

SMART City smart mobility and ICT issues

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During the last 5 years, not only in Europe, a common understanding of the role of Cities and urban areas in facing environmental, energy, mobility, economy and social cohesion aspects is emerging. This is recognized also by the EU that, with the new policy "Horizon 20-20", stressed the need to solve social problems in urban and metropolitan areas and to find meshed solutions for achieving a better quality of life.

In this context many definitions of "Smart City" have been formulated and many efforts have been carried-out for setting the more suitable solutions to the main issues characterizing City living and functions.

Yet, "Smart City" should be considered as a "method" based on a "problem solving" approach, rather than on a mere industrial and research perspective aiming to develop specific solutions or sets of solutions (in any case necessary). This method should allow the town stakeholders (urban planners, public/investment responsible persons, service contract officers, etc.) to identify the needs of urban and metropolitan areas and to define the specific requirements for suitable solutions, besides providing capability in "managing" the overall realization and operation process. The "Smart City" method involves a high level of multidisciplinary and different *knowledge layers* for providing more efficient, new or enhanced solutions to the different problems/aspects of city life and application areas:

- Emissions reduction, energy consumption, mobility and accessibility;
- Social cohesion and participation, interaction with government;
- Integration and interoperability of cross sector services;
- New business models and collaboration modalities.

Therefore, the cities should not speak about a smart city "package or platform" (valid for any town), but should rather start using a participative method in order to define real objectives, analyze needs, identify requirements, set and discuss the solutions and evaluate benefits and different impacts.

City governance and ICT

The Smart City method should strongly support the definition and the choice of the most suitable services/systems, the set-up of the related procurement process, the identification of day-by-day operation and management aspects and the assessment of real results.

The current main ICT (Information and Communication Technologies) elements (open data, open architecture, mobile network, mobile devices, broad band cable network, cloud connectivity, sensors, location technologies, etc.) can represent the city "backbone" infrastructure and can be the basis for providing services/systems for managing and controlling the different city problems and aspects.

Policy and decision makers and public authority stakeholders should nonetheless take into account that ICT is a part of the solution, along with governance and social participation, and should bear in mind that no "one size fits all ICT product or platform" for the "Smart City" exists.

City stakeholders and urban planners do need to change their behavior, taking into account first of all objectives and requirements and then the possible ICT solutions. It should be clear that the possible measures are based on mixed *solutions of technologies and infrastructures but also on organization-operation and regulatory aspects*.

At city level it is essential to develop a strategic and detailed ICT plan with a well defined Road map for achieving real results, as already done with Urban Plans or Sustainable Urban Mobility Plans (SUMP).

Smart Mobility

In the context of urban mobility and transport the concept of “smart mobility” is emerging, closely related to the application and use of ICT devices and platforms indicated as Intelligent Transport Systems (ITS).

Many services and systems are already present in the market both for general mobility (Access Control, Traffic Light coordination, traffic sensors network, Integrated Parking management, Variable Message Signs, Integrated Ticketing and service payment system, Infomobility and web/mobile services, etc.) and for public transport (Fleet monitoring and control, user information, trip planning, safety and security, Travel dispatcher center, etc.).

In this context the main axes of intervention at urban level should not involve only ICT infrastructures and services but also other initiatives depending on the city objectives and specific requirements such as, among the others:

- Green Measures (bike sharing, bike station, collective taxi, car sharing, etc.);
- Qualification, extension and differentiation of PT services (BRT-BHLS, FTS/DRTs, etc.);
- Urban logistics services (last mile distribution, consolidation centre, etc.);
- Integration of different modalities (FS-Bike, FS-TPL, P&R schemes, etc) and services interoperability.

It is essential to be very clear regarding “smart mobility” (and our traffic congested cities/towns): there is no effective solution without an important role of the Public Transport. Cities worldwide having the “best” *liveable, green and high socio-productive system* present an extended (time services and lines), efficient and high quality Public Transport.

By analyzing the real results of these different experiences it clearly emerges that smart mobility should involve the paradigm *Avoid – Shift – Improve*:

Avoid unnecessary travel by integrating land use and transport planning, based on public transport prioritized corridors, and improved communications; *Shift* travels to more efficient modalities and increased (green) transit options; *Improve* fuel and vehicle technologies. Once more, this paradigm also makes clear that “Buying technology does not automatically solve problems”.

City stakeholders. What we need

First of all it is necessary to have a clear idea of the “System” to be purchased in terms of objectives, functions, technology and resources. City stakeholders must *fully understand the operational objectives* of the systems/services that will be purchased and brought into their organizations.

Therefore the Operational requirements and organization structure must lead the process and influence the technology options and device choice. Moreover City stakeholder shall also commit to carry-out, among the others, the following actions:

- be aware of the current results, benefits, and problems encountered by other Cities in similar practices and contexts;
- balance the role of technologies with respect to operation procedures and organization scenarios;
- organize main training courses focused on “ICT, organization and operation” for the different level of responsibility involved;
- analyze in deep the costs dealing with investment, operation, support service, realization staff maintenance, etc;

- be aware of the realization timing and transition process;
- clearly define testing and commissioning procedures, and certification/sign off of the system.

Last but not least, it necessary to clearly identify the roles and responsibilities shared among the Public Authority, Transport Operators and Local authorities (specially for info services, service data reporting and costs) and in relation to the external systems and actors.

Which messages are necessary

First of all the City should develop an ICT Master Plan following specific guidelines (real objectives, requirements, functions, costs, etc.) also for the procurement process, as provided in many EU projects. This plan should clearly identify also the roles and responsibilities of the different actors and operators involved in terms of contract service tasks, performance indicators and financial criteria, as well as the main payment steps.

Moreover City stakeholders should take into account that the ICT system/service realization is a complex and articulated process, above all if the project involves areas and operators of different dimension and different services, as in the case of Smart City.

Besides the complex realization process, also the complexity of the design, specifications and procurement process (technical documents, evaluation phase, negotiation, contract, etc) is to be considered.

For this reason it is necessary to develop a detailed feasibility study/specifications and procurement document, although this activity requires some additional months that, at the end, are not relevant with respect to the overall real realization timing.

City stakeholders should finally take into account that “magic” solutions do not exist, when these involve ICT devices and systems.