

Co-Created Value Through Smart Governance.

Forum Session: *Service Science and/or Network and Systems Theory*

Maria Vincenza Ciasullo¹ – Orlando Troisi²

Purpose – The purpose of this paper is conceptualise a city as a Smart Local Service System (SLSS) whose competitiveness depends on sharing strategies and processes of cohesion for value co-creation and equifinality for stakeholder.

Design/Methodology/approach – Our methodology integrates Service Science Management and Engineering+Design (SSME+D) and Viable Systems Approach. Empirical research adopts a qualitative case study based on in depth interviews and document and action research on using services co-design methods and tools.

Findings – Theoretical and empirical research suggests that collaboration and participation in decision making (co-design), particularly by local residents, is critical for successful plan development and project implementation. In addition, a key element in improving local capacity to develop, implement and manage initiatives is a support network of organizations that have specific knowledge and expertise.

Research limitations/implications – The major limitations depend on a statistical impossibility to extend the findings, having pursued explorative objectives; anyway, given the theoretical scenario of reference, the proposed methodology can be a valid and reliable path for further studies.

Practical implications – The practical consequences of the research affect above all local actors, who must commit to protecting/enhancing the growth and sustainable development of local Area.

Originality/value – The research stimulates new perspectives of analysis on the local governance issue based on the processes of value co-creation in a context of open innovation.

Key words Service Science Management and Engineering (SSME), Viable Systems Approach (VSA), Complex service system; living lab, value co-creation; competitiveness

Paper type – Research paper /

¹ Associate Professor, Salerno University, DISTRA Dept. – Fisciano (SA), Italy – mciasullo@unisa.it

² Ph.D in Public Management, Salerno University, DISTRA Dept. – Fisciano (SA), Italy – otroisi@unis.it

1. Introduction

In our day and age cities are complex service systems, or what could be called systems of systems. Modern cities are growing both in number and in population. More than fifty per cent of the world's population now live in urban areas (Dirks & Keeling, 2009; Dirks, et al. 2010) and it is expected that, by 2050, the proportion will rise to 70% (<http://www.unfpa.org>). Urbanization, on the one hand, is emblematic of the economic and social progress of the Twenty-first century and on the other, evidence of how cities are engines of economic growth, as well as milieu of research, innovation, participation, coexistence, culture and education. Conversely, cities generate new kinds of problems in terms of resources i.e. components of natural, structural, urban planning, infrastructure (i.e. aging and deteriorating infrastructure, waste management, air pollution, traffic congestion, etc.). With reference to cities as systems, multiple stakeholders: citizens, individuals, groups, organizations, institutions, etc. are involved and are characterized by intense interdependence, competitiveness, shared objectives and values, and social and political complexity (Mele, Calabrese, Troisi, 2012). In this sense, city-related problems become entwined and tangled (Khademian & Weber, 2008; Dawes, et al. 2009). The complexity involving such territory contexts imposes on institutional governing bodies the need to interpret constantly evolving/emerging socio-economic dynamics (safety issues, traffic, immigration, etc.) At the same time, research is needed to identify adequate governance models of these key factors to contribute to creating institutional value and system survival. A role of strategic importance characterizes the transition from a transactional to a relational vision based on consensus and the participation of public and private sector actors cooperating and deciding on issues of common interest (Cepiku, 2008; Meneguzzo 1995, 2006; Kooiman, 2003). To achieve shared goals and to satisfy complex needs, the ability to put in place and govern networks, to create partnerships between economic entities not to mention social issues is fundamental, in order to achieve balanced objectives, interests and to perfect individual skills (Troisi O., 2010).

In this respect, a relational vision not only with reference to end user stakeholders (citizens, workers, tourists, etc.) but also to every actor contributing to providing quality public services and therefore involved in the co-creation of value. In other words, an "extended" relational process by means of which the actors involved participate at various levels in the service delivery chain (Pellicano et al. 2011).

From an analysis integrating the Viable System Approach (VSA) with the basic principles of the Service Dominant logic (SD logic) and Service Science, our paper attempts to respond to the following questions:

How can the complexity characterizing constantly changing socio-territorial scenarios be dealt with? What arrangements to ensure effective public services to the community be envisaged? In other words, how can living conditions in a local context be improved? What implications in terms of governance subsist?

At an empirical level the paper develops the case study of the city of Bologna, in the light of suggestions emerging from the literature. Finally, a discussion of the findings of research as a whole and suggestions for future research.

2. Literature review

2.1 Service Science (SS) and Service-Dominant Logic (S-D logic)

Attention addressed to the complexity of modern economies emerges from the studies of service management centred on closely linked concepts such as service, service systems and more recently, complex service systems. The foundation stone is thrown from the studies developed in the context of relationship marketing (Gronroos, 2000). In this perspective, the service should not be considered merely an attribute of what is exchanged or delivered but rather as an element supporting and distinguishing any interactive relation in terms of exchange. Nowadays we can find a growing presence of services in all the and the traditional dichotomy between goods and services gradually leans to lose its tone and meaning (Kotler, 1977; Normann, 1991; Cercola, 1996). More recently,

the literature has provided a different and wider interpretation of service underlining its multidimensional and more systemic nature in a theoretical context that has implications not only for marketing but for organizational studies, public administration, management, social sciences, and ICT. In particular, according to S-D logic, service is defined as the application of knowledge and skills for the benefit of an actor. Economic and social actors are resource integrators, and value is always co-created (Vargo & Lash, 2008). The good, as was the service, it does not embedded in value in itself, but a potential enhancement, Conveyed to the user through a value proposition, Which finds concrete expression Only When the effective interaction of service. In essence, the user does not receive value product, but Receives a value proposition in line with expectations of Their satisfaction cogenerando the value in the fruition system, so contextual and dynamic. Emphasis is thus placed on the process and positive interactions of doing something for and with another entity in order to create value (Lambert & Garcia-Dastugue, 2006; Prahalad & Ramaswamy, 2004; Vargo & Lusch, 2008). From a dyadic conception of trade in services, the co-creation of value implies the involvement of multiple actors engaged in an extensive network of interactions. Systemic vision of the service is underlined by the Service Science (SS) aimed at developing a wider multidisciplinary knowledge of service management, engineering and design (Maglio, Srinivasan, Kreulen, & Spohrer, 2006, Maglio and Spohrer, 2008; Alter, 2008). According to, Maglio and Spohrer (2008), a service system is defined as “a configuration of people, technologies, organizations and shared information that are able to create and deliver value to providers, users and other interested entities through service”. This integration of needs, resources, information and objectives among providers and users stimulates co-creation processes that have come to dominate the developed economies of the world (Qiu, 2009). Each service system represent, at the same time, a service supplier and user, that is structured, according to its necessity, as a value chain, a value network, a value system (Vargo, Maglio, & Akaka, 2008). Trade in services emerge from dynamic processes that coordinate infrastructure, employees, partners and customers in the value co-creation. The smallest service system centers on an individual as he or she interacts with others, and the largest service system comprises the global economy. Cities, city departments, businesses, business departments, nations, and government agencies are all service systems. The history of a service system is a sequence of interaction episodes with other service systems in which service systems, through their decision makers, act as resource integrators of operant and operand resources (i.e. knowledge, skills, know-how, relationship, competences, people, products, material and money) (Vargo & Lusch, 2006), supplied either from within an organization or through networks (Kothandaraman & Wilson, 2001; Spohrer et al., 2008). In service systems, interaction becomes the driver of value, the means through which service systems develop a joint process of value creation (Polese, 2009); hence, service systems can create competitive advantage by improving the reticular relationships. Recently, the researchers emphasize the complexity that surrounds the service system (Spohrer et al, 2007, Miller & Page,2007). As socio-technical systems, are the people to be put at the center of the organizational structure, and thus is emphasizes the importance of the human aspects and the uncertainties associated with the exchange of services (Qiu, 2009). In this perspective, service systems are generally characterised by an open and emergent interaction that may generate conditions of complexity (Sawyer, 2005). Recent study are focused on the modern service systems, intelligent, smart-type, encouraged in particular by the progress registered at an international level in the ICT (IfM, IBM, 2008). The fundamental idea is based on the necessity to consider more the organizations that are mainly able to face the changeable context conditions in a more reactive, adaptive, proactive and dynamic way to value creation (Barile & Polese, 2010; Gummesson, Mele and Polese, 2009; Gummesson, Mele & Polese, 2011).

2.2 Contribution of the Systems Thinking for the Service Comprehension: the Viable System Approach (VSA)

The Viable System Approach (VSA) (Golinelli, 2000; 2010; 2011; Barile, 2008; 2009) is a suggested method which based on the General Systems Theory (von Bertalanffy, 1962) has devised

a conceptual matrix which results in the gradual shift of perspective from observed reality with a focus on the parts, to a paradigm that declines interaction with a specific focus on the process. Although the concept of firm as a system is not new (von Bertalanffy, 1968) the innovative features of VSA lie in the circumstance that the comprehension of phenomena cannot be resolved exclusively by means of an analytical approach but only through a global perspective that combines both reductionism and holism. On the one hand, the interpretative structure-system paradigm enables the analyzing of the components (structure and relations from a static viewpoint) addressed to describing the phenomenon observed; on the other, it leads to comprehension of the whole characterized by dynamic interactions (systems and interaction viewpoint) which provides information on how the observed phenomenon works. Consequently, the structural dimension in its various shapes and forms (logical, physical, extended, specific) delineates the role of potentially active components; the systemic dimension (operative structure), emerging from the structure, clarifies how that role is carried out. In addition, the crucial condition of viability had to be taken into account (Beer, 1991): a system is viable if it is capable of constantly nurturing its capacity for survival in their context by creating conditions of relational consonance (harmony) with the sub- and supra-systems, which are perceived as relevant for the functioning of the system.

In other words, VSA suggests how an organization (as well as individuals) – is a viable system which owes its survival and its capacity for creating value to its potential for relations and interactions with other viable systems. This assumption is even more evident when a social organization operates in extremely complex contexts. Flexibility, contemplated in the definition of extended structure, represents a potential relational capacity that facilitates the calibrating of the system with the dynamics of the context, thus guaranteeing the creation of value. In other words, the extended structure implies the capacity and potential of system dynamics to relate to external systemic entities. Such potential favors the gradual forming of relational skills thanks to which by improving interaction with the various entities, the variety emerging from the context can be controlled. The systems and service perspectives together lead to the definition of organizational solutions that, to maintain flexibility, should be organized as service platforms which must be continuously redefined in function of the expected outcomes (Ng et al.2010). In this perspective, the governing body has to favor a level of relations that is coherent with the context. The latter, perceived and interpreted by the governing body from a subjective perspective, represents the relational context made up of various more or less systemic entities (i.e. suppliers, clients/consumers, financial institutions, public institutions, etc.) with which organization consider it convenient to relate. It emerges that the context, source of the resources upon which the system is nurtured, is characterized by a close network of interacting systemic entities the governance of which depends exclusively on the search for contextual consonance or in other words, the harmonious correspondence in terms of cognitive proximity and cultural compatibility, with the various systemic entities with which the organization creates relations (Ciasullo, Troisi, 2011). Consonance consequently, refers to the continual and constant search for compatibility and the propensity to establish channels of communications with the entities of the context. The constant search for context consonance fosters the capacity of the system to generate value in use for its supra-systems. In particular, such value in place represents the capacity of the viable system to acquire consensus and legitimization and as a result, to increase the likelihood of survival.

The VSA underlines the systemic nature of value creation processes; the company as an isolated entity totals little value taking into account it is a part of the value creation processes jointly and contextually with its specific interlocutors (Golinelli et al, 2010). It follows that value has to be considered in its dynamic capacity as well as in its multidimensional (economic, social, competitive) form. The implication is a process of knowledge governance which takes into account the weight of and effective role played by each interested party with the organization. In terms of context, the governing body selects the entities by virtue of which and due to their effective relevance, it qualifies as a potential participant in the dynamics of value creation. In other words, as co-creators, co-responsible for satisfying mutual needs and expectations. In a service logic

governance capacity consists, consequently in building together with said entities, close relations based on common programs, in a shared vision and shared value perspective. Value creation is linked therefore, to the capacity for collaboration rendering stable the encapsulating of critical resources (or better, basic capacities expressing the propensity to carry out particular tasks or deliver useful services) (Golinelli et al, 2002) independent of negotiations or contracts, which evolve towards stable and trustworthy relations capable of creating mutual benefits (Barile et al, 2006). This type of relation, in a partnership perspective, qualifies interaction characterized by the co-participating and codefining of objectives by means of the coordinating, sharing and synergic use of respective resources. In short, interaction in the framework of a convergent perception of belonging to the system or to the network of creation of value. A service logic is achieved only when the Governing Body is successful in having values deriving from actors value creation processes converge. In this respect, the VSA underlines the necessity for multi-criteria decision support systems that aim to reach satisfactory conditions for the involved decision makers in search of consonant and resonant interactions among systemic actors (Polese & Di Nauta, 2012). Consequently, a viable system survives when processes of co-creation of value comprise an ever wider range and number of actors with whom to create consonant relations (Barile, Calabrese, Iandolo, 2012). This means to shift focus on the context, changing perspective according to the different points of view (Maglio P.P., Spohrer J., 2008) and monitoring the emerging effects of the diversity factors.

2.3 Service innovation through network

In corporate activities, the paradigm that sees the customer an active part of the process, together with the development of ICT, has initiated a process of democratization of the process of value creation, with new formulas that involve greater interaction. The concept of the prosumer (producer-consumer), moreover, highlights how the participation of consumers in operations, also for what concerns the development of innovative products-services, is becoming essential for the survival of any social organization. Recent paradigms, such as open innovation and open business models (Chesbrough, HW, 2003), Web 2.0 (O'Reilly, T., Battelle, J., 2009) and the Living Labs model (European Commission, 2010), currently considered as user-driven open innovation ecosystems, promote consumers to the more proactive and co-creative role of users in the research and innovation process. According Chesbrough (2003, 2006), the "founding father" of the concept of open innovation, this can be the only way forward for businesses, if they are to survive. The main topic is represented by the continuous changes taking place in the knowledge economy that impose the need for its diffusion among stakeholders. No single actor is capable of grasping the entire process of knowledge that could lead to innovation. Collaboration and knowledge sharing is critical to achieving success on the market and to meeting the needs of users. The open innovation model has provoked interest in the changing roles of its participants. For instance, Chiaroni et al. (2010) emphasize the fact that open innovation requires the setting up of extensive networks of inter-organizational relationships with a number of external actors, including producers and their partners, customers and users, universities and research institutes, as well as other organizations and individuals. Innovation development, production, distribution and consumption networks that are distributed horizontally across many innovation users, exist in numerous fields and industries (von Hippel, 2007). The open innovation model has gradually involved also public service systems. With reference to the progressive digitization of services, the latter have started to implement user-led innovation processes and in particular user-driven innovation in the context of value co-creation through the model of living labs. The focus is gradually shifting towards the search for innovative services with high technological content capable of adapting supply to growing demand from citizens and businesses and to ensure, at the same high levels of employment, productivity and social cohesion.

A living lab is a social environment in which consciously built indeterminate and uncontrollable dynamics of everyday life are accepted as part of an innovation that allows designers

and users to co-produce new products and services (Frissen and Van Lieshout, 2002). European Network of Living Labs (2006, p. 1) define living labs as a system and environment for building a future economy in which real-life user-centric innovation will be the normal co-creation technique for new products, services and societal infrastructures." Living Lab is an ecosystem where a multitude of actors and partners can work alongside each other sharing knowledge whilst interacting with a wide variety of ICTs, therefore creating a fertile ground for innovation and cross-disciplinary research and communication. According to Pallot (2006) "living lab" is neither a traditional research lab nor a "testbed", but rather an "innovation platform" that brings together and involves, or engages all stakeholders such as end-users, researchers, industrialists, policy makers, and so on at the earlier stage of the innovation process in order to experiment breakthrough concepts and potential value for both the society (citizens) and users that will lead to breakthrough innovations. In the Living Lab concept, the lab environment is brought to the users and the experiments are validated in real life contexts (Mirijamdotter, et al. 2006). Schaffers et al. (2007) stress that networking is an integral part of the living lab model, which allows a focus on value generation and distribution in a network of cooperating partners, including customers and users. In the same way, Ramaswamy and Gouillart (2010) state that network relationships are one of the main components of the co-creation principle. Network configurations are dynamic, and therefore change over time is normal, reflecting the requirements of the actors involved and the (social) context (Kash and Rycroft, 2000; Koch, 2003). Vargo and Lusch (2011) agree that networks are complex and dynamic systems of actors. They also point out that companies learn in dynamic, changing environments and that value cocreation takes place in what they call "service ecosystems." Vargo and Lusch (2011, p. 185) define a service ecosystem as a "spontaneously sensing and responding spatial and temporal structure of largely loosely coupled, value-proposing social and economic actors interacting through institutions, technology, and language to (1) co-produce service offerings, (2) engage in mutual service provision, and (3) co-create value." These ecosystems require adaptability and agility for both the survival and the growth of the organization. Ecosystems are comparable with living lab in the sense that they are continuously learning, evolving, and adapting. Every service provision, resource integration, and value co-creation results in a change of the nature of the ecosystem (to different degrees) and "thus the context for the next iteration and determination of value creation" (Vargo and Lusch, 2011, p. 185).

3. Research methodology

3.1 Background to the case study

Based on the study of the City of Bologna, a particular theme of the research focused on the city's mobility service. Key questions were: "How do complex service systems contribute to value co-creation?" "Have testing open ecosystems and involvement in a network of actors facilitated and supported the creation of a new mobility service?"

3.2 Data collection and Data analysis

The research, essentially exploratory in nature, was developed using a qualitative approach and a case study methodology (Yin, 1994, 2003; Fayolle, 2004). The fieldwork approach, as suggested in the literature (Adams, 2002) has the dual aim of "grasping in detail the main characteristics of phenomena being studied" and of understanding the dynamics of a given process (Ryan et al., 2002). In line with Eisenhardt's (1989), suggestions, we combined different methods of data collection, in that 'triangulation made possible by multiple data collection methods provides substantiation of constructs and hypotheses' not only in hypothesis testing but also in theory-building research (Yin 2003).

The qualitative research methodology involved:

- content analysis of documents produced during the focus groups and design/planning tables;
- data collected from interviews with project managers and mobility managers of City Bologna and Region Emilia Romagna;

- secondary data from the Metropolitan Strategic Plan of Bologna (PSM) and the reports drawn up by project managers during project implementation SmartIP.

The primary sources of qualitative data were documents that resulted from the focus groups and from the design/planning tables. Overall, these documents were analyzed to reflect the attitude of the participants in the co-creation of value, and how project managers have integrated in the mobility service, information and suggestions emerging during meetings.

Interviews helped to acquire detailed knowledge of the processes and interactions involved. The timescale of interviews ranged from 1 to 3 hours. All interviews were audio-recorded and transcribed. A semi structured guide supported the interviewing process. The respondents were encouraged to provide detailed descriptions of all activities and interactions involved. Empirical data were collected at regular intervals over a ten-month period to capture the elements of change and development as they unfolded from a longitudinal perspective.

Data analysis provided a better understanding of:

- the nature of value co-creation between the City of Bologna and its citizens as systems of customers;
- the emphasis placed on the processes of value co-creation;
- methodologies and tools used for value co-creation.

4. Findings

The city of Bologna represents a highly attractive area in terms of structural endowment for the presence of industrial, commercial, and above all, cultural (university) components as well as transport infrastructure of national and international importance (station, airport, etc).

In recent decades, changes induced by socio-economic transformations have all complicated the question of mobility. Change for instance, related to demographic growth, displacement of families from the capital to the neighboring municipalities (in search of more economic housing and better environmental quality) not to mention changes in the lifestyle of the population (more time for travel, sports, cultural and leisure activities), increase in per capita income of households, transformations of the labor market (i.e. changes in the organization of production, advanced services, etc.) as well as increased incoming tourist flows and university students. However, the city of Bologna has not reacted or adjusted in a timely manner in terms of the value of infrastructures and related services and mobility. The outcome has been objective difficulty in satisfying relevant needs with traditional public transport.

As concerns the road network, by virtue of widespread development, critical conditions and levels of congestion in terms of mobility by means of public and private transport prevail. An increase in transport costs and deterioration both in terms of frequency and punctuality of journeys are also evident. Excessive noise and air pollution (CO₂, NO₂, etc.) levels have also resulted with serious repercussions on the quality of life of citizens / individuals.

A survey (source: Metropolitan Strategic Plan) of 2010, put in place by the city of Bologna has measured the sentiments of citizens relative to their perception of the daily strengths and weaknesses of urban life. The most relevant issues concerned services related to mobility and perceived quality of life. Results evidenced the impatience on the part of citizens in terms of: opinions relative to the railway station; access to the historical center; parking difficulties; delays in public transport timetables; poor connections; lack of bicycle lanes and shared means of travel (Biking / car sharing); safety and reliability for pedestrians.

The issues have caused a state of anxiety and discontent in the community, confirmed by the reported low level of satisfaction with living conditions; only 4.2% of the respondents indicated improvement in quality of life compared to that of three years previously). A dynamic involution of consonance results by virtue of the misalignment between the processes of government and suprasystemic expectations. In other words, the change in behavioral dynamics on the part of collective entities (citizens, individuals tourists, students, etc.) induced by changes in economic, social, cultural factors, impose on the government a need for re-contextualizing through which

conditions of harmony, empathy and dialogue with the reference context can be preserved (Golinelli, 2011). It is obvious that the interpretation of a reality which by its very nature is dynamic and constantly in evolution, renders the decision-making process highly complex (Barile, 2009).

With specific reference to the service of mobility, the local authority (municipality), being a complex service system, has initiated a process of cooperation with citizens and public and private sector partners in order to find common solutions for redesigning the service that are in line with the context, with the object of improving the system of management and monitoring of mobility 'and also' to encourage alternative transport solutions with reduced environmental impact (car pooling, car / bike sharing). To this aim, co-designing methods have been put in place. As is well known, the structural components (resources of the municipality operands and operants) (Vargo and Lush, 2008) can give origin to many systems depending on the key of interpretation adopted or depending on the specific goal to achieve.

The municipality of Bologna designs, coordinates and exchanges various services: public works, welfare, culture, security, registry, taxes, demography, tourism, mobility, urban development. It is evident that based on the same structure, depending on the object investigated or specific objective, systems such as public works, tourism etc. derive.

Therefore, by selecting a target such as the redesigning of the mobility service, all potential actors and components/critical resources, can converge towards shared objectives. It follows therefore, that improvements in the mobility service are achieved if all the relevant stakeholders are engaged in a service experience that meets at the same time, both subjective needs and specific objectives.

4.1 The Project SmartIP: Actors and Resources

Redesigning the mobility service is placed in the context of the European project SmartIP - Smart Metropolitan Areas Realised Through Innovation & People. The five pilot cities involved are; Manchester, Ghent, Cologne, Oulu and Bologna, the only Italian city included in the project.

The co-creation of value implies a network service facility with the presence of various actors sharing resources and expertise in order to improve Bologna's problem of mobility. In short, the collaborative relational dynamics developed within the service has enabled the synergic mobilizing of resources and capacities possessed by the various actors in order to co-create value. The network theory considers each entity as a dynamic resource, i.e. active in the network of interaction concerning many-to-many relationships (Pralhad, Ramanswamy, 2000; Loveolock, Gummesson, 2004; Achrol, Kotler, 2006; Gummesson, 1993, 2004, 2008). Actors actively engaged (see Table 1) included: mobility managers of the City of Bologna and the Emilia Romagna Region, police officers/traffic wardens, individuals, citizens, local communities, research centers (i.e the Politecnico di Milano), and a company specialized in the application of information technology in the field of mobility (specialists), transport companies. The network was coordinated by two project managers (employees working in the City of Bologna and the Emilia Romagna Region). Their objective was to define new ways to deal with the challenge from a mobility service innovation perspective. The active involvement of Bolognese citizens / individuals had the scope of acquiring in depth knowledge of experience, perceptions and opinions about the mobility service as a whole. Moreover, as emerges, the network has benefited from fundamental support on the part of the information technology company, characterized as a managed service provider, ensuring technological development and maintenance through planning, optimization and services and applications development. The reorganizing of service mobility, therefore, was influenced by the degree of intensity with which each actor participated in transforming and updating the service thanks to shared experience. An living lab and a social network (blog, microblogging) enabled the network, using shared methodology and expertise, to co-design smart mobility solutions, where innovation has been achieved from a citizens/users driven approach. The process is outlined below.

Tab.1 The network

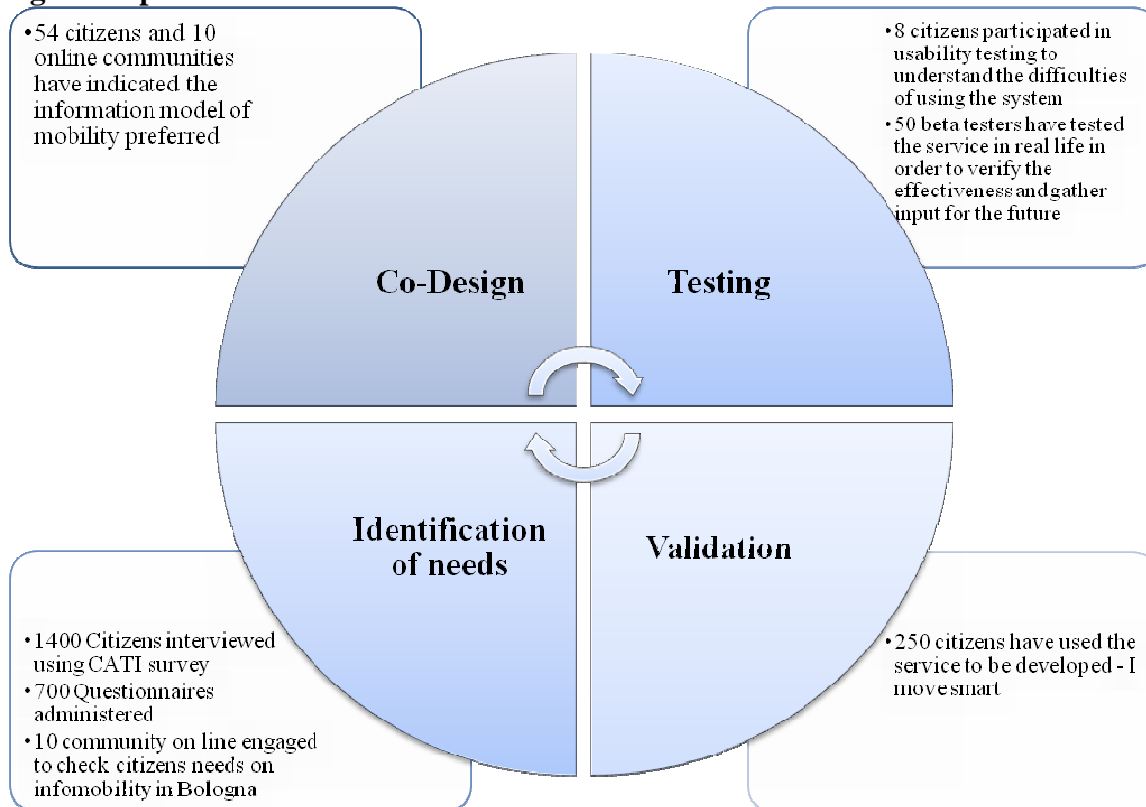
Actors	Resources and skills	Individual objectives	Shared objectives
Citizens	- Experiences, consensus, legitimation, taxes	- Wealth, - Smart moving	- Better mobility service
Mobility managers	- Mobility control	- Reducing road congestion - Provide real time traffic information for citizens through different channels	- Optimize the transfers of employees
Policemen/Traffic wardens	- Traffic control	- Increasing road safety - Improve traffic control in the urban area	- Traffic
Computing society	- IT skills	- Profits	- Smart mobility solution
Institutions	- Funding	- Improved quality of life	- Redesign of mobility services

4.2 The process of Co-design

The involvement of citizens/individuals, operant resources fundamental to the process of co-creation of value of the network occurred in four phases (see. Fig. 1):

1. Identification of needs
2. Co design applications
3. Testing of the solution identified
4. Validation of results

Fig.1 The process of Citizen Involvement

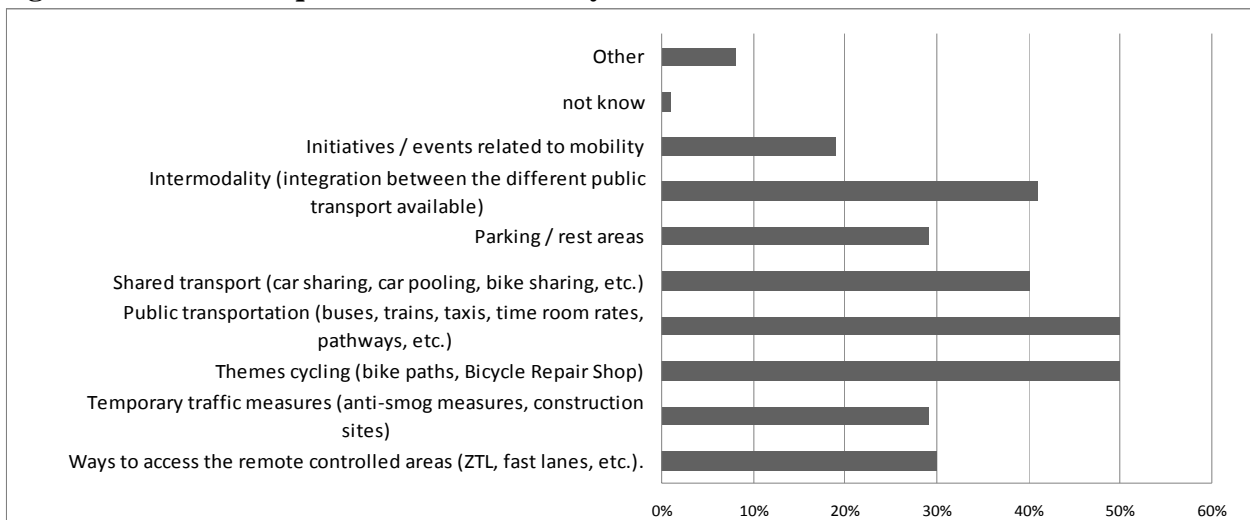


Source: our elaboration

1. Identification of needs.

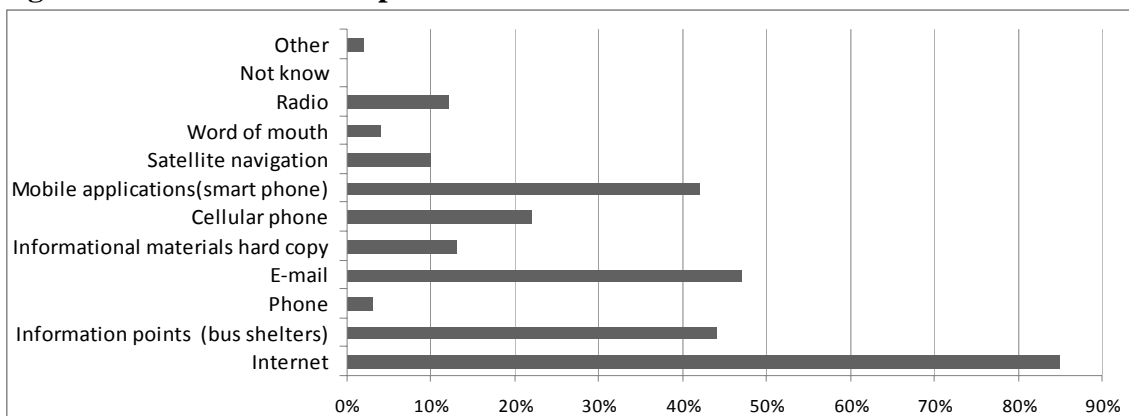
In this phase the information needs relative to the mobility service were identified by means of a questionnaire and CATI survey (computer-assisted telephone interviewing). The citizens of Bologna indicated their routine activities in terms of mobility - moving within the city, use of technologies, services related to information services, use of public transport and accessing information channels of interest, expressing personal ideas for mobility service improvement. The CATI survey comprised the interviewing of 1,400 citizens, the questionnaire was submitted to 10 online communities, two of a general nature, operating in the city (Tagbolab and Hyperbole) and eight related to the themes of mobility (Free to move, Along The Way, Bike Pride Bologna, Bologna pedestrian, bike in Bologna, La Consulta of the Bicycle, Gomypass, Open Bike). Analysis of the results highlighted several gaps with respect to information related to existing mobility services. In particular, citizens complained about the lack of detailed information (see Fig. 2) for their journeys on public transport (50%), cycling themes (50%), inter-modality (41%), shared transport (40%). With reference to the channels of access to information on mobility (see Fig. 3), 85% of the sample identified the Internet as their preferred tool, followed by e-mail (47%), information points (44%), mobile applications (42%). Finally, the information tools considered most effective (see Fig. 4) in terms of timely information on the mobility offer, included: websites (64%), geo-located maps (58%), social networks (43%), email (43%). The acquired information, served to focus on citizen needs, highlighting malfunctioning scenarios affecting their daily lives.

Fig. 2 Information requirements on mobility services



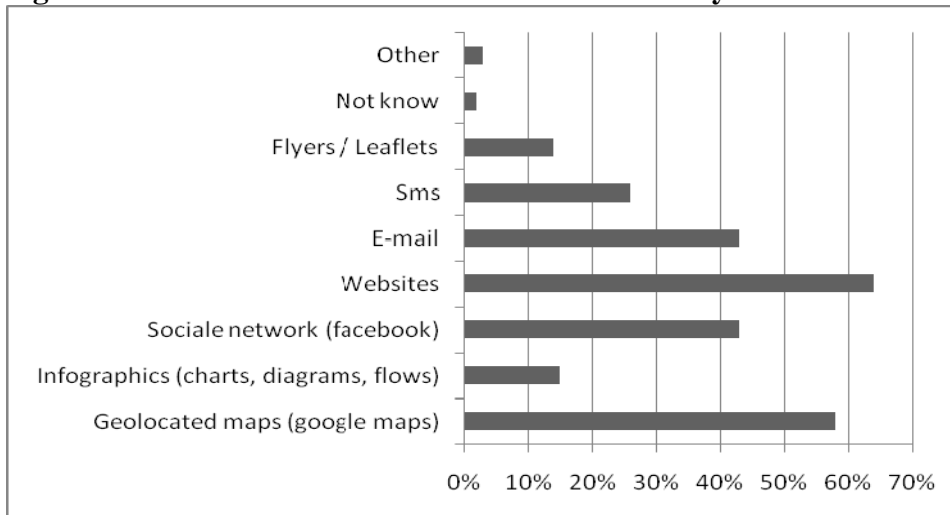
Source: Adapted by the Authors from empirical data.

Fig.3 Information channels preferred



Source: Adapted by the Authors from empirical data

Fig.4 Most effective tools for information on mobility choices



Source: Adapted by the Authors from empirical data

2. Co design applications

The applications phase of co-design were developed in the context of 'Living Labs' (European Commission, 2010). The workshops were organized during the months of March and April 2012 at the Bologna municipal seat. The workshops were used as a magnet to draw in people to encourage them to speak about a topic of personal interest. The advantage of the technique is that the reflection process of a group of people on a particular problem takes place in synergy, enabling the project managers to collect opinions and ideas on innovative mobility services. While the participants interact, ideas are exchanged, potentially creating an effect that enables them to develop new thoughts which may not have occurred independently (Ulwick, 2002).

This phase saw the participation of 54 citizens and all the actors involved in the network. The phase envisaged:

- an initial session in which project managers described the state of the art of mobility in Bologna, addressing particular attention to public transport: bus services, routes, etc.;

- focus groups during which participants took part in hour-long discussions on the city's daily transport problems. The problems involved in using public transport (buses) occupied most of the time. At the end of each meeting, participants were invited by the project managers to summarize on an index card, three or four problems they would personally act on first. The resulting information was crucial to understanding how new technologies could be incorporated into citizens'/individuals' daily routines:

- co-designing workshops during which citizens were given the tools to make sense of their experiences and to transform them into concrete issues. In particular four discussion tables were set up, each with its own subject of debate: themes: biking trails, shared media (car / bike sharing, car pooling), car parks, public transport (train, bus, etc.). On each topic, participants were asked to provide 10 ideas for the reorganization of the service. At the end of each meeting a spokesman illustrated to the project managers, the conclusions each table had reached. The quality of the information obtained during the meetings depended to a large extent, on the coordination and management put in place by the project manager.

In sum, the meetings, exalting the sense of belonging to a group, helped spread a climate of trust among people sharing a common problem. In this respect, empathy in terms of better interaction between actors can be channeled through informal meetings (Martin, 2009). The inclusive nature characterizing the meetings stimulated the participation of citizens in becoming active, benefiting the generating of new ideas for the development of new mobility services. Co-creative efforts produced 40 ideas for reorganizing service mobility. The ideas were transformed into several applications by the specialists in the field of Information Technology.

In a public meeting specialists presented the applications to be tested, Citizens proposed (by vote) 10 for testing. The specialists and mobility managers collaborated on the design of a prototype integrating many elements present in the applications privileged by the citizens. The bottom up approach responded to the need for creating solutions that really fit the needs of potential users of the service.

3. Testing of the solution identified

The experimental phase was carried out on two of the prototypes during the months of November and December 2012, conducted by:

- 54 betatesters (individuals expert in the use of information technology) and 8 citizen testers;
- 79 employees of the Region of Emilia Romagna.

The beta testers (users of smart phones and mobility services) were engaged for a week in commuting daily to use the prototype and providing feedback on:

- general service design;
- efficacy of prototype for everyday mobility by media (mobile, desktop, SMS);
- efficacy of each service (SMS service, map, widget) in every day routines;
- usability (icons, smooth navigation) in daily routines.

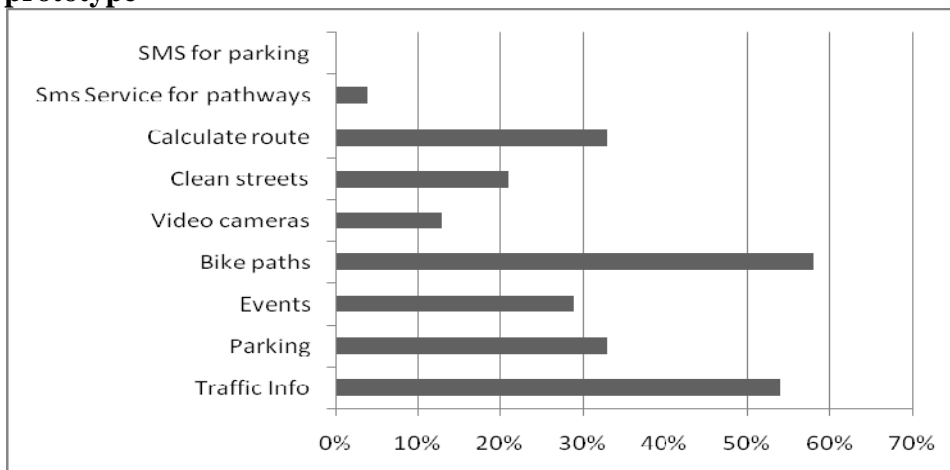
The services satisfying the needs of mobile information of the beta testers (see Fig. 5) were: bike paths (58%), information on traffic, parking and routes (33%).

The 8 citizens tested the prototype using computer equipment: PC, Mobile, Tablet; reporting:

- method of use of services;
- differences in prototype usability based on functional devices;
- improvements for existing services;
- new service ideas;

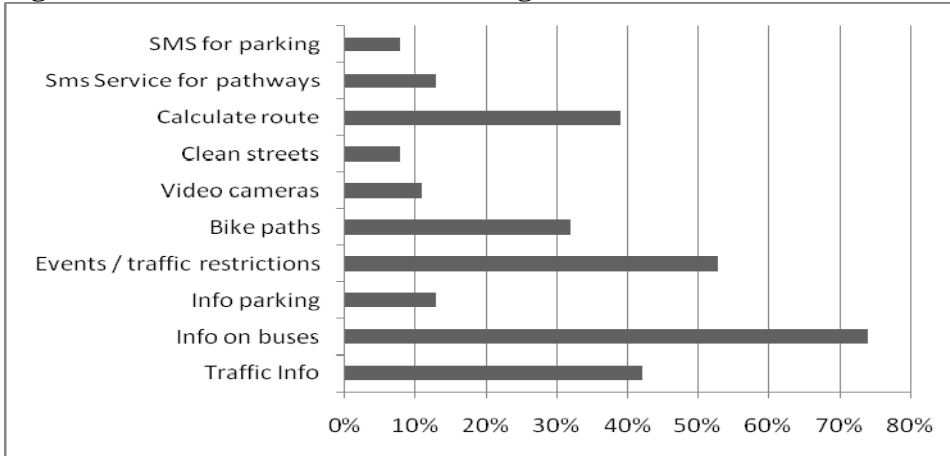
The overall judgment of the prototype by the 8 citizens (see Fig. 6) was positive. They considered the parking service the most efficient and complete (42%), followed by driving (29%) and traffic (23%).

Fig. 5 Rating provided by the beta testers on the utility of each service activated within the prototype



Source: Adapted by the Authors from empirical data

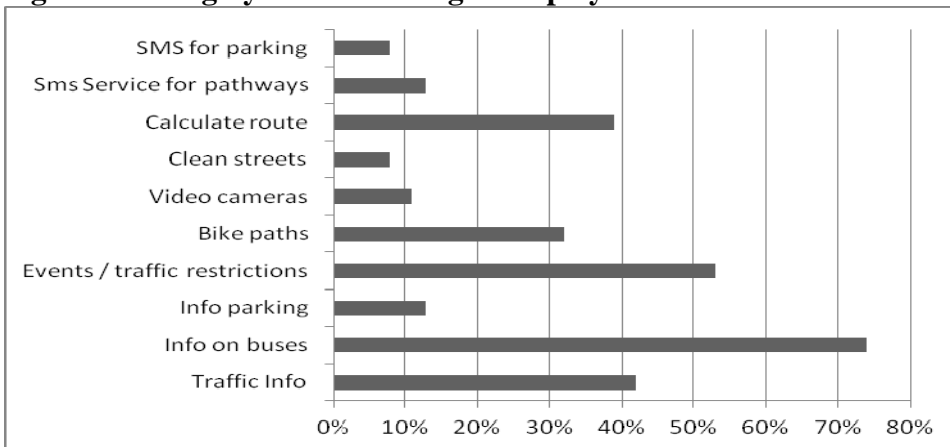
Fig 6 Service that most satisfied the eight citizens



Source: Adapted by the Authors from empirical data

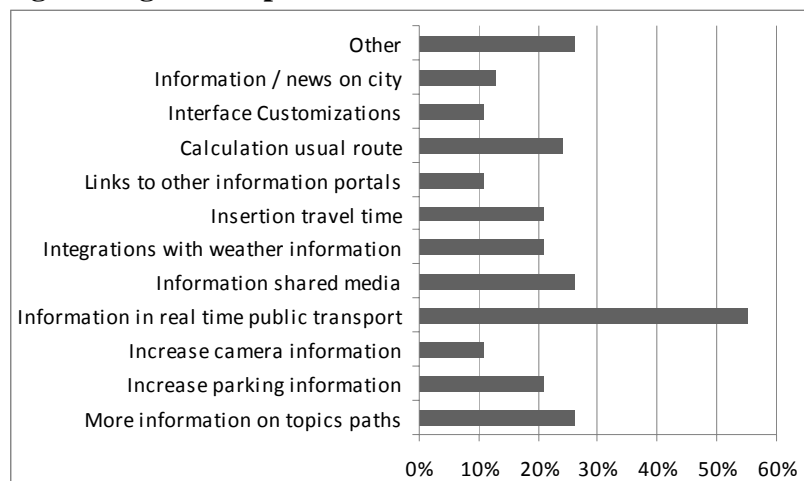
The second test involved the employees of the Emilia Romagna Region, frequent users of public transport. The sample considered (see Fig. 7) the service info on the buses the most effective (74%), followed by info on events (53%), info on traffic (42%). The employees also provided information on margins for improvement of the prototype (see Fig. 8).

Figure 7 Rating by Emilia Romagna employees



Source: Adapted by the Authors from empirical data

Fig.8 Margin of Improvement



Source: Adapted by the Authors from empirical data

The testing phase was completed with the devising of a prototype consisting in 10 innovative mobile information services. In this phase a central role was conducted by project managers and specialists, supported by several other actors such as: transport companies, policemen and the Politecnico di Milano.

4. Validation of results

The Validation of results involved the participation of 250 citizens. Each participant was asked to play a part, outlined below and corresponding to a potential user of the platform:

- ✓ drivers (whoever drives, cars, motorcycles, vans, any motor)
- ✓ travellers (whoever travels on public transport)
- ✓ bikers (whoever uses bikes for travelling)
- ✓ umarells (citizens / individuals observing)

Each participant, after choosing the role consistent with their mobility needs, used the services of the platform, as discussed below (see Tab. 2):

Table 2 The services of the platform

	Drivers	Travellers	Bikers	Umarells
Services	Calculate route	Bus stops	Bike paths	Circulation problems
Services	Traffic Info	Bus lines	Bike Racks	Accessibility of places
Services	Parking	Waiting Times		

Source: our elaboration

On completion of their role, the participants filled in a questionnaire requiring information on the date and time of the test, platform used (mobile, computer), services tried, evaluation of the platform with respect to individual and collective services and suggestions for improvement.

The following table shows suggestions made by users that have enabled the optimizing of the services and applications of the technology platform.

Table 3 Suggestion by users

	Drivers	Travellers	Bikers	Umarells
Suggestions	Smart semaphores	Smart shelter	Information panels	Management sanctions
	Intelligent navigation systems	Change paths of some lines	Bicycle Repair Shop	Access Management Limited Traffic Zones
	Park and ride	Strengthen bus lines during peak hours	Signage dedicated to cycling routes	

Source: Adapted by the Authors from empirical data

At the end of the questionnaire each participant was given a prize (bag for the bike and a pen drive on which are loaded information about using services platform).

The end result of the whole process led to the development and putting in place of a platform in the city of Bologna: "I move Smart", highly innovative and customized to citizen needs. The platform configured as a collector of services and integrated channels, by means of which

citizens / individuals access the info-mobility service tailored to their specific needs. The platform collects data on traffic information in real time and informs citizens about timetables and public transport routes, limitations and problems of urban congestion, bike paths, parking availability, warnings about maintenance, etc. The platform as well as an effective tool for information envisages the active involvement of users as enabled users (sms-by sending e-mails) to inform in real time of problematic situations (i.e. accidents, malfunctioning, etc). In addition, the platform, by stimulating participation on the part of citizens to share experiences, performs a pro-active role in the process of generating new ideas. Channeling the same theme through an interactive game offers the concrete possibility of enhancing creativity and knowledge in a perspective of continuous innovation to improve service. Finally, the platform as an instrument by means of which it is possible to promote the use of alternative means of transport favors the private sector. This allows for a more sustainable transport system. In particular, by making transport services smarter: public transport, bike lanes, parks etc., the conscience of the citizens can be acted on with the aim of spreading a culture of sustainability.

5. Implications for governance

As mentioned above, the service is configured as a network, managed by an institutional project manager and experts in information systems. They represent the bridge between the governing and operational levels on management, because they are able to drive operant resources towards a shared goal (Saviano, Di Nauta, 2011). In addition, the network envisages specialists from outside. The resources involved are multifaceted in terms of highly specialized skills and competences (Adinolfi, Troisi, 2012). At the same time, the adequate variety of cognitive knowledge ensures harmony with other network resources. Cooperative logics developed between public and private sector actors has enabled the co-creation of value from synergies in terms of ongoing processes of cooperation and outcomes from distinctive competences.

However, an aspect not to be underestimated is that the network involves, as customers of the system with whom to share goals, values and skills. In this perspective, citizens represent key partners in achieving specific objectives.

The enhancement of civic related skills is achieved through constant coordination and a stimulating ‘living lab’ or workshop supported by the social network (Ciasullo, Carrubo, 2011). In this perspective, rules are not formalized relations but emerge in the context of the network on the basis of a process of sharing joint synergies during the process of value creation. Citizens (in the role of clients, users, beneficiaries), play a dual role in bringing critical resources and in contributing responsibly to their own satisfaction. This depends primarily on their ability for interaction. As emphasized in the literature (Alford, 2009; Vason, 2011; Pestoff et al, 2012) citizens contribute to the production of the service, becoming, thus, co-responsible for the disbursement of the service. Coproduction is an important debate within public management. It goes to the heart both of effective public service delivery and the role of public services in achieving other societal ends—such as social inclusion or citizen engagement. However, the current debate is based upon a partial and mistaken view of coproduction, as something to be added to “traditional” public service delivery for distinct ends. In contrast, a service-dominant approach offers a very different perspective of coproduction. Coproduction is a core element of the service delivery process—an essential and intrinsic process of interaction between any service system and its service users at the point of delivery of a service (Gronroos, 2007). From a service-dominant approach, the coproduction of public services cannot be avoided because it is an inalienable element of such services. The question thus is not how to “add-in” coproduction to public services but rather how to manage and work with its implications for effective public service delivery. A core element of a service-dominant approach to the coproduction of innovation is that it seeks to unlock the tacit or “sticky” knowledge that service users possess in order to improve existing or to develop new services (Von Hippel, 1994, 2005). Here, the service system proactively seeks to uncover, understand and satisfy “latent (or future) needs,” rather than simply reacting to existing or currently

expressed needs—as has invariably been the case with public services. Therefore, by taking a public service-dominant approach, coproduction becomes an inalienable component of public services delivery that places the experiences and knowledge of the service user at the heart of public service design and delivery (Osborne, 2012). From a relational perspective, the successful experience of coproduction encourages citizens to develop more horizontal type relationships and social capital of context.

Enhancing "bottom-up" relational interaction works in a context that is not only functional, but strategic, in which the involvement of citizens in the process of value creation is also manifested in the sphere of political decision-making. In this respect, the project SmartIP is one of the objectives stemming from the Metropolitan Strategic Plan. In the context of the number of projects aimed at developing advanced and innovative sustainable mobility, SmartIP provides timely opportunities and constant comparison tools, essential for ensuring the sharing not only of the objectives of the project but also the solutions and their management. All the design ideas contained in the programme are the result of a process that began with the setting up of thematic working groups, public meetings and shared outcomes with relevant stakeholders. The relational element is consequently, critical for building the local government structure. To become systemic, the role played by local governance has to involve establishing visions and shared paths in line with stakeholder expectations. If it is true to say that the satisfaction of a public need is the result of joint action by a network of specialized and interdependent actors, each of whom contributes to the satisfaction of the need individually, it is also true to say that government action is expressed in the governance of complex networks.

In such a logic, the government has to create and foster the development of the conditions necessary for enriching the culture of the territory as a whole, in harmony with the socio-economic dynamics of the local community in which it is placed. In essence, the governance model has to encourage profitable interaction among the actors in the field and the circulation of ideas, initiatives and knowledge. Through ongoing involvement, the government does not have to simply provide service, but in terms of shared values, has to respond, guide and stimulate society. In other words, government action facilitates, drives and attempts to address dynamic decision-making processes by using common substantive levers, such as: the clarification and dissemination of principles and values, not to mention visions and missions, through constructive communication with citizens and stakeholders.

6. Conclusion

The change of the dynamic behavior of several collective entities (citizens, tourists, students, etc..) of the city of Bologna, induced by changes in social, economic, cultural, have led to the emergence of new needs related to mobility service by requiring decision-makers a recontextualization of action aimed at recovery of consonance intersystemic. In this perspective, the local authority (municipality), understood as a complex system services, in a win-win logic, initiated a process of cooperation with citizens and public and private partners to co-create solutions to redesign the service with the aim of improving the system of management and monitoring of mobility, and also encourage alternative transport solutions with reduced environmental impact. In an environment of open innovation and through the methodology of living labs has been possible to design and implement a customized service innovation on the needs of the citizen. Relevant actors have been involved in a service experience capable of satisfying at the same time both the subjective needs that the specific target. And well clear, however, that citizens, understood as systems of customers, were involved both in the co-production of value (in terms of value proposition) that co-creation (in terms of value in use). Finally, the findings suggest that customers and users have various roles depending on the phase of innovation co-creation. For the municipality of Bologna, the enhancement of civic skills has led to a recovery of the effectiveness of dynamic external environment, while the efficiency of the internal structure has been pursued through the implementation of flexible service platforms (i.e. Project Management). The project managers have

assumed a role of facilitators in the process of open innovation as adept at guiding operant resources toward a shared goal. Follows as in the search for contextual consonance sub-and supra-systems, government processes have been modified, both internally and externally.

A limit of the work is to be identified in having focused exclusively on one type of open innovation (i.e. living labs), but other forms of open innovation might provide different result. However, the work is a useful reference for policy makers and business practitioners interested in supporting the design of innovative mobility services. In this perspective, open innovation builds upon the collective design of production value, knowledge and goods. Finally, the work provides a contribution to the emerging theme of Smart Cities.

7. References

- Achrol, R. S., & Kotler, P. (2006), "The service-dominant logic for marketing: A critique", in R. F. Adams, C. (2002), "Internal organizational factors influencing corporate social and ethical reporting: beyond current theorizing", *Accounting, Auditing and Accountability Journal*, Vol. XV No.2, pp.223-50.
- Adinolfi, R., Troisi, O. (2012), *The quality of a training course: a survey of determinants*, in "15th Toulon-Verona (ICQSS) Conference Excellence in Services-Conference Proceedings", Rishon Lezion, Israele, Settembre 2012.
- Alter, S. (2008), "Service system fundamentals: Work system, value chain, and life cycle", in P. P. Maglio, & J. Spohrer (Eds.), *IBM Systems Journal*, 47 (1), 71-85.
- Barile S., Calabrese M., Iandolo F., "Sostenibilità e paradigmi service-based: possibilità e criticità per l'economia d'impresa", *Sviluppo & Organizzazione*, n. 250, Agosto/Settembre 2012.
- Barile, S. (2009), *Management Sistemico Vitale*, Giappichelli, Torino.
- Barile, S., & Polese, F. (2010), "Smart service systems and viable service systems", *Service Science*, 2(1), 21-40.
- Barile, S., (eds), (2008), *L'impresa come sistema. Contributi sull'approccio sistemico vitale*, II Ed., Giappichelli, Torino.
- Barile, S., Nigro, C., Trunfio, M. (2006), "Problematiche metodologiche per la qualificazione del modello della rilevanza dei sovra sistemi", in Barile S. (eds), *L'impresa come sistema. Contributi all'Approccio Sistemico Vitale*, Giappichelli, Torino
- Cercola, R. (1996), "La fine della dicotomia beni-servizi: nell'economia neo-industriale l'impresa deve creare valore per i partner", *Sinergie*, 40, 37-68.
- Chesbrough, H., 2003, *Open Innovation*, Harvard Business School, Press, Boston.
- Chesbrough, H.W. (2006), *Open Business Models: How to Thrive in the New Innovation Landscape*, Harvard Business School Press, Boston, MA.
- Chiaroni, D., Chiasa, V. & Frattini, F. (2010), "Unravelling the process from Closed to Open Innovation: evidence from mature, asset-intensive industries," *R&D Management*, Vol. 40, No. 3, pp. 222-245.
- Chourabi, H., Ramon, J., Pardo, T. A., Taewoo, M., Sehl M., Shawn, W., Karine, N., Scholl H. J., (2012), "Understanding Smart Cities: An Integrative Framework", in *Proceeding Act 45th Hawaii International Conference on System Sciences*; IEE Computer Society, pagg. 2289-2297.
- Ciasullo, M.V., Carrubbo (2011), "Tourist systems co-creation exchanges: service research and system thinking insights for destination competitiveness", in Gummesson, E., Mele, C., Polese, F. (a cura di), *System Theory and Service Science: Integrating three perspectives in a new service agenda*, Giannini, Napoli, 14-17 giugno.
- Ciasullo, M.V., Troisi, O., (2011), "The creation of sustainable value in SMES. A case study", in *14th Toulon-Verona (ICQSS) Conference Excellence in Services- Conference Proceedings*, Università di Alicante, Settembre 2011.
- Dawes, S. S., Cresswell, A. M., & Pardo, T. A. (2009). "From "need to know" to "need to share": Tangled problems, information boundaries, and the building of public sector knowledge networks", *Public Administration Review*, 69(3), 392-402.
- Dirks, S., & Keeling, M. (2009), *A Vision of Smarter Cities: How Cities Can Lead the Way*
- Dirks, S., Gurdgiev, C., & Keeling, M. (2010). *Smarter Cities for Smarter Growth: How Cities Can Optimize Their Systems for the Talent-Based Economy*. Somers, IBM Global Business Services, NY.
- Eisenhardt, K.M. (1989), "Building theories from case study research", *Academy of Management Review*, Vol. 14 No.4, pp.532-50.
- European Commission (2010), *Living labs for user driven open innovation*, ec.europa.eu/information_society/activities/livinglabs.
- Fayolle, A. (2004), "À la recherché du Coeur de l'entrepreneuriat: vers une nouvelle vision du domaine", *Revue Internationale P.M.E.*, Vol. 17 No.1, pp.101-21.

- Golinelli G.M., 2011, *L'approccio sistemico al governo dell'impresa. Verso la scientificazione dell'azione di governo*, Vol. II, seconda ed., Cedam, Padova.
- Golinelli, C.M. (2002), *Il territorio sistema vitale. Verso un modello di analisi*, Giappichelli, Torino.
- Golinelli, G. M. (2000), *L'approccio sistemico al governo dell'impresa. L'impresa sistema vitale* (Vol. I), Cedam, Padova.
- Golinelli, G. M. (2010), *Viable systems approach (VSA). Governing business dynamics*, Kluwer Cedam Padova.
- Golinelli, G.M., Barile, S., Spohrer, J., Bassano, C. (2010), "The evolving dynamics of service co-creation in a viable system perspective", in *Proceeding Act The 13 th Toulon Verona Conference*, Coimbra, September.
- Grönroos, C. (2000), *Service Management and Marketing. A Customer Relationship Management Approach*, John Wiley, Chichester.
- Grönroos, C. (2006), "Adopting a Service Logic for Marketing", *Marketing Theory* 6(3):317–33.
- Grönroos, C. (2008), "Adopting a service business logic in relational business-to-business marketing – value creation, interaction and joint value co-creation", *Proceedings of the Otago Forum*, 2, 269–287.
- Grönroos, C., (2007), "Service Management and Marketing: Customer Management in Service Competition", *3rd Edition, John Wiley & Sons Ltd.*, England, P. 483
- Gummesson, E. (1993), *Quality management in service organizations*, St. John's University and The International Service Quality Association (ISQA), New York.
- Gummesson, E. (2006), "Many-to-many marketing as grand theory", in Lusch, R. F., & Vargo, S. L. (eds), *The service-dominant logic of marketing: Dialog, debate, and directions* (pp. 339–353), ME Sharpe Armonk, NY.
- Gummesson, E. (2008), *Total relationship marketing. marketing management, relationship strategy, crm, and a new dominant logic for the value-creating network economy (III ed.)*, Butterworth-Heinemann, UK.
- Gummesson, E., Mele, C., & Polese, F. (2009), "Service science S-D logic and network theory: Integrating the perspectives for a new research agenda", in E. Gummesson, C. Mele, & F. Polese (Eds.), *Service science, S-D logic and network theory* (pp. 1–6), Giannini, Napoli.
- Gummesson, E., Mele, C., & Polese, F. (2011), "Integrating the 3 pillars of the 2011 Naples forum on service: S-D logic, network & systems theory and service science", in E. Gummesson, C. Mele, & F. Polese (Eds.), *Service-Dominant Logic, Network & Systems Theory and Service Science* (pp. 5–6), Giannini, Napoli.
- IEEE Computer*, 40 (1), 71-77.
- IfM & IBM. (2008), *Succeeding through service innovation: A service perspective for education, research, business and government*, Cambridge, UK: Institute for Manufacturing (IfM), University of Cambridge. Retrieved from <http://www.ifm.eng.cam.ac.uk/ssme>
- into a Prosperous and Sustainable Future*. Somers, IBM Global Business Services, NY. Available from <ftp://public.dhe.ibm.com/common/ssi/ecm/en/gbe03227usen/GBE03227USEN.PDF>.
- Kash, D. E. & R. W. Rycroft. (2000), "Patterns of innovating complex technologies: A framework for adaptive network strategies", *Research Policy*, 29 (7-8): 819-831.
- Koch, C. (2003), "Innovation networking between stability and political dynamics", *Technovation* 24 (9): 729-739.
- Kooiman, J. (2003), *Governing as governance*, Sage Publication, London.
- Kothandaraman, P., Wilson, D. T. (2001), "The future of competition: Value-creating networks", *Industrial Marketing Management*, 30, 379–389, doi:10.1016/S0019-8501(00)00152-8
- Kotler, P. (1977), *Marketing management: Analysis, planning, implementation, and control*,. Prentice Hall, Upper Saddle River.
- Lovelock, C., & Gummesson, E. (2004), "Whither services marketing? In search of a new paradigm and fresh perspectives", *Journal of Service Research*, 7, 20-41.

- Lusch & S. L. Vargo (Eds.), *Toward a service-dominant logic of marketing: Dialog, debate, and directions* (pp. 333-343), ME Sharpe, Armonk.
- Maglio, P. P., & Spohrer, J. (2008), "Fundamentals of service science", *Journal of the Academy of Marketing Science*, 36(1), 18–20.
- Maglio, P. P., Srinivasan, S., Kreulen, J. T., & Spohrer, J. (2006), "Service systems, service scientists, SSME and innovation", *Communication of the ACM*, 49(7), 81–85.
- Mele, R., Calabrese, M., Troisi, O. (2012), "La comunicazione negli enti locali: tra comunicazione istituzionale e comunicazione politica", *Sinergie Journal, Rivista di studi e ricerche*, n. 89, settembre-dicembre.
- Meneguzzo, M. (1995), "Dal *New Public Management* alla *Public Governance*: il pendolo della ricerca sulla Amministrazione Pubblica", *Azienda Pubblica*, 8(3), 491-510.
- Meneguzzo, M. (2006), "I diversi modelli di Stato e di sistemi pubblici: riflessi sulla gestione dell'azienda pubblica", In M., Meneguzzo, D., Cepiku, & E., Di Filippo (Eds.), *Managerialità, innovazione e governance* (7-16), Aracne, Roma.
- Ng Irene, Maull R., Smith L., (2010), "Embedding the Discipline of Service Science", in Demirkan, Spohrer, Krishna (eds.), *The Science of Service Systems*, Springer Book Series.
- Normann, R. (1991), *La gestione strategica dei servizi*, Etas Libri, Milano.
- O'Reilly T., Battelle J., 2009, "Web Squared: Web 2.0 Five Years On", Special Report, *Web 2.0 Summit*, CoProduced by O'REILLY & Techweb.
- Osborne, S. P., Radnor, Z. & Nasi (2012), "A New Theory for Public Service Management? Toward a (Public) Service-Dominant Approach", *The American Review of Public Administration*, XX(X) 1–24.
- Pellicano M., Ciasullo M.V; Monetta G.; Galvin M.; (2011); "An In-Depth Study Of Public Administrations: The shift from Citizen Relationship Management to Stakeholder Relationship Governance"; in C. Baccarani, A. Brown, A. Caspi, E. F. Rico, J. Martin, M. Cano; *Organizational Excellence in Service*; ISBN 9788890432712;
- Polese, F. (2009), "The influence of networking culture and social relationships on value creation, *Sinergie*, 16, 193-215.
- Polese, F. 2010, "The Influence of Networking Culture and Social Relationships on Value Creation", *Sinergie*, forthcoming.
- Polese, F., Di Nauta, P. (2012), "A viable systems approach to relationship management in S-D logic and service science", *Business Administration Review* (forthcoming).
- Pralhad, C. K., & Ramaswamy, V. (2000), "Co-opting customer competence", *Harvard Business Review*, 78, 79-87.
- Qiu, R. G. (2009), "Computational thinking of service systems: Dynamics and adaptiveness modeling", *Service Science*, 1(1), 42–55. doi:10.1287/serv.1.1.42
- Qiu, RG, Fang, Z., Shen, H., & Yu, M. (2007), "Verso la scienza dei servizi, l'ingegneria e la pratica", *International Journal of Services Operazioni e Informatica*, 2(2), 103-113.
- Ramaswamy, V. & Guillard, F. (2010), *The power of co-creation*, Free Press, New York.
- Ryan, B., Scapens, R., Theobald, M. (2002), *Research Method and Methodology in Finance and Accounting*, Thomson, 2nd ed, London.
- Saviano, M., Di Nauta, P. (2011). "Project Management come una bussola nel complesso processo decisionale contesti. A Sistemi Vitali di approccio.", in D., Caivano, MT, Baldassarre, F., Garcia, M., Benero, E., Mendes, P., Runeson, A., Sislitti, GH, Travassos, e G., Visaggio (a cura di), *12 ° Conferenza internazionale sul prodotto Focused Sviluppo Software e Process Improvement*, ACM Association for Computing Machinery, New York, pp.112- 119.
- Sawyer, R. K. (2005), *Social emergence: Societies as complex systems*, Cambridge, UK: Cambridge University Press.
- Schaffers H., Cordoba M. C., Hongisto P. , Kallai T., Merz C. & van Rensburg J. (2007), "Exploring Business Models for Open Innovation in Rural Living Labs", *Proceedings of the 13th International Conference on Concurrent Enterprising (ICE)*, Sophia-Antipolis, France, 04-06 June, 2007.

- Silverman, D. (2005). *Doing qualitative research*. London: Sage Publications Ltd
- Spohrer, J., Maglio, P. P., Bailey, J., & Gruhl, D. (2007), "Steps toward a science of service systems",
- Spohrer, J., Anderson, L., Pass, N., & Ager, T. (2008), "Service Science and Service Dominant Logic", in *Proceedings of the Otago Forum 2*, (pp. 4-18).
- Troisi, O. (2010), *Il partner relationship management*, in Pellicano M., Ciasullo M.V. (a cura di), *La visione strategica dell'impresa*, Torino, Giappichelli, 2010, ISBN: 9788834814680.
- Ulwick, A. W. (2002), "Turn customer input into innovation", *Harvard Business Review*, 80 (1), 91-97.
- Vargo, S. L., Lusch, R. F. (2008a) "From goods to service(s): Divergences and convergences of logics", *Industrial Marketing Management*, 37(3), 254-259.
- Vargo, S. L., Lusch, R. F. (2008b), "Why "service"?", *Journal of the Academy of Marketing Science*, 36 (1), 25-38.
- Vargo, S. L., Lusch, R. F. (2008c), "Service-dominant logic: continuing the evolution", *Journal of the Academy of Marketing Science*, 36 (1), 1-10.
- Vargo, S., Lusch, R. (2006), "Service-dominant logic. The Service-dominant Logic of Marketing: Dialog", *Debate, and Directions*, 43.
- Vargo, S.L., Maglio, P.P., & Akaka, M.A. (2008), "Sul valore e il valore di co-creazione: A sistemi di servizio e la prospettiva logica di servizio", *European Management Journal*, 26 (3), 145-152.
- Vargo, Stephen F. and Robert F. Lusch, "It's all B2B...and beyond: Toward a systems perspective of the market," *Industrial Marketing Management*, 40 (February 2011), 181-187.
- Von Bertalanffy, L. (1962), *Modern Theories of development: an introduction to theoretical biology*, 1st edition, Harper.
- Von Bertalanffy, L. (1968), *General system theory: Foundations, development, applications*, George Braziller, New York, NY.
- Von Hippel, E. (1994) "Sticky information and the locus of problem solving: implications for innovation", *Management Science*, 40, 4, pp. 429-439.
- Von Hippel, E. (2005), *Democratizing Innovation*, Cambridge, MIT Press.
- Von Hippel, E. (2007). "Horizontal Innovation Networks - by and for Users," *Industrial and Corporate Change*, Vol. 16, No. 2, pp. 293-315.
- Weber, E. P., Khademian, A. M. (2008), "Wicked problems, knowledge challenges, and collaborative capacity builders in network settings", *Public Administration Review*, 68(2), 334-349.
- Yin, R.K. (1994), *Case Study Research*, Sage Publications, 2nd ed, London.
- Yin, R.K. (2003), *Case Study Research: Design and Methods*, Sage Publications, 2nd ed., Thousand Oaks, CA,.