innovation-futures.org
A Foresight Exercise on Emerging Patterns of Innovation
Visions, Scenarios and implications for Policy and Practice

INFU_innovations futures...
Panel 'The open innovation city'

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Introduction

The workshop's starting point was the following:

Beginning in 2012, Toulouse is the first city to declare itself an "Open innovation platform", with the aim of distributing the means to innovate to all, citizens, communities, entrepreneurs, established firms and public institutions.

The workshop was organized in 3 steps:
1. Participants were invited to "declare themselves" individually, indicating what they, from their professional or citizen point of view, were willing to undertake with the city in this new context. The goal was to add flesh to the concept of "the Open Innovation City", from the point of view of the actors themselves.
2. Participants were then divided in 4 groups. Each had to deal with one challenge the city gave itself or had to face within the next 20 years, and to design 4-5 initiatives that could stem out of the Open Innovation City in response to these challenges.

3. Finally, the participants were asked to individually describe their organization's, or their profession's, position and evolution 20 years from now, reflecting on their relationship to other urban actors and to the city as an institution.

What is an Open Innovation City?

The Open Innovation City is about:
- Co-deciding on all urban issues with citizens and other urban stakeholders. It looks for a win-win partnership between institutions (who can better perform their duties by focussing on their core missions and by receiving constant feedback) and other urban actors (who have an incentive to express themselves, innovate and take initiative).
- Co-producing urban services, not just as classic public-private partnerships, but through constant innovation in services and the delivery of services, stemming from all urban actors, from citizen communities to entrepreneurs, activists and artists
- Facilitating projects of all kinds, from the micro to the macro levels, from experimentation to implementation

The Open Innovation City is reflective:
- It observes itself, and the actions of its players: It constantly gathers and analyses data; It shares the raw data, the analysis tools and its analyses with all urban actors.
- It looks for feedback on its actions and all the experimentations that take place within its confines
- It constantly evolves

The Open Innovation City rests upon a number of key resources:
- Open data, be they public-service information (PSI) or other, crowdsourced or public data
- Flexible places that can support different kinds of activities at different moments
- Co-production places, including Fab Labs to prototype and produce physical as well as digital artefacts

Some of the key urban dimensions that could benefit from open innovation are: Sustainability; Housing; Neighbourhoods; Citizen services (in content and access); Resource sharing; Public equipment; Mobility; Suburban living…

The Open Innovation City in action: Responding to major challenges [macro level]

In order to see how the Open Innovation City would work, 4 challenges were offered to the workshop participants.

Challenge #1: Factor 4 Toulouse

Together, the municipality and its stakeholders set themselves a major challenge in 2020: Reduce energy consumption by 75% in a 10-year period. How can the Open Innovation City help?

- **Action 1: Transferring energy production towards decentralized, renewable-energy production**

  Based on an initial information on available technologies, mechanisms and incentives, the city undertook a major crowdsourced effort in order to identify the potential for decentralized, renewable-energy production, by house, firm, neighbourhood: which roofs could be used for solar energy, where thermal energy could be available, where materials could be recycled towards energy production, etc. The same initiative looked for major energy leaks in housing (thermo-photography, etc.) and solutions.
  The city provided technical, informational and financial resources for these decentralized equipments to be installed, and brought the energy providers to co-invest in decentralized networks of energy distribution and storage.
  It ran a competition in order to highlight and extend the best practices in energy production as well as savings. It provided all citizens with personal online and mobile tools to evaluate their personal energy consumption and emissions.
  However, co-operation was not enough to effect major changes. The city also had to revert to financial incentives and disincentives, for families, housing managers, and corporations located within its confines. It also had to renegotiate its contracts with its energy utilities.

- **Action 2: Mobility exchange and substitution**

  In order to drastically reduce physical mobility, and taking into account its lack of financial resources that barred it from heavily investing in mass public transportation, the city looked for other levers:
    - Build a "Job and missions Exchange" that would allow people to exchange jobs, temporarily or not, based on the proximity to their homes
    - Integrate car- and ride-sharing into their public transportation information, planning and pricing systems, allowing any private or community operator to connect to them
    - Create a "Mobility assistance" service that provides multimodal itineraries, but also offers incentive to share rides, both for personal mobility and moving merchandise.

- Facilitate the emergence of flexible working places, wherein people could come and work for short or long periods, hold physical/virtual meetings, benefit from shared tools (from printers and coffee machines to prototyping tools), etc.
- Facilitate the emergence of flexible service and logistics places, be they Public-access Internet places, local shops with some space to spare, post offices, that provide an aggregated access to public and private services, parcel delivery, etc.
- Most of those "flexible space" and sharing mechanisms are operated either by businesses or by community organizations.

- **Action 3: Imposing drastic changes**

  However, it quickly became clear that these initiatives would only work if the municipality was able to force change on all people, rather than just the willing ones. After a lot of public discussion, the city imposed a heavy tax on car usage, and even banned cars from large downtown areas. The tax took into account the existence of concrete alternatives for car usage based on where the citizens lives and worked, as well, of course, as the shared use of the cars. This decision allowed the former action to really start producing measurable effects.

Challenge #2: Airbus Industry leaves Toulouse

Airbus, Toulouse's main provider of direct and indirect employment, announces that it will shut down all its operations in Toulouse within 2 years, and move to Poland. How do all stakeholders anticipate this catastrophe, react and adapt to it?

- **Action 1: Phoenix, The Rapid-Reaction Task Force**

  In fact, the ongoing discussion between Toulouse's stakeholders had already discussed the possibility of Airbus leaving, if only as one foresight scenario among many. Phoenix emerged out of this prior work. It is an open group, with a shared governance, as well as a place, where:
  - All players meet and interact
  - Data on Toulouse, its economy, the opportunities it could seize, competing cities, etc., is made available, enriched and used
  - Simulation and scenario exercises are carried out
  - Projects are presented, discussed and facilitated

- **Action 2: Economic reorganisation**

  All Airbus' providers are brought together in order to collectively adapt to the new situation. Together, they build:
  - Networks, tools and places to collectively address clients and bids wherever in the world
  - Platforms that help them continue serving Airbus even though its main assembly lines are located thousands of kilometres away
  - R&D projects in order to adapt and target new markets
  - Shared facilities and personnel in order to reduce their costs…

- **Action 3: Job markets**

  Many workers may still have to be laid off.
  - Polish immigrants in Toulouse are given an incentive to help those Airbus employees willing to follow their employer do so. The Open Innovation City invents shared family houses that allow

those employees to return to Toulouse when they want, without needing to keep a permanent place to live.
- The city undertakes a massive, co-operative effort to map the competences of its inhabitants (starting with Airbus's direct and indirect employees, but not limiting itself to them), and provide them with electronic portfolios that help them value these competences on different markets.
- A job marketplace is organized.
- Another co-operative effort is created to map the new "diaspora" of workers who used to work in Toulouse and have had to move. Toulouse extends worldwide.

- **Action 4: Rebuilding a lively city**

  The departure of Airbus leaves large brownfield, unused areas. It removes more than 30% of the city's financial resources. The city then devolves to its citizens and firms most of the task of reusing the empty space and rebuilding key public services, with some financial incentives, but also a strong call to build sustainable yet inclusive models by themselves.
  - A co-operative mapping and description of the available space is carried out, which allows to market this space internationally.
  - Other spaces are occupied by local firms and communities at little or no cost. Their occupants update the city's maps themselves, and create the necessary shared transportation systems in order to allow people to work, live or entertain themselves there. The city makes sure these are integrated into its overall transport system.
  - Several public services are now produced in part by local communities, with help, training, materials etc. provided by the city.

Challenge #3: Self-Organized Social Services

Going several steps further than David Cameron's "Big Society", Toulouse announces that within 2 years, 90% of its budget for social services will be devolved either to the beneficiaries themselves, or to local (or global) players who can devise more efficient, more personalized and more inclusive ways to provide these services.

- **Action 1: A common mapping of social services**

  Public players and citizen groups coproduce a comprehensive map of social services, beneficiaries, providers, relays and mediators, delivery places...
  This map supports a "marketplace" for services, places, professionals, resources and needs.

- **Action 2: Citizen Social Marketplace**

  Some citizen communities believe that they will best provide some social services, rather than specialized firms. They create a "social marketplace":
  - Where each can list their competences, availability, expectations, needs, resources
  - Where needs can be aggregated and matched with resources
  - Where different means of exchange can be mixed: alternative currencies, "time markets" (an hour of this against an hour of that), etc.

- **Action 3: Building a shared basis to maintain inclusivity**

  In order to avoid devolution to produce a highly unequal social services landscape, the city and its stakeholders:
  - Agree on a "charter" that identifies criteria, priorities, evaluation mechanisms and how they will be discussed, as well as financial schemes

- Design a set of common platforms that will provide a level of interoperability among services as well as allow beneficiaries to change providers: A common card to access and pay all services (in Euros or an alternative local currency), etc.

Challenge #4: Hacking the Open Innovation City

Some urban actors take advantage of the openness of urban systems, data, services and decision-making processes and turn it towards their own selfish interests.

- **Scenario 1: Open Data reused for omnipresent geomarketing**

  Firms use the abundance of localized data, from traffic to crime to thermal leaks in buildings, in order to precisely target their marketing. Data assumed to be anonymous, once cross-referenced to other data, provide highly sensitive personal information that is abused by companies.
  Possible response: Data reuse licenses prohibiting some uses; Public exposure of abusive behaviours…

- **Scenario 2: Ultra-transparency**

  The extreme level of openness of information and decision-making produces negative or at least highly controversial effects:
  - Social pressure: Individual behaviour deemed to be uncooperative (such as maintaining an energy-intensive way of life) is exposed to the eyes of all.
  - Ultra-legalism: some stakeholders use the available information to find legal loopholes and block all decisions that do not suit their own interests.
  - Inhibition: Open debates linger on, and no strong decision is ever taken.
  - Extreme optimization: the availability of information allows for modelling against all inefficiencies, which become intolerable. But some gains in efficiency require, for example, price discriminations, and can have adverse effects on social inclusion.

  Possible response: Privacy protection; Improved public decision modelling, improved indicators taking into account externalities; Creating a "culture of data" so that citizens are more informed participants in complex public discussion…

- **Scenario 3: Forced privatization**

  The quality of private services that are created thanks to the openness of public information, functions, infrastructures, etc., is such that public players are no longer considered as a legitimate source of many services (think Google Transit or Google Books). As a result, many of the data, functions and infrastructures that used to be public become private, or at least privately-run – and cease to be as open as they were. The city's openness ends up reducing the level of openness, or even, reducing the level of accessibility to some key services by those who do not have the means to pay for them…
  Possible response: differentiating infrastructure (hard and soft), which should remain a public good, and services. Allow public players to compete with private players…

- **Scenario 4: Overexploitation of scarce resources ("Tragedy of the commons")**

  The success of the Open Innovation City produces numerous initiatives and innovations that compete for a number of scarce urban resources: public space, attention, wave spectrum… In vying for people's attention, they can also produce

information overload as well as visual and sound pollution. The whole city starts looking and sounding like Times Square or Shibuya.

Possible response: managing (physical) scarce resources differently from information, digital services and other abundant resources…

- **Scenario 5: Terrorism**

  Terrorists use the masses of available information to precisely target their actions, or to imagine unconventional actions: Shut down key urban systems, create anarchy by falsifying data in traffic management systems, etc.

  Possible response: Not all information and systems can be open…

What does (or doesn't) each player do in the Open Innovation City? [Micro level]

From the point of view of an elected city councillor:
- The city acts as a mediator rather than as a service provider
- It mixes bottom-up and top-down actions
- It focuses on organizing and enriching democratic life
- It devolves many decisions to a co-development Council
- It pays constant attention to experimentation and feedback

From the point of view of a city employee:
- The job evolves from that of decision-maker or service provider to that of expert and orchestrator
- The city provides infrastructures, both hard (networks of all kinds, places…) and soft (information, basic functions) upon which others can build services or public discussions. Its job is to make sure these infrastructures remain public and open, as well as reliable, secure, interoperable, and protective of individual and civil liberties.
- The closer link to other urban actors allows for a much better understanding of needs and evaluation of policies.

From the point of view of an entrepreneur:
- It is easier to think of projects, prototype them and experiment them in public space
- If the experimentation is successful, It's easier to reach out to the public and scale up

From the point of view of a citizen:
- Neighbourhood councils are given tools and data in order to work in much more efficient ways, not just discussing issues and formulating advice, but actually designing and implementing solutions to local problems: maps, data processing and visualization tools, simulators…
- The urban actors "ecosystem", that includes public institutions, small and large enterprises, associations, informal communities… is more closely linked, more co-operative.
- It is easy to move from the status of voting citizen or service user, to that of discussant, or innovator – the road from expressing a need to (co)designing and trying out a solution is short, easy and (since it's not a lonely road) even pleasant.

From the point of view of a researcher:
- The city is much more transparent and open to thorough analysis of its workings, its decision processes, etc.
- The city is a treasure of data
- Researchers are not just watchers, they are participants if the Open Innovation City

What does the Open Innovation City rest upon? [Meso level]

Shared "hard" and "soft" infrastructures

Open Innovation requires a High level of shared, common resources. Those are both hard and soft resources:

- Hard: networks (roads, energy, télécom…), places (shared places for discussion, production, service delivery…)
- Soft: information and data, software (eg, visualization, mapping, simulation, calculation), interfaces to existing applications ("Application programming interfaces" allowing to use public applications), means of communication (from billboards to local media to online spaces)…

Part of the role of public institutions becomes to either create and run these infrastructure, or to support those who do it, and to make sure they can not be misappropriated.

The need for "platforms"

Therefore, in the "Open Innovation City", a number of platforms need to emerge in order to manage the public "soft" and "hard" infrastructures.
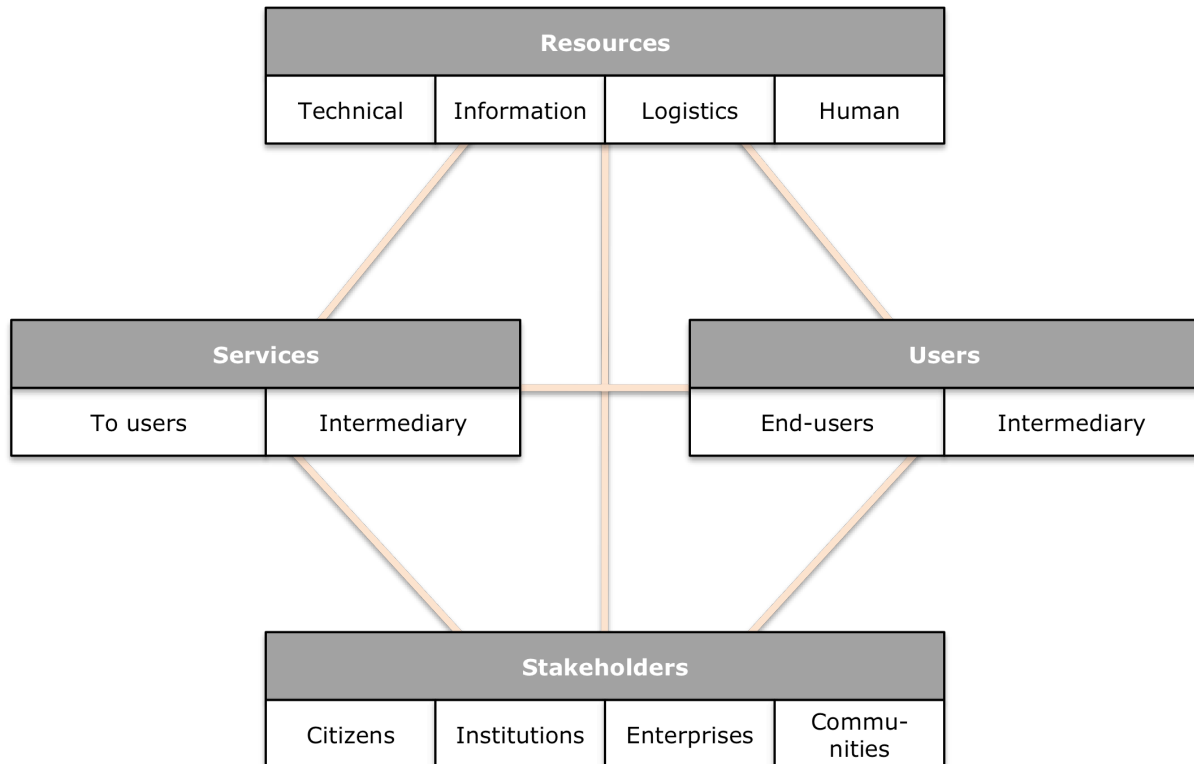
The role of platforms is to:
- Reduce costs for all players, both in terms of investment and operations: platforms mutualise resources, reduce transaction costs, etc.
- Make accessing urban resources easier for the public, and make it easier for innovators to reach the public
- Facilitate the exchange of idea and projects, and the building of partnerships
- Reduce risks to all players, on an individual level (as user or innovator) as well as a systemic level (make sure one innovative idea will not disrupt the normal functioning of other key services)
- Regulate the relationships between actors of the Open Innovation City

There will probably be several "platforms", some complementary, some competing with one another: digital platforms, community places, specialized platforms (eg, platforms for multimodal mobility)… Part of the work of municipal institutions will be to deal with these platforms, recognize the new ones, ensure compatibility and interoperability, etc.

Platforms require platform managers
- They act as mediators, regulators and sometimes conflict managers
- They facilitate projects and discussions
- They organize feedback and outreach
- They take care of the platforms' neutrality and openness
- They are in charge of a constant foresight discussion

This city uses Information and Communication technologies is a way that is different from the current way of considering them in most organizations
- Their main goal is not to automate and optimize existing processes, but to share information, support innovation, facilitate informed public discussions and provide constant feedback
- They intend to provide a large diversity of large and small projects
- They welcome hacks

Conclusions [pros and cons...]

In contrast to INFU's "City-Driven Innovation" vision, in the Open Innovation City, municipal institutions see themselves, not as innovators coming up with good solutions to urban woes and marketing them to other cities, but as supporters of an innovation ecosystem.

This ecosystem is made up of… all citizens, as individuals or professionals. It is made up of large and small companies, some specialized in urban services, some not; of associations and informal communities; of researchers; and of the public servants and public agencies themselves, who are not barred from innovating themselves, but who are just one player among many.

The power of such a vision, which is well documented in Open Innovation literature, and perhaps best illustrated in the history of the Internet, is that it provides the highest likelihood for both breakthrough innovations (which invariably stem from the most unlikely places) and small, incremental innovation that may be needed to make a system more efficient, or to facilitate access to a very specific population. By empowering all actors in the city, it has the potential to make it both more economically innovative (and attractive), more culturally vibrant, more cohesive.

There are also risks associated to this approach. They can be classified in 4 categories:
- Appropriation: the means to innovate are very unevenly used and mostly appropriated by a few, well-funded and well-organized players who end up edging out smaller players, citizens and even public institutions.
- Incoherence: innovative services and actions add complexity rather than simplicity, and pursue incompatible objectives. As an example, various mobility-oriented initiatives may, if they are not co-ordinated, end up in creating congestion in some places while other lack mobility resources.
- Instability: stimulation of open innovation and empowering overall creativity may lead to an on-going transitory situation where places are in continuous transformation, services are permanently work-in-progress lacking of reliability and stability.
- Abuse (see challenge #4): An Open city gives away lots of information that may be abused by lobbies, merchants or terrorists.

Therefore, the Open Innovation City needs political vision and guidance. It requires public institutions to change stance, but not to remove themselves from the game. In many case, they need to evolve from being service providers, to being infrastructure providers, to facilitate innovation and to regulate the resulting landscape of players, representations, and services. Evolving from the current situation to becoming an Open Innovation City requires time, experimentation, evaluation, benchmarking, and ongoing discussion among all stakeholders.

Annex 1: Participants

The workshop took place at the Piazza location at the Centre Georges Pompidou in Beaubourg, Paris the 11th October 2010 from 10:00 to 14:30.
Participants were:

- Hugues Aubin (Rennes City Council)
- Catherine Barbé (Sustainable City Institute, Paris)
- Boris Beaude (geographer, EPFL, Switzerland)
- Mohammed Benabbou (Villeneuve d'Ascq City Council)
- Amandine Brugière (Fing)
- Jean-Philippe Clément (Paris City Council)
- Philippe Durance (Cnam)
- Loïc Hay (Artesi Ile de France)
- Emile Hooge (nova7.fr)
- Paul Labrogère (Alcatel Lucent Bell Labs)
- Yann Le Tilly (CanalTP)
- Thierry Marcou (Fing)
- Bruno Marzloff (Chronos)
- Valérie Peugeot (Orange Labs)
- Philippe de Tilbourg (Greater Bordeaux Council)
- Daniel Kaplan (Fing – facilitator)
- François Jégou (SDS – co-facilitator)

Annex 2: panel process...

The Panel took place in a meeting room belonging to the Centre Georges Pompidou in the centre of Paris. The hypothesis of the city of Toulouse announcing in 2012 to experiment an 'Open Innovation Platform' was proposed as kick-off of the session.

Participants were invited to "declare themselves" individually, indicating what they, from their professional or citizen point of view, were willing to undertake with the city in this new context.
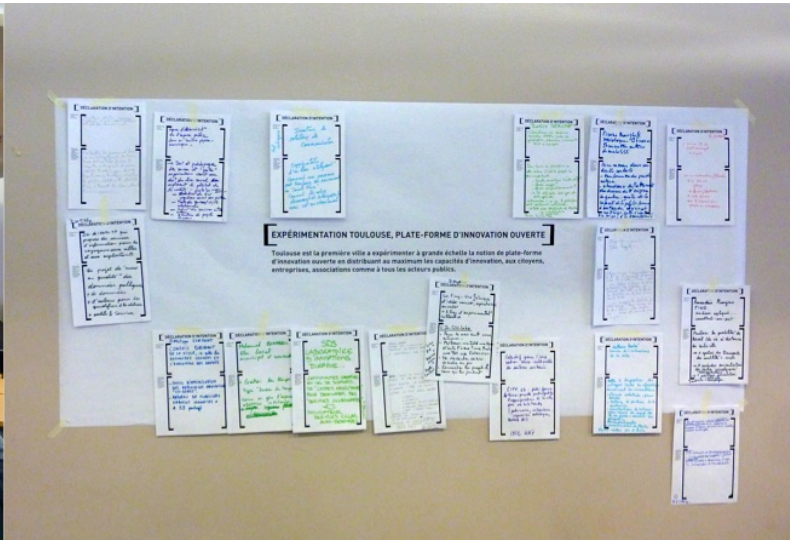
The goal was to add flesh to the concept of "the Open Innovation City", from the point of view of the actors themselves.
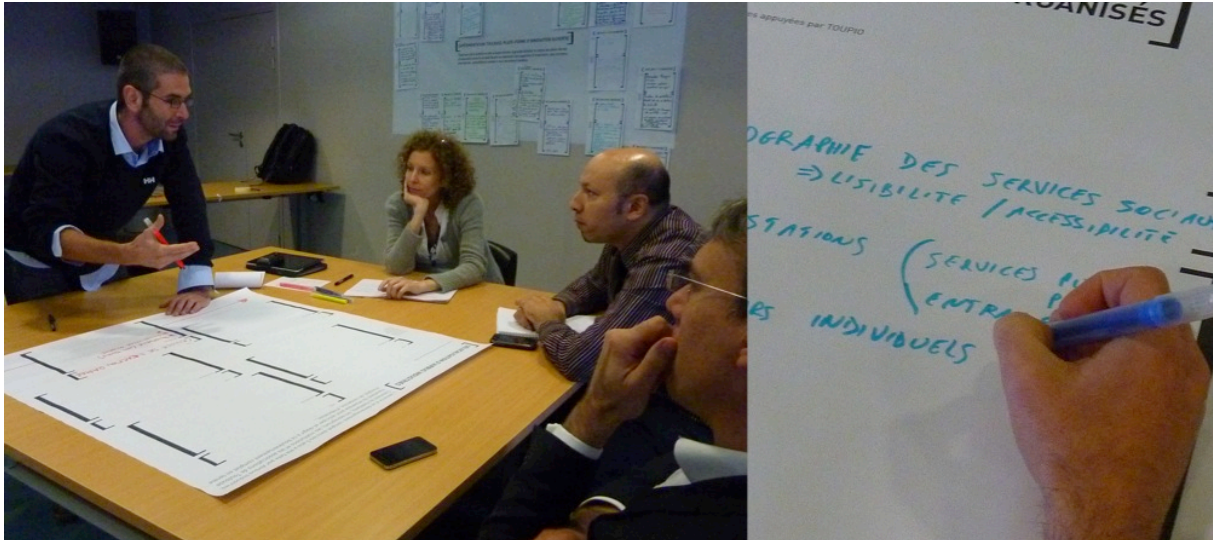
Participants were then divided in 4 groups. Each had to deal with one challenge the city gave itself or had to face within the next 20 years.

Each group came up with 4-5 initiatives that could stem out of the Open Innovation City in response to these challenges.

Finally, the participants were asked to individually describe their organization's, or their profession's, position and evolution 20 years from now, reflecting on their relationship to other urban actors and to the city as an institution.