF provide bike solutions or offers a car-pooling or a car-sharing service, these operators of mobility go beyond their traditional field of activity in order to accompany their clients during the whole trip. In the same way, car manufacturers are expected to operate this shift and become operators of services in order to propose new relations towards the car. Step by step, the car would become part of global concept of mobility.

A global mobility and a mobility for everyone

It is necessary for the car to become part of this global system of mobility. We cannot keep dividing up cars and other modes of transport. We are indeed getting into a new era of multimodality and into a system of mobility where it is part of the users' landscape to have the opportunity to decide between different modes and to articulate them smoothly. This

exemplifies a mutation in the demand. And already, it sheds light on some striking aspects of the mobilities' offers' mutations. We cannot reduce the right for people to move and we even have to extend it, yet the need to comply with this demand should not lead us to propose a malthusianist reduction of the offer. Quite on the opposite, we have to promote another kind of management and build infrastructures that would fit with this vision.

Mobilities' perimeter is widening

Even though they are not traditional operators of transports, new actors are trying to take advantage from this new and widening scope of mobility.

- JCDecaux thus managed to successfully offer a new concept of self service bike hire systems
- Mobile operators or search engines like Yahoo or Google are part of this new corridor
- IBM proposes systems to regulate the traffic while Cisco proposes teleconference and telepresence devices

The point of these examples is to say that a new generation of actors feels concerned by the stakes of mobility. They are willing to contribute and provide "intelligences" but they need to be accompanied to formulate business and use models.

Sustainable development is not up for discussion

The pressure on society will get stronger and stronger, especially since transport already bears a big share of responsibility towards environmental threats. Reducing greenhouse gas effects emissions is not the only solvent solution. Indeed, a better use of existing infrastructures and another vision on travels can also be very powerful levers to tackle the issue of sustainable development. In Denmark, the government's motto for transport is "one third black, two third green" and the goal of public authorities is to reach a 50% modal share of bike rides in Copenhagen. In doing so, they take into account a mutation in the demand even if, in this country as well, car travels have the biggest share in terms of kilometers' number.

Complexity is an opportunity

More and more, the management of mobility will lie both on a complex demand and a complex supply. From the demand side, people organize their trips according to different and desynchronised times. From the supply side, there are more and more modes of transport which are proposed. The kind of market place that organizes the confrontation between the supply and the demand is becoming richer every day. While this can become a nightmare it can also be an opportunity under some conditions. First and foremost, this complexity is a chance if the whole pool of operators of mobility manage to make it be "accessible and familiar". Then, the supply side has to encapsulate the new definition of mobility and its scope to go beyond a mere transport offer. Substitutes have to be elaborated in order to

propose an alternative mobility and most notably, digital mobilities.

This is why intelligences are a pre requisite to sustainable development. This leads us to question the nature of these intelligences and to define the challenges they will have to face.

The same objects, other uses

The most spectacular thing is that the objects' identity is transforming. The car becomes another object because its shape is evolving. In France, within a year, cars have lost in average 10 cm, 40 kg, 53 cm³, 5 CV, 1,056 euros, CO2 emissions decrease and reach 10 g/km and tomorrow, the same car claims it will become electric and will be part of a network. And yet, this is nothing compared with the transformation of its status. The car is increasingly viewed as a useful tool that people use when it's appropriate. The Better Place project, adopted by Renault, is a single but striking example of new networks' concepts. It is a flexible network of charge spots and battery stations that allows a continuity in the charging of electric cars. To the same extent, development of car sharing contributes to transforming cars' status. New applications on mobile phones also benefit to mobilities with geolocalisation functions and other services contributing to making the trips smoother. Mobile actually becomes a central tool for mobilities. It goes as far as integrating transactional functions of "city passes". The screen also becomes a substitute of mobilities when it allows distance work or distance shopping. The transformation of these objects shows the intelligence of the ones who activate them in order to provide some monitoring tools for a better mobility.

Sharing at the core of the marketing offer

The concept of collective transport has evolved to such an extent that it now encompasses individual modes such as bikes or cars creating a new category of individual public transport. The awareness that people have to improve the objects' rate of use drives this evolution. In average in Paris, the same vélib' is used about 10 times a day. As for car-sharing, a car rate of use is doubled when a second passenger comes and sits next to the driver. Working on the time shift is another solution that british public transport authorities have started to explore in order to regulate traffics and lead to a better use of public infrastructures. This concept of "sharing" applies to information that users will be able to share with the community like on the web.

The city pulse

With digital technologies, citizens are at the same time "sensors" thanks to their mobiles, "data" through their traces and "operators" when they activate these data. Authorities and urban dwellers thus participate to the analysis, the representation and the management of the city and its pulsations. When a digital trace is sensed from a mobile or from a transaction made with a digital transport card it provides a "digital footprint". After being aggregated, anonymised and analysed this footprint can provide real time information concerning populations movements in different modes of transport as well as data regarding intensity of

transactions or CO2 measures for instance. This system reproduces the city's events and its perturbations. When an algorithm is added up to this footprint it then becomes a service. With these traces the city can thus be represented according to how it lives in real time. In the near future, this information will constitute the basis on which predictive informations will be drawn in order to monitor travels' organisation but it will be so under the condition that we manage to deal with the ethical and juridical stakes underlying this evolution.

Journeys' time

Among emerging innovative practices, some of them focus on the quality of the trip. Because this time can be long it offers an opportunity to introduce some daily life practices in the transports. This can be measured according to the number of commuters wearing ear plugs to listen to music or podcasts, according to people who talk on the phone for personal or professional reasons as well as according to people who benefit from traveling times to do shopping online or to activate a service.

Social interactions are not left apart when applications such as Aka-Aki in Berlin offer opportunities to meet people. In the same way, Twitter, which has been implemented in San Francisco by the Bay Area Transit Authority or in New York by the Metropolitan Transit Authority, offers an opportunity to talk for free with other travelers and to deliver real time information. In many countries, there is an increased number of traveler's blogs which express the strong need for transformations. In New England, where Clever Commute was born, users have organized themselves to deliver public information about public transports in order to deal with the lack of services provided by the public authorities. It is a spontaneous service animated by the travelers who exchange and post indications on the traffic on a Twitter format with spontaneous social networks.

These different innovations lead us to a twofold conclusion. First, travelers have skills and they are willing to participate. They nevertheless require tools, data bases, informational market places, terminals and networks.

Transport and city hubs

Intelligences do not only have digital and immaterial ends. Their goal is also to bring about solutions that would relieve the material daily life. The multiplication of hubs at every different scales of mobility, would provide services and product as well as resources for people to be able to rest, to work, to communicate with others whether they are in the same place or far away.

To conclude, I would like to quote two French authors who agree and encourage us to reinvent our urban models with intelligence.

The first one, Pierre Veltz, runs the regional development mission of the parisian region whose aim is to rethink the whole area. As for him, "the current crisis we are facing is pushing us towards a time of mutations that offers the historical opportunity to rethink our urban models. He calls for a massive investment effort that would combine a bit of concrete and a lot of intelligences. It could be a winning bet, most notably if we rely on the massive opportunities offered by digital technologies. He concludes and claims that the 'green growth' will first and foremost be a radical rethink of our cities as 'systems'.

The second one I would like to quote here is François Ascher, a professor at the French Institute of Planning who receives a couple of weeks ago the last Grand prix de l'urbanisme. As for him, mobility needs to be thought about according to an heterogeneity of territories. This represents a real challenge for transports when one considers the huge gap between well-connected urban centers and residential suburbs with poor public transport connections. He then suggests to be careful with the use of the 'sustainable city' concept which can often be backward-looking or antisocial. In itself, the city is by definition not sustainable. Things are not fixed, the city is permanently evolving. And, way too often, environmental issues prevail over social considerations.

I would like to conclude with this invitation : responsibilities of mobility's actors go beyond transport logistics. Mobility entered into people's everyday life, or maybe it is the other way round, but anyways, mobility, cities, transports and ways of life are way to intertwined for solutions not be looked for in a systemic manner. Partnerships between the different actors of the city are therefore necessary. (Hopefully) In coming colloquiums such as this one, we may see car constructors or mobile operators defending these positions.