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Storiepossibili (possible stories): Measuring social networks and designing scenarios to address new urban questions

Elena Enrica Giunta, Chiara Galeazzi, Agnese Rebaglio, Giulia Simeone
elena.giunta@polimi.it, chiara.galeazzi@polimi.it, agnese.rebaglio@polimi.it, giulia.simeone@polimi.it
Politecnico di Milano, Dept. of Design. Via Durando 38\a, 20158, Milano, Italy

Abstract
Storiepossibili was developed in a research frame with the aim of identifying a "new urban question"; that is to say, the emergence of new issues and problems of the contemporary urban; among them, social cohesion and sustainable development appear to be at risk and the focus of renewed attention. In such a framework, how can design help decision-makers and innovators to understand such unprecedented questions and react to support the potentiality of the new social settings? *Storiepossibili* is a "research within research" that answers this issue, developed by the Design Department of Politecnico di Milano. The Design discipline has often been used as a key lever in the transformation of urban places to respond to the rising needs of contemporary society. Our cities see the growing demand for places where people can cultivate a sense of wellbeing, share their daily life and get closer to other inhabitants. *Storiepossibili* is an open repository of positive social innovation practices, both in the micro and macro scale: stories of people, organizations and enterprises which trust in the chance of change as something possible, even viral.

Keywords: design for social innovation, Social Network Analysis, scenario building, social trends, decision making.

"All over the world, there is an increasing demand from all sides for more local involvement in the planning and management of the environment. It is widely recognised that this is the only way that people will get the surroundings they want and it is now seen as the best way of ensuring that communities become safer, stronger, wealthier and more sustainable" (Wates, 2010, p. 2). These reasons are the premises of *Storiepossibili*; part of a wider national project ("Post-metropolitan territories"[1]) funded by the Italian Ministry of Education, University and Research (MIUR). *Postmetropoli* research investigates, in a national comparative framework, how metropolitan regions are changing. *Storiepossibili* moved from the mapping of social innovation solutions, as a qualitative survey about the improvement of metropolitan lifestyles and behaviours towards a more sustainable urban metabolism. Indeed, if we take the European Environment Agency model as a reference, where the concept of *urban metabolism* is described, "lifestyles" are considered as fundamental for urban systems. This is described by three scopes: "patterns", as physical and morphologic features of the area; "drivers", planning, management and economy decision-makers; and "lifestyles". To investigate the shapes, the features, the conditions for sustainable lifestyle development in the changing context of the territories means, therefore, to put individual behaviours in relation to the ones of complex and articulate entities, such as urban systems and regions that host them, and to verify mutual effects.

The context is the metropolitan region: a largely urbanised area, where the boundaries between urban and suburban are increasingly frayed, whose structure is increasingly polycentric, whose growth and transformation processes are strongly related to the transformations of our lifestyles, raising new urban questions and reshaping social cohesion (Soja, 2000).

On one hand, recent programming documents look at cities (large urban areas) and medium- and small-sized towns as a resource towards social and territorial cohesion and sustainability (Territorial Agenda 2020, Europe 2020). On the other hand, since 2007, the European Union launched the initiative *Beyond GDP* (Gross Domestic Product) to develop indicators that are as clear as the existing GDP, but more inclusive of progress' environmental and social aspects.

More recently, the concept of the measurement of wellbeing was again developed. Wellbeing indicators are used to "broadly illustrate people's general satisfaction with life or to give a more nuanced picture of "good-life" in relation to their jobs, family balance, health conditions and standards of living" (European Comission, 2007). We recall a few examples, such as the French report of the European Commission

[1] The research project "Post-metropolitan territories as emergent forms of urban space: coping with sustainability, habitability and governance" is a three-year research project funded in the framework of the PRIN programme 'Programmi di ricerca di Interesse Nazionale' (Research Programmes of National Interest). Scientific Coordinator: Professor Alessandro Balducci, Architecture and Urban Studies Dept., Politecnico di Milano.

on the Measurement of Economic Performance and Social Progress in 2009[2]; or the Better Life Initiative[3], launched by the Organisation for Economic Cooperation and Development (OECD). The first Italian Report on the Sustainable Wellness Fair (BES) was published in 2013: the survey, coordinated by ISTAT (Italian National Statistical Institute) and CNEL (Italian National Council of Economy and Labour), promoted a collection of data involving 134 indicators grouped into 12 domains that express an overall sense of wellbeing[4]. The general objective of these operations calls for the identification of policies for improving the quality of the built environment: "The framework for regional and local wellbeing starts with the consideration that making better policies for better lives requires making where people live a better place" (OECD, 2010). Among other initiatives, it is important to note the United Nations working programme *UN Habitat,* whose aim is to focus on the quality of cities: "Its mission is to promote socially and environmentally sustainable human settlements development and the achievement of adequate shelter for all" (UN Habitat, 2012).[5]

New and growing attention to "soft" and subjective values in the development of a framework of living together is observable within the transformational urban environment. The PRIN "Post-metropolitan territories" research project aims, therefore, to explore the new urban forms of contemporary Italy, studying the emergence of new "urban questions" and reflecting upon the capacities of these post-metropolitan territories and urban formations to cope innovatively and appropriately with the challenges produced by occurring transformations.

What makes the city a specific phenomenon that can be distinguished from other forms of social life? Size, density and heterogeneity were the distinctive characteristics of the urban (Wirth, 1938); in addition, the form of the contemporary city is also different from the past, being less dense and less heterogeneous (Dematteis and Lanza, 2011). Not only the size of the city but its nature and identity are becoming profoundly modified: the contemporary city appears, at the same time, fragmented and exploded. At the end of the day, these processes have been interpreted in terms of dispersion of the constituent characteristics of the central city, reproducing in this sense an interpretative model typical of the nineteenth century, opposing the centre to the periphery, concentration to dispersion, homogeneity to heterogeneity, proximity and distance. The same idea of a metropolitan area is – in this sense – still based on the idea of a clearly identifiable relationship between the central city and neighbouring territories and of the central city as an area of influence. Such interpretation has been put into question by a number of authors who proposed, a decade from now, to think in terms of "post-metropolitan" (or "suburban"), looking at the unfolding processes of regional urbanisation.

According to these authors, the relationship between size, density and heterogeneity should be questioned because of the "emergence of a distinctive new urban form, the extensive polynucleated, densely networked, information-intensive and increasingly globalized city region […], to a polycentric network of urban agglomerations, where relatively high density are found throughout the urbanized region" (Soja, 2000, p. 684).

The first year of PRIN Post-metropolitan territories research was dedicated to the construction of an "Atlas of post-metropolitan territories". Seven urban areas were selected, in order to analyse and find the dynamics described in the international literature on urban contemporary processes in Italy. These areas have experienced, in different moments and ways, processes of "metropolization" or are considered – by the recent reform- as "metropolitan areas": Turin, Milan, Venice, Florence, Rome, Naples and Palermo. A huge amount of quantitative data is available on a public Web platform (www.postmetropoli.it) that allows us to immediately map and interact with significant metrics related to each post-metropolitan city/area (including Milan) and, therefore, to grasp the spatial dimension of the evolution.

Among the effects, according to Soja, one can list:

- The disappearance of significant differences in lifestyles between urban and suburban, with the emergence of different (sub) urban ways of life;
- The mixing between forms of urban and suburban;
- The combination of paradoxical forms of decentralisation and re-centralization, tied on the one hand to the expulsion of some urban functions in a periurban context, capable of generating new centres and to shape new geographies in the suburban and vice versa;
- The emergence of a new urban form, that of the polynuclear, densely reticulated and with intensive information.

Storiepossibili

Is it possible to protect and sustain relational networks in complex city-conurbations? How may citizens actively interact with civic rules and services, upgrading them (or part thereof -) to become user friendly? What "new" sorts of *circular economies* might be developed in city centres?

Within this mindset, the DESIS lab[6] and the DHOC research team[7] have been engaged in the wider analytic

[2] In 2008, under the leadership of Sarkozy, the government established a commission which brought together Nobel laureates such as Joseph Stiglitz and Amartya Sen. The goal was to overcome the traditional view of the national accounts, proposing an integrated approach: No more than one number (such as, for example, GDP), but a set of indicators related to more dimensions.

[3] The website http://www.oecdbetterlifeindex.org/ allows one to compare wellbeing across countries, based on the 11 topics the OECD has identified in the areas of material living conditions and quality of life.

[4] The 12 domains of the BES report are health, education, reconciliation of work and family life, economic wellbeing, social relationships, policy and institutions, security, subjective wellbeing, landscape and cultural heritage, environment, research and innovation, and quality of services. Measuring and evaluating progress in Italian society, see Benessere Equo e Sostenibile (BES, n.d.).

[5] Mandated by the UN General Assembly in 1978 to address the issues of urban growth, it is a knowledgeable institution on urban development processes, and understands the aspirations of cities and their residents.

[6] The DESIS laboratory is a specialized unit of researchers dedicated to Social Innovation and Sustainability within the Design Department, Politecnico di Milano. This specific work is developed by the authors of this paper with the supervision of Senior Professors Dr. Anna Meroni and Dr. Luisa Collina.

[7] The DHOC research team (Design Department, PoliMI) focuses on Design for hospitable cities, with a specific interest on the design of public and urban spaces.

process of PRIN *Post-metropolitan territories* with the aim of assessing and describing qualitative patterns, able to illustrate and clarify how –in practice– social dynamics could take place and grow beyond the statistical data. In other words, starting from the "picture" of the Milanese post-metropolitan area as described by the PRIN research, design researchers selected and contacted real-life situations (SME, individual, informal groups of citizens, private services and so on) with the mission to discover and compare some issues and networking practices. The re-appropriation of cities' spaces and the establishment of new connections reveal inherent values in these spaces that are not only functional but an urban sociality manifested through the awakening of a collective creativity and a new demand for wellbeing and happiness. The aim of *Storiepossbili* is to build and envision a scenario of positive trends for future "post-metropolitan" cities, which could recommend the direction to be undertaken by policy-makers first, and then by active and creative citizens as the effective *service thinkers and makers* (Selloni, 2014).

The exploration of sustainable development scenarios has been undertaken through a sequence of phases using inductive methods: starting from a qualitative analysis of the cases, punctually collected in a given area, researchers built an interpretative framework of possible trends. The exploration of social innovation cases has been driven by a set of criteria on environmental and social sustainability (developed by Jegou and Manzini, 2008) and strictly connected with the Atlas indicators, developed by the research group of urban planners. Criteria deal with the topic of sustainability, the social and natural context, social improvement and learning processes. Cases tell stories of social innovation, innovative services and enterprises, reclaiming urban spaces and sharing, thanks to a diffused collective creativity and a new demand of wellness and quality of life.

As previously stated, the aim of the research is to tell stories of possible and promising sustainable lifestyles in the Milanese metropolitan region, the same area explored by the group of urban planners from the Architecture Department. In such a playing field, the designers' challenge was to translate, where possible, the Atlas indicators into true stories of real cases able to confirm or justify the Atlas information.

As the final outcome of the research, the aim of the designers' work was to envision a scenario for a future sustainable metropolitan region. To achieve these two milestones, researchers followed the process shown in the diagram shown in Figure 2.

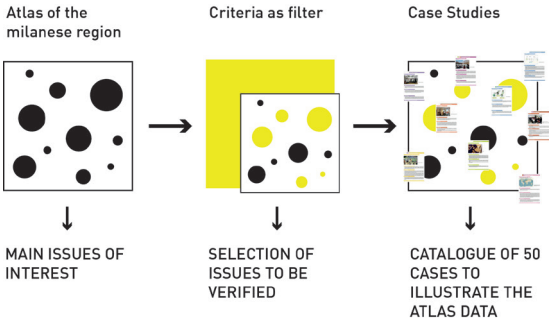

Figure 1. Diagram of the desk research phase as an in-depth analysis of some of the Atlas' specific issues.

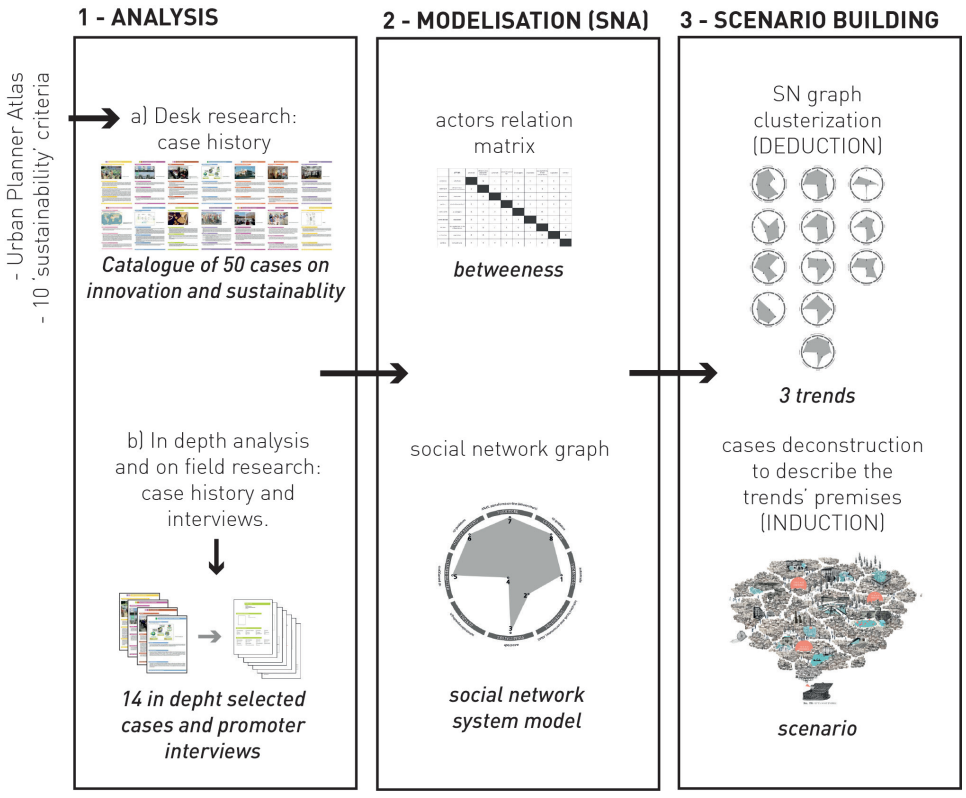

Figure 2. The overall two-year research process plan.

(1a) Analysis – Desk research: Case history

Initially, designers pointed out a set of main issues collected in the Atlas of regions and started to create a range of specific subjects to work on, such as mobility, commuting, living, population migration fluxes, aging, energy, the built environment, working, etc. To guide the interpretation of the Atlas and to define what is "good and sustainable" as a delta for the case selection, a filter made up of 9 criteria on sustainability and innovation was used to look for cases in the region:

- Promoting variety: protecting and developing diversity: biological, socio-cultural and technical. Respecting existing diversity and feeding new ones.
- Optimising the existing (Walker and Giard, 2013): Reducing the need for new products. Empowering the existing before thinking of something new.
- Creating relational contexts (Meroni and Manzini, 2007): Generating situations that facilitate open and positive relationships.
- Proposing aspirational and pleasurable behaviours (Meroni and Manzini, 2007): imagining new lifestyles, being positive about the future.
- Give space to nature: protecting the natural environment, respecting the last natural areas and integrating natural elements into urban environments in an innovative way. Producing food in a natural way and shoring up the agri-food chain. Developing advanced systems to produce organic food.
- Bring people and items closer (SPREAD 2050, 2011): reducing the demand of transportation, developing low intensity transport system, producing and delivering in a fair and sustainable way.
- Empower people (Jegou and Manzini, 2008): Increasing participation and democratising systems. Developing enabling systems to empower people skills and capabilities.
- Developing networks: promoting flexible and decentred organizations, developing responsive systems.
- Zero waste production: promoting industrial ecology forms, closing the material cycle.

As a result, designers built a catalogue of 50 cases from the Milan metropolitan region to fulfil the 9 criteria. At a glance, the catalogue reveals that each case fulfills the main related criterion, and brings some features that also lead to other criteria: the more criteria that could be led, the more the case would be promising and interesting in terms of innovation and sustainability. To view the cases, please visit www.storiepossibili.it

(1b) Analysis – Field research: In-depth analysis of case history and interviews

To better understand the reasons and the ways some cases emerged and flourished, researchers led an in-depth investigation on 12 of the 50 collected cases. This analysis was carried out through face-to-face interviews and on-site visits, that helped researchers to better perceive the context's influence, capture some non-verbal features in terms of personal fulfillment, and to collect comprehensive and high-quality evidence. As in this research, Design often borrows methods and tools from other disciplines, such as social psychology and ethnography. Social psychology helps in understanding the way the communities work in terms of motivation, commitment and participation. Ethnography, then, is useful in organizing the relationship and the understanding of the contexts during connection, observation and interaction activities with people (Wolcott, 1999).

The 12 cases were also selected in order to cover the larger range of urban services families: mobility, health, education, food, working, housing, energy, etc.

For each case, the researcher ran interviews with the promoters according to a six-chapter format that investigate the solution:

- The solution: aims, key innovation and how it works;
- The context: where the solution was conceived and why there, the promoter's motivations, a brief story and innovation of the concept;
- The region: where the solution impacts, the system's actors;
- The target: user(s) profile, territorial proximity, frequency of use, critical mass and the user's number (where applicable);
- Development: potential of development rate (project, start-up, running solution), replicability vs. scalability, ability to impact on public policies
- Management: number of collaborators, business model, management model, annual turnover, users' involvement, collaborator specialization rate.

(2a) Modelisation

At the end of the desk and field research activity, the designers understood the need to organise and normalise the amount of information collected in this phase. The main issue for researchers was to figure out models to compare the 12 in-depth analysed cases in order to address the new "urban questions" from the Milanese metropolitan region: how the region is changing toward sustainability, how and why the region and solution affect each other to flourish, the impact of certain kinds of solutions on a given area, how the solution could be replicated or scaled elsewhere, etc.

To address such an issue, the designers used social network analysis (SNA) by adapting its tools to describe the system of relations of each case.

During the mapping and in-depth analysis phase, regular focus-group and sharing meetings were set up with the other groups involved in the research *Postmetropoli*.

(2b) SNA tool

People and individuals live in more or less complex daily relational structures, ranging from family networks to professional networks, from the community of practice to the learning and interest community. Networks, both in analogical and digital forms, have a significant impact on people's lives and society.

It is arguable that social innovation expresses itself in new forms of relationships and the collaboration of the actors in a social system. We can assume that, within a selected case study of innovative welfare develop-

ment, practices are implied relational models – reticular systems between the different organisations/individuals engaged – actors that can support the structuring processes of virtuous social practices. To describe the specific characteristics of each mapped practice, the research team chose an instrument that is able to "photograph" relational systems and organizational streams where, in order to identify and document possible models, one can scale or replicate it to other systems. The premise is the concept of network, which becomes a category of phenomenological scope: social networking (SN) is formed together by the actors involved in a specific phenomenon and with the peculiar relational dynamics in which they engage. SNA is a tool used in sociological research that introduces a technical view of these kinds of configurations, characterised by qualitative descriptors related to the measurability of sizes, weights and intensity of the relational structure that could be analysed (Salvini, 2007, 2005).

Innovation in welfare policy is now often described in terms of the evolution of relational welfare, in community welfare and alternative forms of capital circulation (including social capital). Recent studies place increasing attention on the relationship between network practices and theories, methods and models in which one tries to study and investigate the potential convergences between the SNA and practices aimed at generating social resources for the whole community. In the *Storiepossibili* project, we have integrated the aforementioned research methodology of qualitative interviews and design services with a specific contribution inspired by the SNA and the assumptions that the SNA proposes.

SNA focuses on data describing the relationship that the person/organisation has with other parties, thus highlighting the importance of assessing the interdependence between the entities and the relevance of the relational structure within the observed phenomenon. For each collected case study, we reconstructed an "adjacency matrix" (inspired by the *motivation matrix*, a typical Service Design tool – Manzini *et al.*, 2004, p. 114-116) that has allowed us to describe the involved actors and to objectify their acting in a series of "Roles". The motivation matrix evolves into a grid of "roles" in which they are compared with each other's, identifying the existence (or the absence) of a relationship (one to one) and even describing its quality. Researchers identified eight *Roles* (promoter, supporter, funder/funding resources, supplier, manager, enabled user, served user, partner) and, moving from them, drew a circular reference diagram (Figure 3).

		promotore	sostenitore	finanziatore	gestore	utente servito	utente abilitato	fornitore	co-fornitore
	ATTORI	stakeholder del progetto Modus Riciclandi	Provincia di Varese	fondi EU (Interreg 2007-13)	AltreMenti aps	cittadini	sistema Scuola	aziende del territorio	rete associazioni del territorio
promotore	stakeholder del progetto *Modus Riciclandi*		offre l'opportunità di essere partner del progetto EU	chiede finanziamenti	Indica gli obiettivi e le strategie da perseguire		offre visibilità alle scuole e relativi esiti connessi alle iniziative parte del progetto	Offre visibilità alle aziende che aderiscono al progetto attraverso i canali istituzionali	Offre visibilità alle associazioni che aderiscono al progetto attraverso i canali istituzionali
sostenitore	Provincia di Varese	Offre visibilità al progetto attraverso i canali istituzionali			favorisce le relazioni tra gli attori e svolta sul fronte istituzionale. Offre sede e copre costi di esercizio.		offre accesso gratuito alla sede ReMIDA e ad alcuni percorsi erogati dal gestore	Offre visibilità alle aziende che aderiscono al progetto attraverso i canali istituzionali	Offre visibilità alle associazioni che aderiscono al progetto attraverso i canali istituzionali
finanziatore	fondi EU (Interreg 2007-13)	Finanzia il progetto			co-finanzia i costi di gestione				
gestore	AltreMenti aps	All'interno della più ampia cornice del progetto, attua lo specifico ReMIDA sul campo.	Eroga e ricevuto a favore del sistema scolastico del territorio provinciale. Fornisce i contenuti per i canali istituzionali	Rende conto delle attività		progetta ed eroga contenuti formazione, laboratori, eventi, consulenza, etc.	progetta ed eroga contenuti formazione, laboratori, eventi, consulenza, etc.	si occupa del ritiro e della catalogazione dei materiali	Co-progettano iniziative
utente servito	cittadini				fruisce delle iniziative gratuite e dei plus (servizi a pagamento)				accedono ai progetti collaterali
utente abilitato	sistema Scuola	Recepisce le linee guida del progetto e ne beneficia			fruisce delle iniziative e della formazione, moltiplicando gli impatti del progetto negli ambiti di pertinenza				accedono ai progetti collaterali
fornitore	aziende del territorio	Aderiscono al progetto			Forniscono scarti di produzione o resti di magazzino				
co-fornitore	rete associazioni del territorio	Aderiscono al progetto			Co-progettano iniziative	articolano l'offerta dei servizi in modalità cooperativa	articolano l'offerta dei servizi in modalità cooperativa		

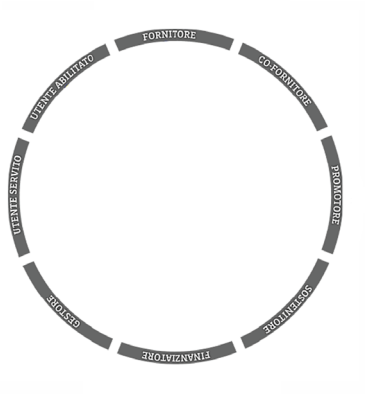

Figure 3. The picture is referred to as an example of a motivation matrix with unique modifications introduced by the research team; on the right, the "clock of Roles", such as the new conceptual framework to visualise – in a graph – the system of relations.

Figure 4. Visual outcome of SNA: example of the "clock of Roles" applied to the *Remida* case study. The illustration shows the three main observed data: statement of network, values of closeness, betweeness impact. See more details at www.storie-possibili.it.

Data were re-arranged in a binary matrix, to be processed with several software dedicated to the development and SNA display. The quantitative and qualitative data, organised in matrices, were represented in the form of graphs, based on "sociogram" studies (Moreno, 1980). *Roles* became nodes on a map of concentric circles, with a position also in the vertical axis and lines that illustrate the relationships (edges) among the *Roles*. The data processing software is enabled to extract different descriptive metrics of one social system; in this analysis, researchers identified two parameters as being particularly representative of the networks: density and centrality, that is, the *betweeness* of *Roles* (the ability of each actor to be numerically dominant in active relational exchanges and as an indicator of "a player" crucial to the system, its mechanism and potential glue, in some cases). On the other hand, density represents the degree of cohesion between the network's roles. While centrality (*betweeness*) indicates the most strategic Subject for the network. Through the *density* observation, it is possible to see how they also distribute other nodes to more actively support the most central player.

Starting from the phenomenological observation of the graphs (related to the most significant 12 case studies), different relational models emerged: each with specific relational features, which implies a different innovation model for the organisation of roles and for the relationships between actors in the same system. The following sorting of the graphs, based on common features, was the ground for the description of 3 polarities to give shape to a new scenario for the next city.

(3) Scenario building

By comparing the graphs with each other, looking at the main actor who is in the centre of the graph and who has the highest number out of all the possible relationships among the actors, and by following a deductive process, three clusters of cases were found and described, moving from the cases' features. Afterwards, these features were generalised through an inductive process to find an overall description of the scenario: an imaginary city comprised of three main "districts" (coming out from the clusterisation), which are the macro-trends towards which the city of the future is headed, and where the cases and the innovation take their place according to the most suitable trend.

Results

As previously stated, the researchers' main goal was to build a scenario to envision a plausibile, good and sustainable future for the metropolitan region, moving from the most promising existing practices.

The clusterisation of the cases, after the SNA, pointed out three typologies of relational models that were as equally considered as the main trends – shortly called *Cities* – for the scenario-building phase. The three *Cities* are not alternative, nor do they describe finite systems; rather, they are a condensation of micro-stories, conditions, and prerequisites that make each of them a coherent canvas of a possible viable and virtuous development:

- the *Systemic city*, the city that activates circular systems to move, work, live, eat, educate, nurture, etc.;
- the *City-as-common*, the city where local institutions are open to innovation and embrace signals coming from the grassroots to transform them into policies;
- the *Pro-active city*, the city where citizens are creative, pro-active and collaborative.

Each *City* is a group of cases that share some common circumstances that make them possible and prosperous in the given context. In other words, the three trends correspond to lists of pre-conditions that are related to the next fields:

- *Funds:* Every innovation needs some kind of funds that should be adequate for the purpose and the scope of the initiative: each solution needs specific funding terms to start up;
- *Market:* The market in the area must welcome innovation: similar initiatives may hinder innovation and the region must show possible market gaps;
- *Local actors:* Local actors, such as Bodies and Institutions, must welcome innovation and collaborate with its promoter(s) for it to result in successful innovation for the region;
- *Promoter:* The promoter(s) is strongly motivated and committed for different reasons depending on the initiative (personal, economic, social, self-fulfilment, institutional, political...). The region has to acknowledge the promoter with his/her own clear role;
- *Infrastructures:* Infrastructures to support the initiative are required in terms of spaces, devices and "soft" tools;
- *Business model:* The business model should be defined at the very beginning of the design phase. It must be inclusive and shared with stakeholders.

The focus is on citizens' behaviours and social attitudes, rather than formalised relational processes. The scenario addresses local decision-makers, designers and citizens to open a debate on how the cities could move towards better regional development.

Such trends are three extreme visions for the future region: they can be activated in different ways, according to the region's specific premises. Planning an area's future, for example through a design-orienting scenario[8] (DOS) (Bertola and Manzini, 2007) could be a useful tool to better understand and envision where the region is heading, moving from the available resources and the inner capabilities of the involved actors.

[8] "The scenario is a description of a future situation within the series of events which can shift from the current state to the desirable horizon" (Godet, 1987, p. 7). The scenario-building activity is traditionally used in disciplinal fields such as *Future Studies* or *Strategic Planning*; particularly useful in an ambiguous context and interacting with a complex stakeholder chain. In the design fields, *Scenario-based-designs* are very effective tools, both for mapping and converging trajectories that are really strong in co-design sessions. DOS could be referred to as a variety of topics and used to market analysis and concept development.

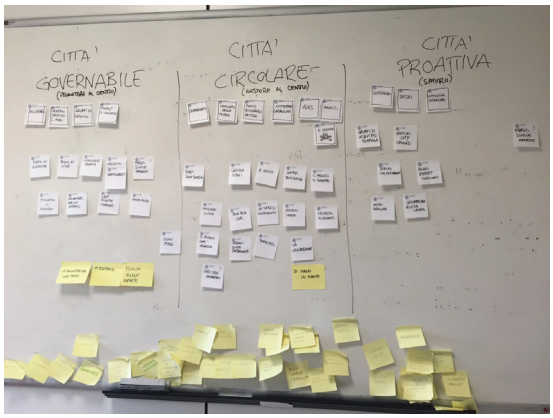

Figure 5. The phenomenological observation of collected case studies highlighted three typologies of relational models that can be considered as three networking "families"/models able to support forms of social innovation and service implementation.

Figure 6. The picture illustrates the complex scenario of the *Storiepossibili* city, a plausible and "desirable" city of the future; it visually includes the three trends that emerged of a proactive city, city-as-common and a systemic city.

Source: illustration by Gaia Cairo.

The scenario's overall structure conceptually consists of three layers:

- Layer 1 – General requirements: those regional and environmental premises which are fundamental to the development of the conditions to set up the three different trends.
- Layer 2 – The three trend descriptions: three different ways, emerging from the three relational models, which give shape to the possible future region. Each trend is described by the region-specific premises, adapted from level 1, and some featuring cases
- Layer 3 – The three trend examples are exemplified by describing the highest featured cases in detail.

In this narrative, the scenario was visualised with its Cities_trends. Illustrations were built through a collage of pictures and keywords inspired by the analysed cases.

The trends' features, related to the mentioned areas, are described in Table 1.

Each case study has been filtered by these parameters (Table 1) to form part of a trend.

Particularly interesting is the comparability of the case studies' relational polygons that belong to the same trend.

It is arguable to state that services in the Systemic City need to have many "Roles" – with similar intensity – engaged in the network, to share ideas and actions; participants are involved in terms of practical sharing (e.g. of things, knowledge or other kinds of "goods") and not really with their values and identities. This is underlined by the graph due to the peripheral position of the nodes (which stand for the corresponding values of *density* for each Role) and is a crucial difference if related to cases in the Pro-active City. In fact, the *Ases* example is a case that is "in the middle" of the trends: the Roles are deeply engaged, as can be seen from the close position of the nodes, and acts more with a cooperative relational attitude.

Not less important, these kinds of relational models clarify the benefit to have a strong manager – as a main player – who is able to maintain cohesion in the network and to balance individualism. This description recalls a more recent definition of platforms that is not only experienced here in the digital world. One can observe another recurrence: the promoter could easily be the "second player" within which to implement or share a service's direction.

Cases associated with the City-as-common are dominated by the Promoter role. Also in this group of relational models, nodes are quite peripheral due to the "light" motivational engagement required. In addition, as opposed to other trends, it is possible to observe that some Roles could be inactive or, in other words, absent in terms of relational dynamics. The *Centro Medico Sant'Agostino* case is this trend's "outsider" and allows for further reflection: its relational system is quite close to a more traditional SME business dynamic in which the Manager directly interacts with Funders and Suppliers. However, in the system, the Promoter and final Users are also present and have "a voice". This could be highlighted as the fundamental difference that potentially opens each system – even the most rigid – to collaborative horizons. *Collaboration* takes shape in a wide range of outcomes, from active-listening practices to the co-delivery of services.

The relational models belonging to the Pro-active City places the Manager in the centre as a dominant figure. He is not a lonely player: the relational game is effective only with an important and deeply participative presence of other Roles such as Suppliers, Promoters and Funders that, in some cases, are also co-deliverers of the service itself. This trend clearly illucidates the significance of the Users' role, in their potential of both a served and enabled presence. One can state that these pictures fulfil the variety of relational models as an expression of *Cooperativism*. High motivation and multiple management[9] are common goals. One critical point emerged in the qualitative survey: These systems are often close to new members and are truly focused on an emic efficacy (generally based on an inner and subjective perspective, even if collective).

[9] Or – anyway – shared governance mechanisms, that are particularly interesting as pictured in the vertical view of SNA models.

Table 1. Main description of the three trends into the scenario, according to distinctive elements.

	Systemic city: the city activates circular systems.	***City-as-common*****:** within the city, local institutions are open to innovation and embrace signals coming from the grassroots to transform them into policies.	***Pro-active city*****:** the city where citizens are creative, pro-active and collaborative.
Funds	Financing bodies, such as institutions and foundations, open calls to fund the start-up of big and onerous initiatives; Promoters invest in the initiative (if no high amount of capital is required).	Promoters, who often coincide with financial bodies, can access high amounts of capital.	Promoters can activate self-funding, crowd-funding, or source external funding.
Market	The region shows the presence of unique social categories whose needs are not fulfilled by existing services (e.g., womens' workplace, work-family aid services); The promoters see and intercept an unexpressed need by potential providers, who lack the ability and the possibility to activate themselves and to be involved in the service provision chain.	The region contains unfulfilled common goods, such as prevention, health, education, energy and food. The region does not offer similar initiatives that are economically affordable to citizens.	Promoters and users feel that there is no response to their personal needs in the area (material, economic, residential, food) and activate themselves to trigger the solution.
Local actors	In the region, there are actors keen to cross and transfer competences to promote the initiative in other sectors. Local Institutions are open to dialogue with the promoters.	Users' territorial proximity. Higher institutions, universities and research centres have good relations with promoters Local bodies and local associations support the promotion of the initiative in the area.	The solution design involves the local community and the public administration from the early stages. There is a strong influence of social promotion and volunteering association in the area. There are different types of actors in the same area (public administration, craftsmen, associations and local networks) that can be partners: this guarantees the initiative's economic and temporal sustainability.
Promoter	Promoters are strongly and personally motivated by social and environmental reasons. Promoters/managers foster the dissemination of the innovation model through training and educational activities for new operators.	The promoter has a clear identity and a strong structure, so as to influence and make the service well recognizable by the users Promoters are highly motivated, mainly due to various economic reasons: direct, when the initiative has a short-term economic impact; indirect, if the initiative provides the basis for future savings and/or a long-term common benefit.	Promoters are driven by a strong interest in research and experimentation; Users are strongly and personally motivated for social and environmental reasons.
Infrastructures	The initiative's prototyping demonstrates and verifies the validity for further development and the recruitment of new actors. The establishment of a formal and legal Stakeholders' Association to encourage the promotion of values.	The area contains underexploited and undervalued, unoptimised and non-operational infrastructures (buildings and public spaces).	Underexploited spaces exist (lands, buildings...).
Business model	The business model reflects ethical values in coherence with the initiative's. Involved actors are inclined to sign alternative contractual forms.	The shortage of resources, besides the presence of underexploited ones, leads to the process' optimisation to maintain low cost in service delivery.	Initiative's non-profit nature as an essential requisite.

Table 2. Case studies cluster, based on the three trends of the future cities.

Most clear case studies	*Zafferanami*: is a local small producer of organic saffron in the northern area of Milan. It bases its model on the short chain and de-intermediation. People working in Zafferanami are equally paid and often use alternative currency to pay workers, such as LETS. *Mercato della Terra (The Earth Market)* is a 0 km farmers' market in Milan and the first market in Milan to bring farmers together in a logic of synergy and sharing of competence and infrastructures. *Modus Riciclandi ReMida:* is a cooperative that gives a second life to industrial waste by producing objects and crafts. *Autostrade carpooling:* is the first and (so far) the only carpooling platform managed by Autostrade s.p.a., the biggest Italian tollways provider and manager. *Feeding the changing city:* is a project that aims to introduce new vegetable species at km 0, suitable for immigrants' diets.	*Fondazioni di Comunità (Foundations of Communities)*: a widespread educational project to fight early school leavers in the northern Milan area (Province of Como). It works on collective impact. *Gruppi di Cammino (Walking groups):* Promoted by local healthcare praesidia, they are free and open groups that organise short walks to prevent certain types of chronic diseases. *Comune di Valnegra*: a 100% green energy town in the Lombardy Alps. *Centro Medico Santagostino (Healthcare centre):* the first private medical centre that can compete with public health in terms of users' economic affordability.	*DESBri*: an "Economy of Support District" in northeast Milan, which is a wide network of people, farmers, producers and craftsmen that support each others' business by reaching agreements on food production and provision. They also manage local purchasing groups and a short chain service for bread production. *Coltivando, the convivial garden at Politecnico di Milano*: a community garden in a public university which is open both to the neighbourhood and to students *Cohousing "La Corte dei Girasoli"*: the first cohousing supported by a local administration (City of Vimercate, MI). People living in the building share certain infrastructures and deliver certain public services to the community in return for the municipality's support.

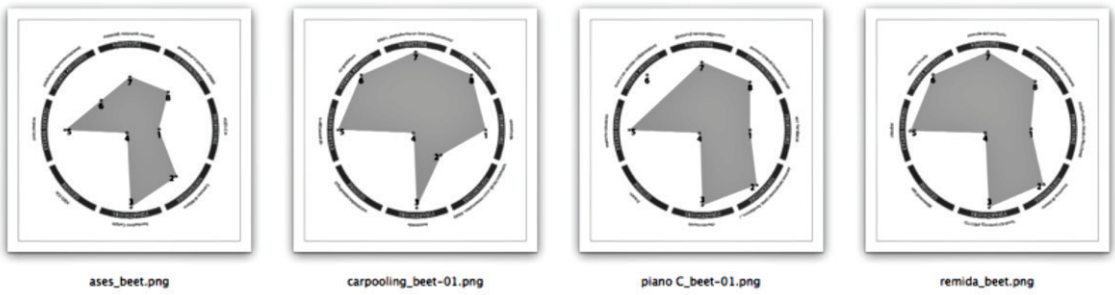

Figure 7. The "clock of Roles" referred to the case studies belonging to TREND1/Systemic city. A key relational attitude of this trend is sharing (e.g. of interaction: platform).

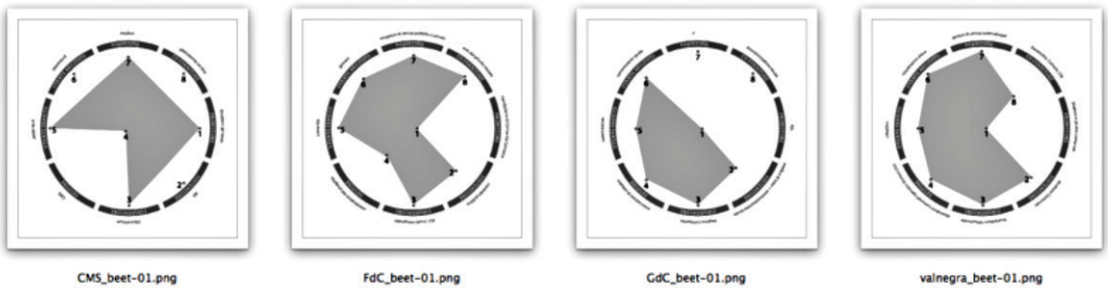

Figure 8. The "clock of Roles" referred to the case studies belonging to TREND2/City-as-common. The key relational attitude of this trend is to collaborate (e.g. of interaction: active listening; Sclavi, 2003) or forms of participative governance.

Figure 9. The "clock of Roles" referred to the case studies belonging to TREND3/Pro-active city. Key relational attitude of this trend is to cooperate (e.g. of interaction: enabling services).

Conclusions

In this analysis, researchers identified eight *Roles* as a generalisation of the functions. This result allows designers to shift real actors playing in different systems, into neutral nodes with unique positions in each network. The description of relations, in terms of *density* and *betweenness* as vectors and numerical values, may help designers to understand systems without losing qualities such as participants' engagement and frequency of presence in the relational exchanges of each system. The choice of SNA tool is a way to compare a diversity of relational situations so as to prove possible recurrences. Conversely, it is possible to rate a critical point such as the possible strong (or even aleatory) operator's discretion in the identification of Roles that may influence the relationship between them in the final graph.

Therefore, this mode allows the picturing of relational systems and the comparability of networking models that are otherwise too distant from each other. It appears to strongly contribute towards directing attention to the relational nature of social practices, helps to describe the evolution –and potential power- of Roles in active playing and the importance of partnerships' innovation, in term of governance, in the complex scenario of relationships between entities in the current welfare revolution (Cottam, 2011). A typical example could be the role that the public administration has to play in the new models and how the public interest is distributed over a larger network of responsibilities involving the private organisation, profit and non-profit, or directly over the city in a less structured form.

The SNA tool gave researchers a series of 12 pictures that stand for a "here-and-now" representation of the 12 networks beyond the selected services. The more central player is the most strategic Role to improve, keeping the system active in terms of relational exchange. The nodes' relative closeness is a sort of motivational rate of the network, that is useful to balance endogenous and exogenous forces and resources.

The variety of pictures should describe, rather than a standard idea of efficacy and efficiency to be reached, the idea of each system's relative functionality that needs to be framed within the right relational interpretation to be driven toward its fruitful, as well as best-growing, perspective.

In these terms, our version of the SNA tool could be applied in evaluation processes concerning collaborative services, contributing to decision-making strategies and policies. The city of the near future will profit from services that engage people, reduce the consumption of goods and promote positive societal values. In line with the results of the *Post-metropolitan territories* research, better inhabitation, participative governance and sustainability will spring from radicating, rather than radical, citizens' behaviours. Based on SNA graph observations, the research team defined the *Storiepossibili* Design-Orienting Scenario with these new attitudes: a horizon of active citizenship with many levels and forms of engagement – moving from a sharing economy and circular systems (as in the *Systemic city:*) applied to energy balancing, and optimisation of fluxes and productions to a massive openness of Institutions (*City-as-common*) able to promote and welcome active citizenship and participatory mechanisms, in general; and, trying to experiment, in different contexts and enterprising markets, by applying cooperative principles (*Pro-active city*).

The use of the SNA tool is twofold: it could be a compass to orient the design process into a specific tendency of development in a changing context, or to shift innovation from one relational background to another, by changing the requirements or premises (e.g., changing the strategic Role or pushing certain actors more towards the middle of the system, engaging them in a new way, and even inviting new stakeholders).

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