

EXECUTIVE SUMMARY

**BENCHMARKING EMILIA-ROMAGNA REGION ON INFORMATION SOCIETY**

The Emilia-Romagna Region has launched in 2002 its Regional Telecommunication Plan, promoting an investment of more than 100 Me over the next 4 years.

Such an investment asks for adequate monitoring and evaluation tools. The most relevant and original is the adoption at the regional level of benchmarking activities, based primarily on "Benchmarking eEurope"¹.

The purpose is to establish a set of regional e-indicators to measure evolution within the regional territory, with other EU countries and regions.

These indicators for 2003 are

- e-government
- Broadband infrastructure
- Citizens' access to and use of the Internet
- Number of Public Internet Access Points
- Number of on line computers in schools for teaching purposes
- Connection of research centres and universities
- Number of students concluding successfully higher education diplomas on ICT
- Enterprises' access to and use of ICTs
- Size of ICT sector

These indicators are consistent with "benchmarking eEurope", with the addition of broadband infrastructure.

Unfortunately though, eEurope indicators are available only at the national level. Therefore, the Emilia-Romagna Region has promoted a network of EU regions willing to cooperate by exchanging data and methodologies, and define in the medium term common indicators.

¹ See http://europa.eu.int/information_society/europe/benchmarking/index_en.htm

This reports focuses on two indicators:

- ▶ e-government / on line public services
- ▶ broadband infrastructure

Over the following months further reports will be published to cover other indicators.

E-GOVERNMENT / ON LINE PUBLIC SERVICES

The research focused on 4 major criteria:

- the on line presence of local public administration of Emilia-Romagna (data comparable with the national average)
- the quality of on line public sector communication, that is the wealth of information available and quality of presentation, via a set of 60 variables (data comparable with the national average)
- the accessibility of public websites
- the level of interactivity of 18 on line basic public services (data comparable with EU countries), using the 4-step approach of eEurope (information,

Each criterion is analyzed according to a set of specific indicators.

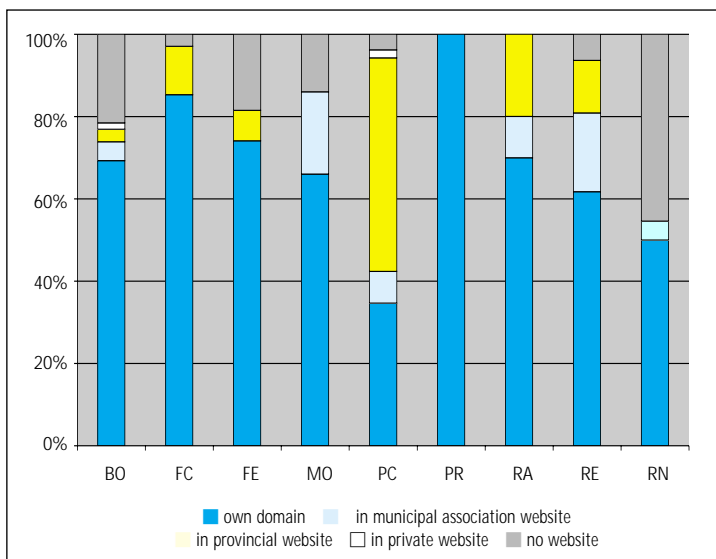
Overall, we took into account 434 public bodies: Regional, provincial and local government, health agencies, public utilities, chambers of commerce. 70 % had a website with own domain, and another 20 % was present on the web with pages on another domain.

That means that 90% of public bodies have an online presence available for citizens. The Emilia-Romagna region has an on line presence substantially higher than the national average

As the Censis 2002 national research has shown, in Italy almost every big municipality and province have a website with own domain, as it is the case in Emilia-Romagna. Among other municipalities, bigger than 5000 inhabitants, 78.9% are on line, 13 points more than the national average. Only 53,3% of municipalities with less than 5000 inh. has a website with its own domain (no national data available).

Every municipality with more than 20000 inh. has a website with own domain, where many smaller municipalities use other domains (33,3 % of munic. With less than 5000 inh.). There is a digital divide between smaller and bigger municipalities, which have more in-house resources.

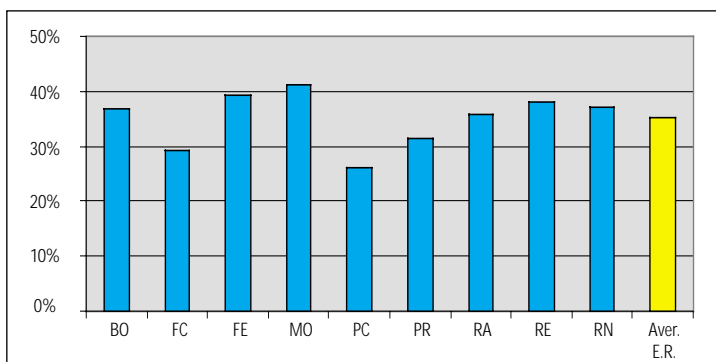
Different provinces show substantial differences: the province of Rimini features the highest percentage of municipalities without a website (50%), where Parma features all municipalities with own domain. Two thirds of municipalities in the province of Piacenza have website on other domain, where Bologna has the highest number of municipalities without a website.



Typology of municipalities' website per province

QUALITY OF ON LINE PUBLIC SECTOR COMMUNICATION

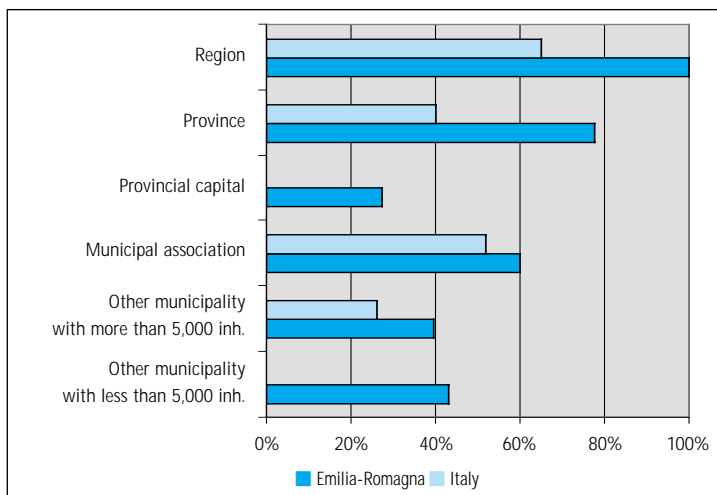
When we consider the quality of public communication, the average level is fairly good. Some areas score particularly well, such as the provinces of Bologna, Ferrara, Modena, Reggio Emilia and Rimini, although Bologna and Rimini have a much smaller percentage of on-line municipalities. In these areas, the quality of public communication appears very good but unevenly distributed on the region.



Average quality of public website per province

When we analyze the data according to the size of municipalities, we have yet another confirmation regarding the divide between smaller and larger municipalities. Municipalities larger than 5000 inh. score on average 50% better than smaller municipalities. The results is even more striking when we consider the 10 provincial capital cities, which have the best websites of the region with an average of 65,64%. From this analysis of public sector we can how results are remarkably better than the national average.

Results are very positive when we consider the presence of the public sector and the quality of public communication. Regional public website seem to pay a lot of attention in promoting the dialogue among citizens and between citizens and public officials, (e.g. e-democracy tools, surveys, newsletter), and in using the web to attract investments and tourism. Also the websites are rich in providing useful information to citizens. As an example, Emilia-Romagna public website are far keener than the Italian average public administration to put on-line their decisions and acts.



% of bodies publishing on line own decisions and acts

Major weak points are in the divide between small and large administrations, and in particular the small municipalities located in mountain area. Both in terms of presence and quality, smaller municipalities are far behind, although in a better situation than the average Italian small municipality. Some provincial areas the divide has been reduced by a proactive political initiative, but broadly speaking we can see a scattered development where many large (but sometimes small) excellent cases there are far less advanced situations.

Speaking about type of local authority, associations of municipalities (Comunità Montane) often show the same problems of small municipalities, where Provinces emerge for their excellent quality level, far better than the national average.

BOOKMARK: SMALL IS BEAUTIFUL

It is worthwhile to list several best practice cases of small municipalities (under 5,000 and under 20,000 inh.), which show particularly good results

Municipalities smaller than 5,000 inh. with average quality better than 40%

- Campegine (RE)
- Castellarano (RE)
- Civitella di Romagna (FC)
- Marano sul Panaro (MO)
- Monchio delle Corti (PR)
- Rolo (RE)
- San Prospero (MO)
- Santa Sofia (FC)
- Trecasali (PR)
- Vezzano sul Crostolo (RE)

Municipalities smaller than 20,000 inh. with average quality better than 50%

- Argelato (BO)
- Berra (FE)
- Cadelbosco di Sopra (RE)
- Campogalliano (MO)
- Codigoro (FE)
- Collecchio (PR)
- Colorno (PR)
- Granarolo dell'Emilia (BO)
- Langhirano (PR)
- Meldola (FC)
- Podenzano (PC)
- Sasso Marconi (BO)

PUBLIC WEBSITES' ACCESSIBILITY

The research has been carried out taking into account 365 public websites, but only 310 could be analyzed, because the others were not existing or in building. Only 6 of 310 websites exposed the WAI conformance logo.

In particular:

Conformance level	Number of websites	% over total websites
W3C WAI - A WCAG 1.0	5	1,6%
W3C WAI - AA WCAG 1.0	0	0%
W3C WAI - AAA WCAG 1.0	1	0,3%
Totale	6	1,9%

The five website A-compliant are

1. Province of Piacenza
2. Municipality of Carpi (MO)
3. Municipality of Fiorano Modenese (MO)
4. Municipality of Formigine (MO)
5. Municipality of Modena

The only AAA-compliant website is the one of the Emilia-Romagna Region.

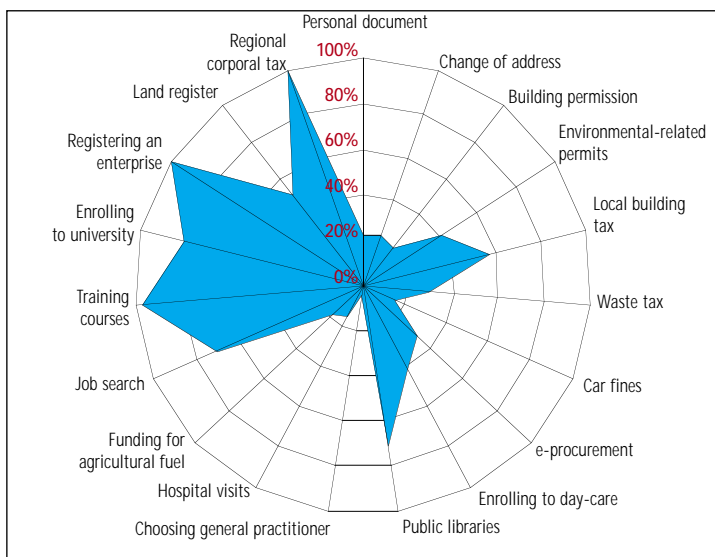
As we can see there is still lots to do in the region to be compliant with the basic accessibility level of websites. Less than 2% of public websites self-certify themselves as WAI compliant. Most of these websites are municipalities in the province of Modena.

Some other websites are keen to be accessible although they do not conform 100%. Only one homepage is accessible and does not expose the WAI logo.

The analysis has shown that accessibility is far from being achieved in nearly every public websites, and that accessibility must be a clear stated objective to be attainable, because it never happens by accident or by simple good will.

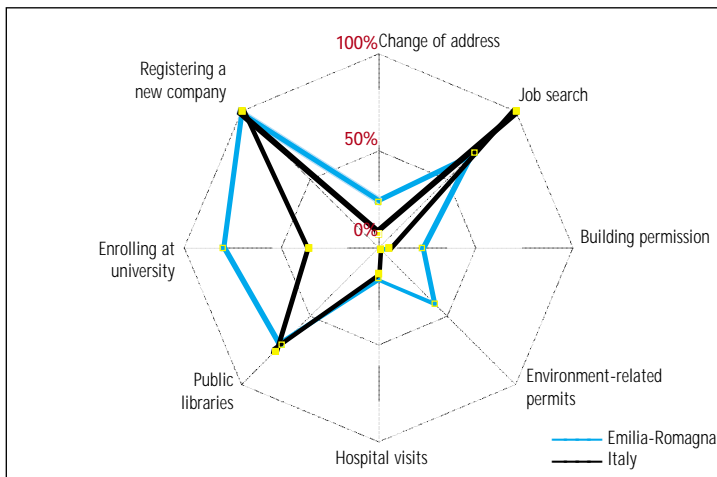
INTERACTIVITY OF PUBLIC SERVICES

There are many public services, which are already interactive in Emilia-Romagna. Most of them are those managed by higher institutional level, such as the Region or the Provinces or other bodies of “provincial” size. In particular, registering a new company, paying regional taxes for enterprises, consulting training courses, job search, enrolling in university, public libraries. Also, it is quite common for municipalities to let citizens pay local building tax on line.



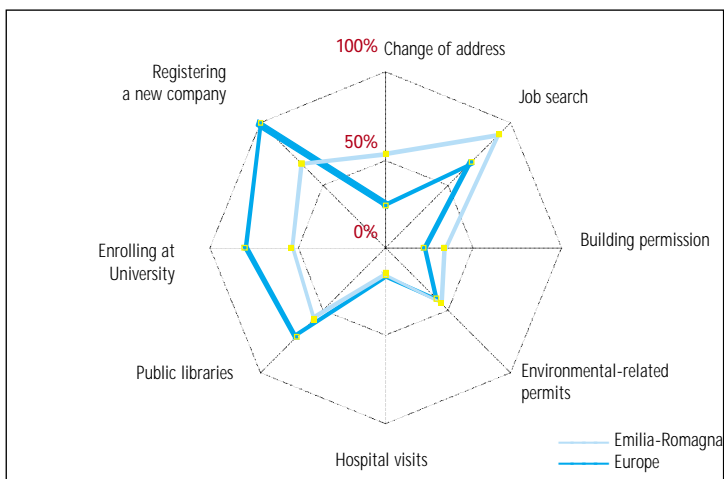
Average interactivity of public services in Emilia-Romagna

When we compare these results with the national and EU average, we can see that generally the regional situation is better than the Italian, and often even better than the EU average.



Interactivity of public services in Emilia-Romagna and Italy

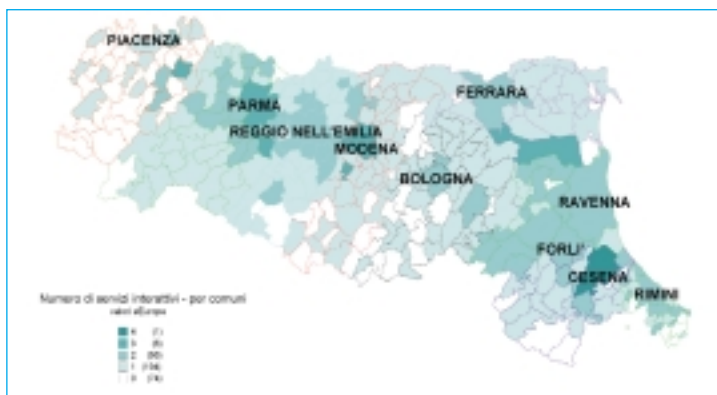
In particular, on local services such as change of address, permits and authorizations to companies, building permission, enrolling in university, the regional institutions performs far better than the Italian average. On public libraries, registering a new company, enrolling in university, the region is above the EU average. On the contrary, it is less interactive than the EU average on change of address, job search and building permission.



Interactivity of public services in Emilia-Romagna and Europe

When we consider the territorial distribution of results, we can see that the large majority of local municipalities (78%) deliver at least one interactive service (level 3) to their citizens.

There is a concentration on the via Emilia, diffusing to surrounding areas. However, interactive services reach even most remote areas. The few municipalities without e-government are especially in the Piacenza, Modena and Bologna provinces.



Number of interactive services per municipality (stage 3-4)

Overall, we can say that Emilia-Romagna situation is largely positive: it seems to be at the forefront of Europe and even more of Italy in delivering interactive services to citizens. Even more striking is the geographical balance of e-government development. Quite an important role in this case is played by service providers, such as provinces, utilities, public consortia.

In absolute terms however, much work is still to be done. With a little editorial effort, simple but important information could be made available to citizens and companies. Several factors of digital divide emerge. Mountain areas on average perform half the level of plain areas; small villages (under 5.000 inh.) perform 4 times less than biggest towns (more than 50.000 inh.). Finally, some provinces such as Piacenza, partially because of geographic conformation, perform 5,5 times less than best performing provinces (Ravenna).

Other analysis show that already today, more than 80% of citizens and companies in Emilia-Romagna can enroll at university and pay the fee, consult public libraries catalogues and make reservations, consult databases of training courses, pay the regional company tax, register a new company.

Every research opens more questions than it answers to. Which services are really priorities for users? Do citizens use on line service? What is the perfect public service? Some of these questions will be answered to in further research within this benchmarking project.

BROAD BAND AVAILABILITY IN EMILIA-ROMAGNA

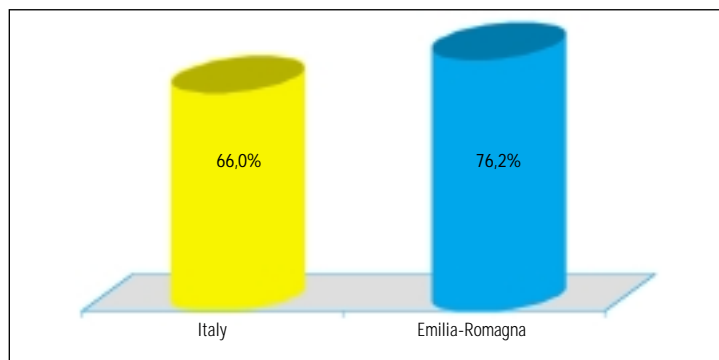
Actually, Broad Band turned out to be one of the topical subjects, owing to the increasing importance the communication technology has been gaining in our society. By now, it is widely accepted that one of the most important elements for the social and economical development of a nation, is represented by the availability of telematic connections which enable a quick and constant communication among people, enterprises and Public Administration bodies.

According to these considerations, the telecommunication networks have been recently added to the primary ones, both in Italy and Europe, and they are now highly regarded by many institutions.

In particular, Regione Emilia Romagna has been distinguished since long time as one of the most attentive realities to the development of an efficient and widespread Broad Band network which would connect all of the Public Administration bodies, in order to ensure many services to citizens and enterprises, which would form, in prospect, a reference mark also for private enterprises.

THE COVERAGE OF DSL CONNECTION

In February 2003 in Emilia Romagna 76.2% of the population had access to one or more xDSL service, much higher than the Italian average of 66%, 2.



Population covered by DSL services in Italy and Emilia-Romagna

The provinces of Rimini and Ravenna are the ones that have the best coverage at their disposal, with, respectively, 90.7%, and 88.4% of the population with xDSL services available.

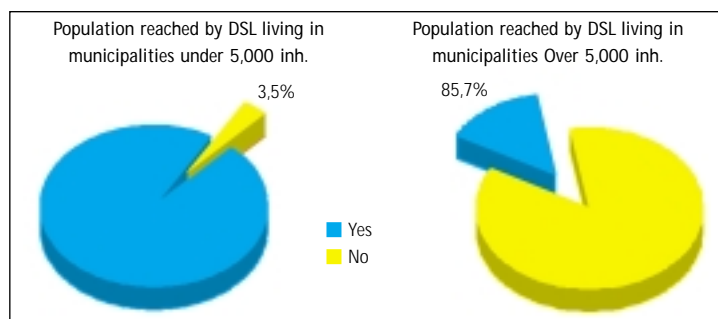
However, treating of xDSL services coverage, it is proper to consider the distribution of population on the territory, and the part of that population who lives in small towns. In the valuation of the results reached by every province, an important role is played by towns with less than 5.000 inhabitants, typically small areas where TLC operators are not willing to invest in, because of the low profitability in supplying Broad Band services.

This is to Emilia Romagna advantage, because only 11.5% of the population lives in towns underneath the critical threshold, in comparison with 18.8% of the national distribution.

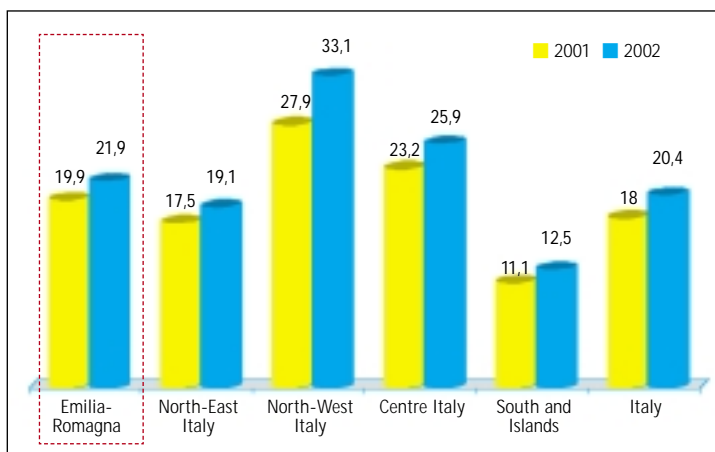
The coverage of Ravenna province involve 88.4% of the population thanks to the very low percentage of population who lives in town with less than 5.000 inhabitants (only 3.1%). Feature that made easier to spread the Broad Band services to a large number of citizens.

The province of Rimini shows the biggest coverage (90.7%), however in this case, besides the people distribution, another incentive for the telecom operators is represented by the great number of tourists reaching the area during the summer, which provides for an increase in telecommunication services demand, including internet access, and makes profitable the investments for xDSL services supply.

The most backward area is the province of Piacenza, where xDSL connections reach less than half the population; condition mostly due to the fact that 32.7% of the population lives in small towns, often on mountain area, which are not numbered among the ones whose telephone exchange will be upgraded to xDSL services in a short while. When we look in particular at small municipalities, we can see that only 3,5% of regional population living in those municipalities can hav DSL access, where 85,7 % of population living in bigger municipalities can.



When we analyse the availability of Optical Fiber infrastructure as a whole (backbone, MAN and local loop) in relation to the extension of the region, we can see how Emilia-Romagna has 21,9 Km of Optical Fiber per square Km of surface. That is more than the north-east average, and more than the national average, although lower than North-West and Centre, which are the most cabled areas with 33,1 and 25,9 Optical Fiber per square km.



Km of Optical Fiber per square Km of surface in Italy

THE DEVELOPMENT OF THE OPTICAL FIBER NETWORKS

After the period of great increase of years 2001-2002, Optical Fiber network growth rates will constantly decrease, according to the trend begun in 2002.

On national level, after the Backbone consolidation which took place in the last years, new Optical Fiber is now going to be laid mainly in the sections of MAN and Local Loop, that will experience the higher growth rates (8-9% in the years 2003-2005).

On the other hand, growth rates will be significantly different in Emilia Romagna, thanks to the investments provided for in the Telematic Regional Plan, which will make possible, between 2003 and 2005, the laying of approximately 77.400 km of new Optical Fiber in the provinces of Bologna, Ravenna, Forlì-Cesena and Rimini (the last three provinces will be called "Romagna" from now on).

The operative project aims to connect with Optical Fiber 70 towns of the above-stated area (compared to 7, connected at the end of 2002), to which several public bodies will be connected, represented by the suburban regional departments, municipal-

ities, ASL and Universities in the municipal territory.

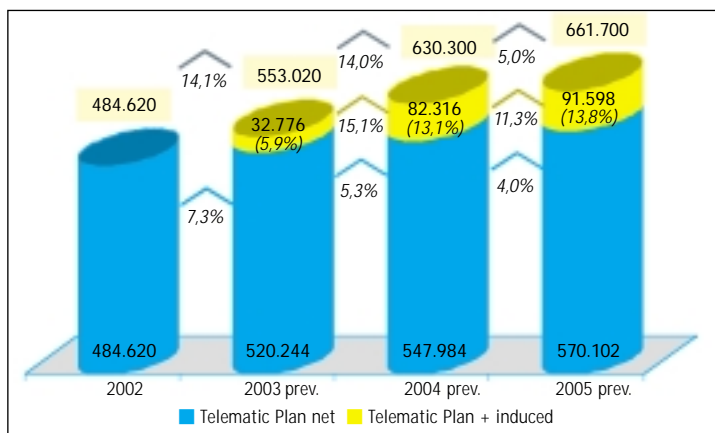
In order to reach these public bodies, often located at a great distance from the transport infrastructures, almost exclusively Backbone connection (77.259 Km) will be laid, with the addition of a small portion of MAN (159 Km), limited to the university location in Cesena and Ravenna.

On the whole, in Emilia Romagna Optical Fiber availability will increase by 14.1% in 2003, by 14.0% in 2004, to diminish to 5.0% in 2005 – new investments for cabling the other provinces of Emilia Romagna not included in the forecast – (see figure 3).

In order to examine in a better way the impact of the Telematic Regional Plan on Optical Fiber availability in Emilia Romagna, in addition to the actions provided for by the Plan itself, it has to be considered the induced of the local Administrations too, on the assumption that this Public bodies, once reached by the Backbone, will build a MAN by themselves, in order to provide for high speed access to citizen too.

In 2003 the total incidence of the new networks laid by Regione Emilia Romagna, with the addition of the induced, will be approximately 6% of the total installed, near to 50% of the newly laid Optical Fiber.

In 2004 the growth will raise exceeding 13%, which means more than a half of the newly laid networks, reaching 13.8% in 2005.



Unfortunately in Italy there is a situation of backwardness and of strong inequality in Broad Band infrastructures availability, particularly in Optical Fiber ones.

However, the situation is different from area to area; in fact Milan and Rome districts are provided for with a very good Optical Fiber coverage, in contrast with many other areas of the Country, especially in the South, which are very poor in high-speed connections.

In this context, as arises by the carried out analysis, Emilia Romagna presents a not well-balanced situation too, with some area already provided with a good coverage and others with a significant lack.

Telematic Regional Plan, that distinguishes Emilia Romagna as the only Italian region with a project involving its whole territory, is an important step forward made by the Public Administration on the way to foster new technologies use.

Undoubtedly, the investments provided by Emilia Romagna require a great expense capacity, particularly when the transfers from the government to regions tends to reduce; that's the reason why not all the Administrations will be able to arrange a plan as ambitious as Emilia Romagna's one. However, the definition of regional projects is considered one of the most interesting ways to develop infrastructural systems that could significantly affect Broad Band supply for local public bodies.

Moreover, it has to be underlined that the activities promoted by Emilia Romagna should be partnered by a similar promotion activity by the single municipalities.

In fact, the project of a total regional coverage that the promoters of Telematic Regional Plan have began, will be probably carried out by the joined action of private enterprises (TLC operators or other investors) and local public bodies.

EARLY RESULTS FROM BENCHMARKING EU REGIONS

Inter-regional benchmarking on e-government

The inter-regional benchmarking activity has started on e-government. A desk-based research was conducted on existing benchmarking e-government research and on individual regions research. This drove to listing over 400 e-government indicators. Within these 400, only one was consistently available on several research, and that was the percentage of municipalities with a website, which is an important indicator but very simple as compared to the complexity of e-government.

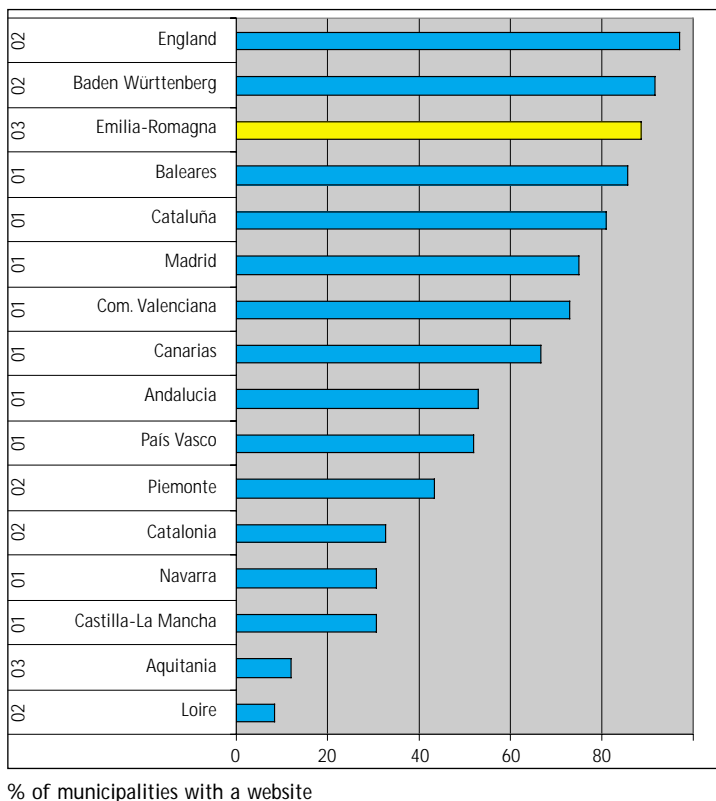
Even this strict selection was not sufficient to provide comparable data, because the definition of website is different from research to research: some consider only websites with own domain, other website with more than one page; some carry out the research via the web, other by interviewing the municipalities.

Data are inconsistent from one research to another. The Spanish research "N-Economía: Penetración Regional de la Nueva Tecnología. Julio 2002" states that 81% of municipalities in Catalonia had a website in 2001, where the same region within its

Regional-IST project of 2002 gives a much lower rate, about 27%. Both data seem exaggerated, in opposite directions.

Also, context must be taken into account. France has many more municipalities than other EU countries; municipalities tend to be smaller and have less IT resources, which for example shows up in lower percentages of municipalities with websites.

Having said that, when we consider the number of municipalities with a website (even if without a domain), Emilia-Romagna seem to perform quite well, slightly after English regions and Baden-Württemberg.

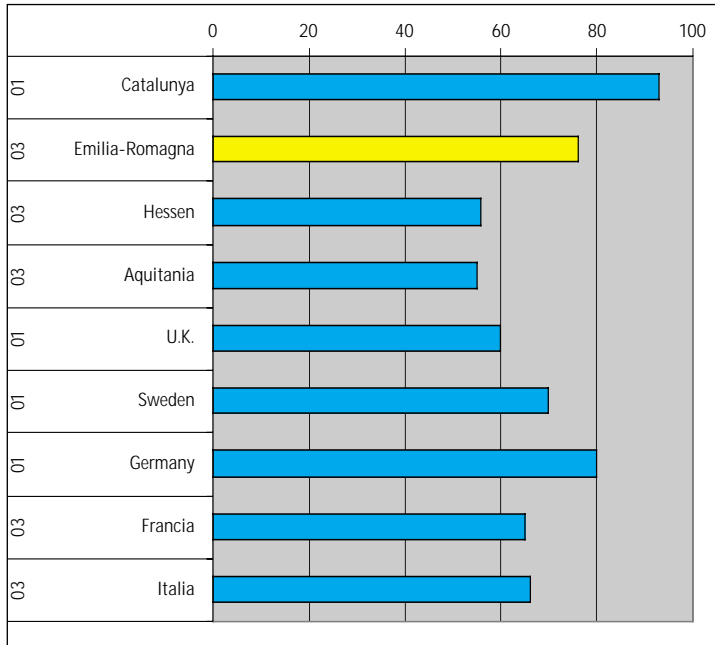


Inter-regional comparison on broadband availability

Same conclusions can be drawn when speaking of broadband availability.

There are no public data available on availability of fiber optic in EU regions. Some data are available on cable, but this infrastructure is not available in Italy. The only data currently available for several countries and regions concern the % of population reached by DSL, but yet again the comparability is low: some research consider the number of available lines, other the whole population of municipalities having one DSL exchange, and so on. More data are available on broadband take-up, that is on the demand side, but this will be examined in further research on individuals and companies, currently being carried out.

Available data show however a high availability of DSL in Emilia-Romagna as compared to other regions and countries for which data are available.



% of population reached by DSL

The benchmarking exercise being carried out with other regions seem to be very difficult if done ex post, using available data and without full transparency on other research methodologies.

On the other hand, it is true to say that many regions carry out studies and surveys on Information Society, similar to those carried out by the Emilia-Romagna region (although with arguably less obsession for comparability)

There is a huge gap between the size of the demand for comparable data by decision-makers, and the scattered and non-coordinated effort carried out by single regions.

The absence of coordination lowers significantly the usefulness of surveys and research. Surveys are expensive, but if carried out on comparable basis with other regions the "return on investment" is much higher than if we carry out individual research.

"Benchmarking eEurope" is without doubts THE reference point for working in this direction.

The cooperation launched in early 2003 between EU regions has been aimed at defining, in the medium term and starting from eEurope indicators, a set of common indicators for inter-regional benchmarking.

The Emilia-Romagna region has agreed with nearly 20 other regions a Memorandum of Cooperation to facilitate data exchange and work together towards common indicators. This work has already produced the data exchange described above, and a map of available indicators in the regions. Most of the work is still to be done, but the direction and ground of cooperation is now available.

