



PERGAMON

Available at
www.ComputerScienceWeb.com
POWERED BY SCIENCE @ DIRECT®

Telematics and Informatics 20 (2003) 215–234

TELEMATICS
AND
INFORMATICS

www.elsevier.com/locate/tele

Information communications technology and local development

Mariella Berra

Faculty of Political Science, Civic Networks in Italy, University of Turin, Turin, Italy

Received 12 February 2003; accepted 12 February 2003

Abstract

This paper takes into consideration the existing links between local, economic development and the communications potential embedded in civic networks and local information systems. Through a thorough empirical survey of services (comprising administrative and social care services, possibility of access, IT literacy, discussion forums and equality of access) set up in Italy, and carried out using qualitative and quantitative methods, civic networks have been analysed as a way of improving administrative services and public communication and also as an opportunity to create new forms of communication between citizens, administration, economic actors and non-profit associations. What is highlighted here is how the confrontation and cooperation of social interests may not only improve the potential of local government, but also promote a process of socialization which could lead to the revitalization of declining civil and political participation. In particular, my analysis concerns the experiences of three Italian regions (Piedmont, Emilia Romagna and Lombardy) which offer different models of economic, social and political development. Civic networks, here, have evolved along different lines and served different purposes, determined by social and administrative regional environments.

© 2003 Elsevier Science Ltd. All rights reserved.

Keywords: Civic networks; Local information systems; Local and regional development

1. Introduction

The debate surrounding civics networks and, more generally, local information systems, critically, has involved the themes of democracy and participation, and issues relating to ICT (Information communication technology) literacy and new mechanisms of social inclusion and exclusion.

E-mail address: berra@cisi.unito.it (M. Berra).

Civic networks and local information systems are facilities which through ICT links provide either free or low cost information and communications to residents in certain areas.¹ They create interactive relations between citizens and local administrations, fostering the improvement of local organisations (both public and private), facilitating communications among citizens, between citizens and their public institutions and between all these and the wider world. They can, therefore, have an important impact on regional development models. The civic networks and local information systems studied in my research, embrace local administration at a city level, as well as at the provincial and regional level.

Throughout the long, controversial lead up to the creation of administrative and political decentralisation in Italy, civic networks, or crucially, regionally-based information services, which include provincial and regional networks, must be considered a valid tool in achieving effective decentralisation and, at the same time, in promoting the participation of citizens.

Consequently, themes of participation and of citizenship as well as those relating to models of development (along with the organisation and expression of interests), should be placed within the literature on civic networks and local communications systems. These themes have been the subject of many and important studies both by economists and sociologists in Italy, and include the early projections on districts by Becattini (1990, 1999) the socio-political analysis of Bagnasco (1977), as well as recent studies carried out by A. Pichierri on Regional coalitions, institutions, businesses and know-how, as factors in overriding a purely localised vision of the territory (1997).

Recent research has brought to light how good public administration, i.e. an administration that responds in the best way to the expectations and priorities of the population, is both a determining factor in building political consensus and in reinforcing the bonds citizens with their territory and institutions.²

Territorially-based ICT services or local information systems in their different forms (civic networks, municipal ICT services and provincial and regional networks) enable the setting up of a system with a strong focus on the local objectives, on local norms, and on the supply of relevant local information and services. At the same time, they enable interconnectivity with the regional, national and international levels of governance. From a practical standpoint, the strengthening and functioning of the services offered and the interactions between different social actors promotes a consensus that springs from a shared experience of everyday life, where citizens and institutions interact. The co-ordination of services, the transparency and accessibility of information and the reduction of time required for the processing of procedures does not only improve the quality of the supply of public goods, through a reduction

¹ A. Beamish suggested this definition in a well-known research carried out in the USA and Canada. Her work is available at <http://alberti.mit.edu/arch/4.207/anneb/thesis/toc.html> where she identifies four typologies of civic networks.

² See the Poster survey on the meaning of civil duty edited by I. Diamanti and published in 'Il Sole 24 ore' 8th July 1998.

in social costs, but also strengthens the authority and credibility of the institutions. To some extent, it aids the consolidation of democracy in a specific territory.

Local information systems, especially civic networks, provide the stimulus for public administrations and other public institutions to reorganise. Through these information and communications networks, and also through the reorganisation of local government, the task of responding to the ever-growing and differentiated demands of citizens and diverse publics are made simpler.

At any rate, local information systems do not only have the potential to become a new and effective tool in functional and social reorganisation, but also a modality which profoundly changes the ways of communication among people. Their real innovation is to facilitate interactivity. The employment of ICT (Information and communication technology), for the first time, enables bilateral and multilateral interactive relationships on an equal footing between citizens and institutions. Through the use of communications networks, it is now possible to generate the resources necessary for raising the profile of grassroots organisations and for raising levels of awareness and sensitivity of the decision-making institutions.

As research from North America shows, local information systems offer citizens the opportunity to take action directly. Through reciprocal exchanges between citizens and public institutions, the possibilities for self-expression and participation are vastly increased (Schuler, 1996).

The argument is developed in four sections, as follows:

The first section analyses the innovative qualities of the many local information systems put in place throughout Italy by municipalities, as well as those set up by citizens and voluntary associations.

The second offers an updated overview of cities online and true civic networks in Italy. It is based on empirical research carried out in December 2001.³

The third examines typologies of local information systems, based on empirical research carried out using qualitative methodology on a number of significant regional development projects in Italy (Piedmont, Lombardy and Emilia Romagna).⁴

³ The research on civic networks in Italy lies within a project based on research degree dissertations covering the information processes in public administration and urban development which I coordinate together with Prof. Bruzzone. This research was carried out by Eloisa Testa.

⁴ The research takes into account two national projects financed by the former MURST (Ministry of University of Research and Technology). The first 'Innovazione Tecnologica e Riorganizzazione Sociale: Le Rete Civiche in Italia (Technological Innovation and Social Restructuring) was coordinated nationally by Prof. Magda Talamo, and comprised the Universities of Turin (Mariella Berra, coordinator, S. Casiccia, M. Talamo), that of Parma (M. Baglioni, coordinator, G. Campanini and C. Trufella), of Pavia (N. Addario, coordinator, M. Rampazi and S. Vicari). Alongside these, active contribution was made to this research by L. Guidi and A. Rovinetti, heads of the civic network and communications services of Bologna, and D. Ferretti who analysed the cities of Parma and Emilia Romagna.

The second project: 'Riorganizzazione Sociale Territoriale. Le Reti Civiche in Piemonte' (Social and Regional Restructuring. Civic Networks in Piedmont) analysed the information processes of the social care Consortiums of the Piedmont Region. The work group, coordinated by M. Berra, comprised G. Bruna, F. Ceravolo and D. Valuso.

The fourth offers some reflections that touch on the theme of social and political participation and civic networking.

2. The qualities and functions of civic networks from the local to the global

It has been amply demonstrated how ICT networks promote economic and social globalisation processes by enabling the intensification of social relations irrespective of distance (Castells, 1996). Intense links can be established between distant places while those in one's own backyard can be undermined or reinforced by these connections. Therefore, a place on the network provides a dynamic for regions, municipalities, individuals and businesses, but at the same time increases the level of risk for such actors. On the credit side, civic networks can function as an efficient tool for coordinating local, cultural and economic ventures by helping to project these to other nodes in the network, thus fostering the exchange of resources and knowledge with other networked participants and increasing their visibility. One example of this is the many networks of a tourist nature which have come into being in Italy. The small town of Torre del Greco outside Naples, is one where local administration has set its sights primarily on the promotion of the local coral works to boost foreign sales rather than the transparency of the administrative organisation.

The improvement of services and of communications throughout a territory alongside an outward orientation, aided by ICT, are not however, mutually exclusive objectives. On the contrary, in the current climate of the globalization of markets, resources which were at one time context dependent, are now easily replaceable. Thus, participation in global networks becomes a necessity, and exclusion carries stiff penalties.

Local information systems are also an important tool in the reorganisation of local world-views and a necessary condition for reappraising the nature and value of local resources. They can be a means for boosting a culture which is a product of a particular territory and history, and they can facilitate its promotion to the outside world. ICTs perform a kind of mediation between the local and global and this function is crucial to an understanding of their value to a locality.

What needs to be analysed now is whether they can become a tool for the integration of local community and markets, one capable of facilitating the construction of a network of interactive relations between citizens, local institutions and the outside world.

My hypothesis is that local information systems comprising civic networks, provincial and regional networks, citizens networks and service-provision networks can be considered as structures that combine the immanent qualities of ICT networks and the logic of de-spatialisation, with local needs and identities defined, in part at least, through territory. As actors in their own right a networks are shaped by the relations and identities of those that belong to them.

Local networks are also a means of reconstructing a *particular* form of community, where a sense of belonging, a complex of shared values, a system of social organisation and interdependence, still has territory, or better still, place, as its base,

but where accessibility is the facilitator of interaction rather than (just) spatial proximity. So, civic networks, while focused on local objectives and interests, are also the route onto the huge informational highways of the world.

Yet the area of public administration which is closest to everyday life, is that of territorial local government, and here too there is a marked ambivalence. On the one hand the locality is relativised by the pervading influence of globalization, on the other, it still represents, perhaps now more than ever, the enduring nature of local identity space and the terrain where everyday life is lived out.

It is within this confined area of administration that social, economic and cultural opportunities and change must be promoted, to ensure that meaningful social relations and structures of governance remain the province of territory, of place (Giddens, 1990). For example, local and public, or publicly accessible, civic networks could provide a useful structure for services and social exchange for those who have difficulty accessing private information and communication networks. In rural areas or in small towns, local innovation systems can help to overcome isolation by tapping into resources and services produced elsewhere. In the Italian 'Mezzogiorno', in the absence of a strong industrial fabric and of a flourishing business culture, networks would enable public administration to fulfil an enterprise and promotional role, not only providing connectivity, but acting at a local level as a broad training school in the routine employment of information technology by citizens. Examples of these dynamics are already to be found in Apulia and Sicily and Calabria where the Region is setting up a project of Regional e-government.

Local innovation systems entail new modes of communication between citizens and public administration, where citizens are more active and informed, thus narrowing the gap between citizens and the structures of governance and stimulating their involvement in the resolution of local issues. Efforts to make the town council and other local political institutions accessible through networks marks a shift from a centralised and perceptually distant administration. The application of ICT to public services has been the object of various legislative orders in Italy.

The new model may be likened to an upside down panopticum, not the omnipresent eye that controls but a glass-house where administration is transparent to citizens, and where it accepts scrutiny and more direct interaction with them. Points of access, such as dispersed terminals would realign many social areas for dialogue where bonds between citizens and institutions would be reinforced or even forged anew. The model would not be Big Brother or the electronic eye that records and controls (Lyon, 1994) but the kind of participatory democracy described by Alexis de Tocqueville. In Italy, there have been recent legislative reforms on the right to public access of official information. However, the practical realisation of these rights entails a strong commitment to openness and developed skills for organisational innovation, in a hierarchical system where old privileges and corporate interests are still defended, and where suspicion of change is still pervasive.

If an administration is to be more efficient, it must be more transparent and accessible. Through the introduction of ICT, internal reorganisation is made simpler, even if tensions are created within the bureaucracy. In addition, the processing of bureaucratic procedures is much shortened, which in Italy is estimated at 20 days

saving a year. Effective innovation and the integration of the various local and central administrative services are determining conditions in the consistency and quality of services offered by the different civic networks, and critical in their to citizens.

3. Civic networks in Italy

Real civic networks, i.e. those systems whose operational sphere is the territory of a city or town and which are sponsored by local administration, represent a flourishing and dynamic modality in parts of Italy. Municipalities have played a key role in Italian history. Despite the processes of centralisation of the administrative system which followed the consolidation of the national state and which standardised organisational models for local governance, municipalities have managed to maintain their autonomy and vivacity. Recent laws on the reorganisation of local authorities (142/90), on administrative procedure and the right of access to administrative documents (241/90), prompted the more active local governments to restructure their offices through information technology. They developed an information and communications facility for citizens in order to achieve the prescribed levels of efficiency and transparency laid down in the legislative provision. This is one of the reasons why local administration in Italy has played a more predominant role in promoting community based interactive systems compared to many other countries.

Our research reveals that in December 2001, 1790 cities were online. Those networks offering services ranging from a consistent quantity of information about the administration and citizen services to a discussion forum and the possibility of carrying out some services online were considered civic networks. Networks that listed the existence of a town council and were of a tourist nature or contained only brief information about administrative organisation were conventionally called city nets. Of 1790 cities online only 1197, 66.8%, were considered civic networks.

Unlike the United States and Canada which boast twenty years of experience, in Italy civic networks only started to come into being in late 1994.

In November 1996 there were 95 civic networks. Only 69 of these were operative. In December 2001, 22% of Italian municipalities had a site containing pages of information and an e-mail service.

Through a comparison of the geographic distribution of active civic networks in 1996 and that in 2001 a strong growth in the North was seen, but moreover in the South which lagged behind in 1996 (Table 1). Local information systems and their application may very well, as suggested in chapter 2, constitute an opportunity for the social-economic reappraisal of backward areas.

The general data in Table 2 does not take into account the number of municipalities which are more numerous in the North than in the rest of Italy. Comparing the number of cities online (city nets + civic networks) and of city networks in ratio to the number of councils existing in each of the three geographic areas, a greater frequency is noted in Central Italy. An interesting figure emerges for the North which has a much lower percentage of cities online (18.6) compared to the other two

Table 1
Distribution of civic networks by geographical area—1996

Italy	Civic networks
North	43.4
Center	36.2
South and Islands	18.8
69	100.0

Table 2
Distribution of civic networks by geographical area—2001

Italy	Civic networks
North	56.3
Center	18.7
South and Islands	25.0
1197	100.0

areas, but this difference drops considerably when civic networks are taken into account. They represent 14.8% of the total number of town councils, compared to 15.5% in the Center and 14.1 in the South. Vice versa a consistent number of online cities (26%) per number of municipalities are to be found in the South, i.e. it has a good number of city nets (Table 3).

The following tables offer an overall picture of the distribution of cities online and of civic networks for each Region. Table 4 provides absolute values for the initiatives existing in each region.

A comparison of columns 3 and 5 highlights how the position of each region by distribution of civic networks does not correspond to that of online cities. It brings to light what regions offer regional local information systems with better services. For example Lombardy maintains its position while Piedmont falls to third place.

Table 5 compares cities online and civic networks alongside the number of existing municipalities in each region. From a comparison with Table 4 we see how two important regions in the North West, Lombardy and Piedmont, by number of municipalities, industrial installations economic and financial wealth move to 14th and 17th place respectively for cities online and to 7th and 15th place for the number of civic networks. On the contrary smaller regions such as Tuscany and Emilia Romagna occupy the top positions.

Table 3
Distribution of cities online and civic networks by geographical area and number of municipalities—2001

Italy	% of cities online	Italy	% of civic networks by number of cities
North	18.6	North	14.8
Center	27.2	Center	15.5
South and Islands	26.0	South and Islands	14.1

Table 4

Distribution of cities online and civic networks by Region—2001 (Absolute value)

Regions of Italy	Number of cities online	Position	Number of civic networks	Position
Lombardy	293	1	269	1
Piedmont	168	2	117	3
Veneto	149	3	124	2
Campania	138	4	67	7
Calabria	138	5	55	8
Tuscany	120	6	105	4
Sicilia	105	7	81	5
Latium	105	8	45	10
Emilia Romagna	104	9	75	6
Apulia	82	10	51	9
Marche	56	11	25	13
Abruzzo	54	12	22	15
Liguria	53	13	23	14
Sardinia	52	14	32	12
Friuli Venetia Giulia	48	15	40	11
Basilicata	36	16	13	18
Umbria	33	17	16	17
Molise	25	18	11	19
Trentino Alto Adige	24	19	21	16
Aosta Valley	7	20	5	20
Total	1790		1297	

Table 5

Distribution of cities online and city networks on number municipalities of per Region—2001 (%)

Regions of Italy	% of city online on municipalities	Position	% of civic networks on municipalities	Position
Tuscany	41.8	1	36.6	1
Umbria	35.9	2	17.4	8
Calabria	33.7	3	13.4	9
Apulia	31.8	4	19.8	5
Emilia Romagna	30.5	5	22.0	2
Latium	27.9	6	11.9	11
Basilicata	27.5	7	9.9	13
Sicily	26.9	8	20.8	4
Venetia	25.7	9	21.4	3
Campania	25.0	10	12.2	10
Marche	22.8	11	10.2	12
Liguria	22.6	12	9.8	14
Friuli Venetia Giulia	21.9	13	18.3	6
Lombardy	19.0	14	17.4	7
Molise	18.4	15	8.1	17
Abruzzo	17.7	16	7.2	18
Piedmont	13.9	17	9.7	15
Sardinia	13.8	18	8.5	16
Aosta Valley	9.5	19	6.8	19
Trentino Alto Adige	7.1	20	6.2	20

As far as a comparison between online cities and civic networks, Tuscany maintains top position followed by Emilia Romagna and Veneto. The Southern Region of Calabria moves down from 3rd to 9th position while Sicily moves up from 8th to 4th (Table 5). Two Regions of the North, Lombardy and Friuli Venetia Giulia rise from 14th to 13th and 7th to 6th respectively.

Considering the percentage of cities online, only two Regions in the North (Emilia Romagna and Veneto) are to be found in the first ten places compared to 5 of the South and 3 from Central Italy. As far as civic networks are concerned numbers in the Regions of the North rise to 4, the Center falls to 2 and the South to 4.

If, from the quantitative point of view, the data highlight the blossoming of these initiatives, from the point of view of content, very few sites offer average or high quality services such as discussion forums, the possibility to effect online payments or to monitor the progress of administrative procedures. In supplying online services the South is seen to be behind the North, but most especially to Central Italy. Despite the numerous norms and emphasis put on e-government, public administrations still find great difficulties in adopting bilateral modes of communication with citizens.

Interactivity comprises, in most cases, the provision of an e-mail address for the mayor and offices of the municipality. In the course of this research it was possible to ascertain how the introduction of municipalities on the Web followed similar steps, which can be divided into two stages.

The first entailed the supply of information and the creation of e-mail post boxes. The second provided for the creation of discussion forums and the setting up and provision of interactive services, using an electronic signature and smart cards at the disposal of citizens. While activation of the first stage may not entail any changes in the internal organisation of the local agency, the setting up of the second requires a restructuring of offices and co-ordination between various agencies. This implies public administration's strong commitment to pursuing objectives of bureaucratic reorganisation and internal restructuring of information processes.⁵ Most Italian civic networks as well as local information systems are today to be found in the second stages of this process.

Future development of civic networks and local information systems is closely linked to the integration of services and the setting up of inter-organisational relations between different public and administrative institutions. This is where the challenge lies for public administration. As far as the link between local and central governmental institutions is concerned the AIPA (Autorità per l'Informatica nella Pubblica Amministrazione—Public Administration ICT Authority) should play an important role in achieving a single Public Administration network.

⁵ Organizational analysis interpretations showed the modernity of the concepts of single loop and double loop organizational learning, as described by C. Argyris. See the works of B. Leavitt and J.C. March, *Organizational learning*, *Annual Review of Sociology* 14, 1988; M. Dodgson, *Organizational learning: a review of some literature*. *Organization Studies*, 14, 1993 and the bibliography of further reading in these articles.

4. The reshaping of new local areas. Six typologies of local information systems

The qualitative analysis of actual cases demonstrates that no single model for online cities, villages or regions exists. There are a variety of different actors and projects which overlap and duplicate one another which gives rise to a myriad of forces which shape different forms of inter-institutional co-ordination and of relations with participating citizens and users. I have identified six typologies: three that deal with civic networks and three that deal with modes of Regional and social reorganisation through the application of ICTs where administrative and local political institutions (Municipality, Province and Region) play an important role.

These were examined from the point of view of a social and regional reorganisation of the area. They concern areas of communications and institutional organisation of space. It is a fact that the ways in which different types of communications are structured through civic networks has important consequences for reshaping the identity of an environment and putting its development on a path that spurs actions and synergies in strategic sectors, such as logistical and administrative efficiency, the availability of information to citizens and, potentially, their direct involvement in the political process.

4.1. City wide networks, or in other words, good government through technology

4.1.1. An area shaped from above

The conceptual model which presupposes this typology is that of an inter-institutional network centrally co-ordinated by the Municipality, which tries to involve the decision-makers of social organisation in the achievement of good administration and good government through technology.⁶

An example is the Turin civic network (Turin is the capital of the Piedmont Region). This facility was set up at the end of 1994 in co-operation with the Centro Elaborazione Dati del Comune (The Municipal Information Processing Centre) and the Piedmont CSI (Consortium for Information Development) and merged with a plan for the city's information and communication service. Its creation formed part of a project or re-launch for a city experiencing a significant reduction in its industrial workforce—in this case, the car industry. The project was designed to evaluate the strengths of an urban fabric comprising of both public and private research centres, the University and the 'Politechnic', which specialized in the field of information and of telecommunications sciences. At the same time, it was aimed at overcoming the drawbacks inherent in ineffective administration and in general levels of educational attainment lower than that of other cities in the North and Centre of Italy.

⁶ See M. Berra, *Riorganizzare la Governabilità Locale. Le Reti Civiche a Torino e in Piemonte (Reorganizing Local Government. Civic Networks in Turin and Piedmont)*, in Baglioni and Berra (1999); see also <http://www.comune.torino.it>.

The project was aimed at harnessing the involvement of professional, trade, voluntary associations and schools and universities. The participation of citizen users is managed through associations, and structured in a special way by the professional associations. The latter, to overcome the predicament of the political structures involved including the parties, were assigned the role of mediator between the loci and members of civil society and the institutions of local government. They can therefore act as both intermediate or mediating structures or as an élite which can guide the innovative process and promote its diffusion.

The reasons for the privileged relations with the professional associations can be summarised as follows:

- (1) they boast capabilities that public agencies often do not have. For example, they can fill the role of substitutes and integrators of skills in a the local agency's policy to create decentralised and independent structures in the supply of services to citizens.
- (2) they can fulfil a role of multiplier in the growth of new services and of initiatives;
- (3) their involvement can be a way of creating consensus: as their involvement can facilitate the integration of different organisations in an innovative project;
- (4) they constitute privileged transmission channels of information;
- (5) institutions and professional organisations seem to offer a greater guarantee of stability and continuity compared to spontaneous groups and voluntary associations;
- (6) co-operation can produce positive economic results.

This explains why professional associations, schools, libraries and voluntary associations are treated differently in this network. The first group tends to enjoy preferential treatment in its relationship with the STP (Public telematic service) in terms processing the contents of information and in being the privileged channel of information. Organising the network in this way is in clear contrast with the organisational characteristics of other civic networks found in Bologna, Milan or Rome.

Whilst the level and extent of communications were weak between institutions and non-professional citizens and even now when compared to 1998, the actual amount of direct communications with citizens is limited to a few discussion groups the Turin project is both broad and well designed, resembling a large container where many initiatives and resources can meet. The STT and the civic network offer high quality services. Today alongside the information services in collaboration with the Public Relations Office, and the Single Counter for productive activities, new interactive services have been added, such as the completion of some administrative procedures through the use of a service card, Torino Facile. The Torino Facile site has been assessed by the European Union as one of the best out of 282 European cities which presented an e-government project. The periodical PC MAGAZINE rated the Internet site of the Turin Council as the best site for accessibility of all those set up by civic administration of Italian Regional capitals.

The home page of the Municipality is considered an excellent example of an institutional site, offering the right balance of sharp interface with a wealth of information and a sober and attractive graphic design. The site is easily navigable thanks to an internal search engine that facilitates access to Town Council services and that helps the user to move around the site. However, this model of the civic network has been designed not for the citizen so much as for professional citizenship or members of an association.

The network reproduces a functional model that is not particularly relational with the serious risk that it neither benefits or employs all the communications properties of the civic network. If there is any significance in denominations it is hardly surprising that the management of the project, one of the elements of pride of the incumbent administration of the Left elected in 1993, fell within the charge of the then Municipal Office of Strategic Planning while in Bologna, some towns in Tuscany, (Florence, Prato and Pistoia), and in Lombardy (Desenzano) civic network services were entrusted to the Council Office of Transparency or Communications.

4.2. *Civic network and online community*

4.2.1. *Flexible areas of governance*

These tend to be networks and online communities that bring together the administrative and functional aspects of governance with interactive elements of citizen participation and in doing so attempt to place different institutions and associations on a more equal footing.

An example is the civic network of Bologna, capital of the Emilia Romagna Region.⁷ The Bologna civic network, Iperbole, has been active since January 1995. The policy-maker, the town councillor for transparency and a staff of the town council administration all worked on the development of the project. The project was based on the presupposition that communications of the Local Agency both within (between the different councillors) and outgoing (Public Relations Office) constituted an acquired right of a new democracy featuring accurate information and greater efficiency of public services. The proposal addressed a user who was already partially educated in demanding a direct and more effective relationship with public administration, with whom, however, the vanguard group of the Local Agency was committed to carrying out ongoing sensitisation about the possible ways of using the network.

The civic network has therefore offered citizens, right from the beginning, high quality and valuable services such as the CUP (Centro Unificato per la Prenotazione Ospedaliera—Single Centre for Hospital Bookings), the first experiment of its kind in the healthcare in Italy, management of the public relations office and the single counter for business.

⁷ L. Guidi and A. Rovinetti, *La Rete Civiche Iperbole-Internet. Una Comunità Online in Continua Crescita*, (The Iperbole Civic Internet-Network. Ongoing Growth of an Online Community), in Baglioni and Berra (1999); see also <http://www.comune.bologna.it>.

Within the direct relationship set up with citizens, a further information and communication project has been developed to integrate existing information on the network with direct interaction with Council members. The project 'Democracy online' opens the civic networks up to real interactivity with users now able to receive information and comment on Municipal proposals. In an effort to allow all citizens to participate—and not only town constituencies who have to be consulted by law every document—proposals and plans are summarised and explained in accessible and non-bureaucratic language.

Alongside offering important services such as the activation of electronic certification based on public key infrastructure (PKI), the civic network Iperbole has also made an effort to intensify its role as a public area for the debate of the more important political and administrative issues (as well as creating a space for the posting of suggestions for improving civic administration, local economic viability, and other issues such as, for example, immigration).

4.3. *Citizens online*

4.3.1. *Bottom-up, dispersed citizen networks*

These are mainly grassroots community networks that tend to extend shared values together with the supply of government or local authority services. Citizens and associations are directly involved in the development and promotion of these networks and examples of these type of networks include that of Desenzano sul Garda and that of Milan (RCM). The latter came into being in 1994 through the initiative of the Computer Science Department of the University of Milan.⁸ It closely resembles the freenets to be found in the USA and in Canada. It was actually activated, in the beginning, by voluntary work, and privileged through conference consensus discussion areas while requiring the acceptance of members, who initially signed up and gained access through a private line, of the netiquette. The objective was, and still is, to set up an online discussion community for which starts from the citizens and then confronts the institutions, the parties and the associations. Since 1998, it has been managed by a foundation which includes the Provincial and Regional government. The RCM (Rete civica di Milano) was set up as a civic network for active citizens, but it also tried to develop a stable relation with the municipality, the Province and the Chamber of Commerce. The Milanese civic network provides a lot of information about the services the city offers and is linked up to the municipality, various associations and other profit and non-profit organisations. It has a direct line to the site of the Milan Municipality, which is the chief town in Lombardy, whereas the Municipality does not enjoy the same privilege. Communications with associations and other agencies can only be carried out by e-mail. Discussion areas on the civic network do represent a genuinely interactive service.

⁸ See F. DeCindio, *Reti Civiche e Comunità Online* (Civic Networks and Online Communities), at <http://retecivica.milano.it/paper/rcfio.htm>.

4.4. Regional co-ordination

4.4.1. Co-ordinated networks of administrative decentralisation

These are networks that link the units of local administrations to those of the federal administration. They include regional, provincial and municipal networks. One example is ‘Piemonte in rete’, the Piedmont Region’s site which came into being in 1996 with the aim of increasing the amount of collaboration between the different local governments and central government actors and agencies of the region.⁹ It would be too optimistic to think that a local information network would suffice in unifying them, but undoubtedly it can facilitate communication, help to solidify coalitions and promote the setting up of a single network of Regional Public Administration (RUPAR—Rete Unitaria della Pubblica Amministrazione Regionale).

An example of a successful model is that of Tuscany where local institutions such as the Municipality, Province and Region and an institution of central government, the ‘Prefecture’, have, right from the start, worked to create a viable inter-institutional network. Another example is the civic network of Parma which, from its inception, has operated as an inter-institutional network at the level of the province.¹⁰ This comprises the administration of the province, the ‘Prefect’ Parma Municipality and two mountain communities.¹¹

Interesting and important as these example are they do not possess magical powers and it is well known that on its own a network does not generate administrative innovation. However, the development of networks such as those discussed above can identify the obstacles and therefore highlight the resistance that can hinder innovation and administrative efficiency. The real constraint is the re-planning of administrative systems which involve more than one unit or level of public administration and their willingness to co-operate.

4.5. Network for social and regional development

4.5.1. Areas of social and economic regeneration

There can be a tendency to artificially rebuild a regional and social identity, not in the abstract but founded on concrete needs and interests. Examples of this type of networks include Verbano Cusio Ossola project and the network developed by Chiosco Telematico in Canavese (a province in the Piedmont Region). The former

⁹ <http://www.regione.piemonte.it>.

¹⁰ For further information on the Tuscan network, see the debate surrounding the setting up of the RCU (Single Civic Network) at the site: http://www.rete.toscana.it/contenutie_FDM.

¹¹ See M. Baglioni, *Le Reti Civiche e lo Sviluppo Socio-economico. Le Variabili in Gioco*, (Civic Networks and Socio-economic Development. The Variables at Stake) and D. Ferretti, *Gli enti Local Come Soggetti Promotori e Realizzatori Della Rete Civiche: l'esperienza dell'Emilia Romagna* (Local Agencies as Promoters and Creators of the Civic Network: the Emilia Romagna Experience), in Baglioni and Berra (1999).

project was designed to make communications easier and of increasing the frequency of exchanges over a territorially scattered area with little political cohesion.¹² The latter's development aimed at regenerating an area which had experienced industrial decline—and to regroup different and old professional skills—through the re-organisation of service provision.

The Chiosco Telematico del Canavese, was set up in 1995 by the Consorzio per il Distretto Tecnologico del Canavese (Consortium for the Technological District of the Canavese), the Ivrea Municipality, the Province of Turin and the Piedmont Region. This network attempted to bring together all the local agencies and peripheral state institutions in the Canavese area through greater information and communications interconnectivity. The Canavese, with its 230,000 inhabitants and 110 Municipalities, makes up a third of the Turin Province and promotes real time exchanges through networked ICTs to overcome the impact of the time-spatial distances that separate these constituent elements of the region.

Furthermore, it was hoped that the co-operation among the Municipalities fostered through the shared aim of supplying high quality public services to the people from the Canavese would act as a first step in the rebuilding of a network of social relations and in turn would enhance social cohesion in an area that had experienced a fragmentation of social identities and community cohesion after the closure of the region's computer industry, Olivetti.

4.6. *Networks for social inclusion*

4.6.1. *Area for re-won and re-balanced equality*

These networks aim at re-building communities that may have experienced social and economic fragmentation and at lessening social exclusion: the objective is to bring together elements of reproduction with those of production. Examples of this comprise the organisation networks of social care, which report to local public institutions. Through the application of ICTs, they can really share resources and opportunities more equally and uniformly throughout the area and, subsequently lessen discontinuities and differences in the management of services. A necessary condition for this is an extension of access, in the knowledge that the difficulties and the objective is not equality but a re-balancing of the area.

A useful example of this kind of network is provided by the development of the information services of the Piedmont Region's social care services.¹³ My research limited its scope to the management agencies of the social care services operating in the Piedmont region, which include various Consortiums, the Local Health Care Agencies, the mountain communities and individual Municipalities. The starting point for the process of setting up information and communication services over this

¹² M. Berra, *Riorganizzare la Governabilità...* in Baglioni and Berra (1999).

¹³ M. Berra (ed.) *Reti Telematiche e Riorganizzazione Social and Territoriale: il Caso Piemonte* (Information Communications Technology and Social and Territorial Restructuring: The Piedmont Case), Centro Stampa Regione Piemonte, Turin, 2001.

regional territory was the funding, back in 1995, put forward by the SISA, the office of the Piedmont Region which co-ordinates Information Systems for social care services.

In March 2000, there were 62 consortiums in Piedmont. Although funding had been requested by 38 only 25 had set up and activated the project. The remaining 13 had not and had put the project on hold. Results highlighted how initiatives which offered greater interactive services, such as the building of networks, did not appear to concern those management agencies covering a large catchment areas or those that were geographically central to urban realities. Furthermore, the level of funding areas received was not a determining factor in terms of the levels of information technology and interconnectivity.

The objective of the research, which can be called an action research project, focused on whether the connection to a single regional or inter-regional network could facilitate the processes of upgrading the organisation and if a link-up with other systems in the Region could make a contribution to improving the quality of the internal service supply. The capacity to use information technology tools did really help communities situated at a distance from the chief towns of the province to overcome their isolation and difficulties linked to scattered territories. A symbolic example is that of the small 'Consorzio dell'Alta Valle Tanaro' which used its funding to set up a civic network that helped it overcome its isolation and to link up with other places. Moreover it offered the urge to some organisations with creative leaders to develop services and innovative activities that combined care and work.

The more general operative aim was that of promoting the insertion of social care in a policy of economic development. This was seen within the boundaries of an economic model of solidarity. This natural environment for the application of the economic solidarity project was in the work of the management agencies of the social care consortiums, which were the managers of care projects in the Piedmontese region, which in turn, enacted a policy of social services that integrated the three steps of organisation or bureaucracy, of the agency and of relations and with society.

An example of this is projects that endeavour to bring together social and technology networks to benefit the disadvantaged in the move from care to employment. These were not just cases of achievement but examples, which through the employment information processing, developed strategies of organisation of services and of social work that often went beyond the field of mere care. Some projects where the disabled found places in the workforce are particularly interesting.

The process of developing information technology in public care services across the region, therefore, can be seen not only as a means of better organising and distributing resources but also of developing the skills of operators and users in using then and managing them. The development of skills in employing resources entails a new role of the social workers and a special use of new technologies not only as a supplier of knowledge but also as an integrator of know-how. It entails therefore, more efficient methods of collection and construction of information and the growth of interactive and communicative activities.

5. Some reflections

This above discussion has been a fairly wide-ranging one and has drawn on a number of examples and I wish to conclude this article with a series of reflections on some of the central issues and contexts that should inform discussions and analysis of networks, ICTs and local development.

1. First and foremost the discussion, analysis and evaluation of 'local information systems should not be accompanied by the apriori assumption that all it takes to regenerate a region's administrative and social system is the introduction of ICT led technical and organisational innovation. The systems where better organisation is found are where substantial changes in social life have come about in any case. In other words, where organisational models were already present in administrative and social systems, forms of association and citizens' communications networks work better (see paragraphs 3 and 4). Nevertheless, new technologies can promote a renewal in public administration, can spur enterprising forms of co-operation and competition between sectors and offices and can even stimulate social aggregation through the facilitation of negotiation processes.
2. The way in which technology is actually applied and used is not negligible.
Two political scientists from the University of Irvine, California, Guthrie and Dutton, (Guthrie and Dutton, 1992) who analysed four of these realities in South California, compare the planning and adoption of a community information system to a policy on participation. In this case, politics as policy is incorporated in the technology instead of in a law or in a regulation. Consequently the choice of technology regarding tools, techniques, organisation of people and their activation has an impact on the operativeness of the initiatives. This is especially true for a system's capacity (memory and number of users) and accessibility (number of public terminals and costs of private ones) which are considered by the two scholars the principal choices in technology policy. It is the use and the impact that affect the intensity, extension and quality of participation.
3. Despite the expansion of ICTs research highlights how the setting up of an information process is not easy. It requires time, personnel training, the need of outside consultants, personal commitment and creative leadership. The process of introducing new technologies is costly and not without pain; its widespread application and use generates resistance within some. The difficulties, times, organisational and cultural effort often increase with the shift from the supply of information services to the supply of higher quality services, based on communications relations.
4. A good information and communication service is determined by the achievement of three objectives:
 - a) Serviceability: organisational competence and efficiency.
 - b) Interactivity: effective communications.
 - c) Inter-organisational relations: e.g. the partnerships between different actors and institutions.

The interactivity of network relations, facilitated, for example by tele-conferencing and e-mail services, promote active participation processes. The choice itself of the new services to be supplied, if not at an initial stage, is not the task only of those who manage the networks, but can be continuously enhanced by the exchange and reciprocal communication between users, as has been highlighted in the introduction to this paper and in the example of the Bologna civic network discussed above.

5. The heterogeneity of different organisations in any one single regional context is not necessarily a drawback and can represent a positive advantage.

Networks can bring distant places and resources closer together promoting learning and competitive mechanisms. There is no longer any obstacle to the importing of resources, especially intangible resources, such as knowledge, know-how, skills and information thanks to ICT.

6. Role of creative leadership.

The role played by creative organisers is of primary importance. It requires leaders who are gifted in the skills of enterprise, motivation and planning, who can negotiate the different methods and practices of the countless municipalities and agencies potentially involved in the networks. Leaders also need to be able to promote the development of new undertakings and the development of co-operative strategies. Emblematic examples were the roles played, in the beginning, by the councillors of the Turin and Bologna municipalities, and computer science professors in the setting up of the Milanese civic network.

This is confirmed by the analysis of the response to the achievement or to the lack of achievement or the shelving of the plans for IT processing of social care services. If the role of leadership was important in the promotion of the project, the role of indifference and lack of knowledge of IT tools was equally so in those cases where projects were abandoned or were not achieved.

7. The functions of civic networks and community networks are not independent of each other as it is the combination of the both networks that provides the real qualitative and quantitative difference in the use of the network and in the development of services. A case in point is Turin where difficulties in both reaching and involving citizens has been experienced. A solution to this drawback, not only for the Torinese case but for all civic networks, could be the harnessing of a framework of co-operation between the public, private and non-profit sectors.

The issue does not really depend on whether the inception model used for civic networks is top down or bottom up, but more on how relations between the different social actors are framed and how the latter interact throughout the region and how citizens users become involved in the interactive process.

In Milan the initial absence and then late involvement of the municipal political institution hindered the creation of the co-ordination needed between public and various private institutions for an efficient functioning of the network. For example, as recently as two years ago, Milan, the financial pulse of the country, lacked, in the important fields of economy and labour, a co-ordinated project. The network that offered information about work demands was that of the Chamber of Commerce, which did not communicate with the RCM, the bottom up network.

8. The conjunction of social communications and development entails overcoming, on the one hand, a prevalently economic-instrumental vision of access and, on the other, a purely relational socio-centric idea.

If the economic scope is detached from the social sphere ‘lock-out’ mechanisms increase. The orientation to predominately address the market, the divide between production and everyday life threatens to marginalise the service networks. For that it is of primary importance that the social service networks move from a policy of welfare to a policy of workfare, using for example the technological network for including minorities in the workforce.

9. The setting up of civic networks and local information systems facilitates the shift from an administration of government to an administration of governance.

Governance is based on more horizontal and flexible forms of co-ordination and ICTs offer an opportunity to bring organisations and citizens closer together, enhancing and facilitating communication and to reorganisation.¹⁴

If we examine a sphere of local governance, for example a city, we see a set of actors comprising local institutions, businesses, associations and citizens all playing their part, and who make up the cast of those actors necessary for bringing about innovative processes and new partnerships for the advance of public policies.

The networks must necessarily have the capabilities to mobilise these actors, all of whom play different roles in local governance. Contemplating a change only of institutional mechanisms of transformation is pointless. The crucial moment is when the initiatives of citizens (which are an indispensable condition) encounter what the institutions supply, in the form of intangible infrastructures and information services run by local governments (see types of networks above). These are the necessary conditions if the networks are to promote the development of collective, social capital and fulfil the role, in other words, of an available productive resource.

To conclude, the setting up of systems of inter-institutional networks constitutes a platform for facilitating exchange between social actors operating in any given region. Through these, the promotion of change involving all the agencies in any region, irrespective of their technological capacities, becomes possible. Within the context of a RCU (Single Civic Network), the smaller agencies would be able to tap resources that would otherwise be unprocurable. In a co-ordinated and integrated project, the autonomy of local agencies could acquire a new invaluable role, not as a duplication of services or structures found elsewhere but as an awareness that in a wider system of inter-dependence each local reality must learn to build an autonomous and particular role that enables economic and social actors to identify with it, to actively participate in the changes taking place and to interact with other contexts through the reciprocal exchange of social, economic and cultural resources. Integration, therefore, does not entail a trend towards uniformity, but provides an open

¹⁴ I refer to the definition of governance stated by March and Olsen. For these authors the role of governance is that of easing the identification, employment and consolidation of important skills within a given a system of political institutions.

arena where independence and relations, competition and co-operation, autonomy and networking intertwine in a positive sum of their parts.

The flexibility of ICT networks allows for progressive adjustments to diverse needs and regional realities. Moreover, the quality and contents of civic networks enable the creation of a system of communication that is both cohesive and broad enough to provide areas of expression and interaction for the widest spectrum of social interests. Harnessing civic networks and co-operating in their co-ordination, with great commitment and over time, will promote the growth of a social participation based on a relation of trust, and which brings together citizenship and community, good administration, interests and personal relations (Luhmann, 1988; Blau, 1964, 1982). A concept of participation that goes beyond that envisaged by Tocqueville, but which is being built in everyday dealings and in interaction with and among citizens.

References

- Baglioni, M., Berra, M. (Eds.), 1999. *Reti Civiche. Comunicazione e Sviluppo Locale in Tre Casi Regionali (Civic Networks. Communications and Development in Three Regional Cases)*. Rubbettino, Soveria Mannelli.
- Bagnasco, A., 1977. *Le tre Italie, La Problematica Territoriale Dello Sviluppo Italiano*. Il Mulino, Bologna.
- Becattini, G., 1990. The Marshallian industrial districts as a socioeconomic notion. In: Park, P. et al. (Eds.), *Industrial Districts and Interfirm Co-operation in Italy*. ILO, Geneva.
- Blau, P., 1964. *Exchange and Power in Social Life*. Wiley, New York.
- Blau, P., 1982. Structural sociology and network analysis: an overview. In: Marsden, P.V., Lin, N. (Eds.), *Social Structure and Network Analysis*. Sage, Beverly Hills.
- Castells, M., 1996. *The Rise of Network Society. The Information Age: Economy, Society and Culture*. Blackwell, London.
- Giddens, A., 1990. *The Consequences of Modernity*. Polity Press, Cambridge.
- Gutrhie, K., Dutton, W., 1992. The politics of citizen access technology: the development of public information utilities in four cities. *Policy Studies Journal* 20, 574–597.
- Luhmann, N., 1988. *Familiarity, Confidence Trust: Problems and Alternatives*.
- Lyon, D., 1994. *The Electronic Eye: The Rise of Surveillance*. Polity Press, Cambridge, UK.
- Schuler, D., 1996. *New Community Networks: Wired for Changes*. Addison, Wesley.