eBZ 2015

Objectives of the Project in the Context of the Strategic Development Plan of the City of Bozen-Bolzano

Renzo Caramaschi, Walter Costanzi, Danila Sartori

Municipality of Bozen-Bolzano

Johann Gamper

Free University of Bozen-Bolzano

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Preface

In 1999 with the eEurope initiative the European Commission recognized the central role of e-government in order to bring the benefits of the Information Society to all European citizens. In the following years e-government action plans have been elaborated and lauched at the European, national, and local level.

In 2002 the City of Bozen-Bolzano in collaboration with the University of Bozen-Bolzano, Faculty of Computer Science, started the eBZ – Digit@l City initiative with the overall objective to promote the use of information and communication technology (ICT) in the local administration. From 2002 until today several projects and events have been activated that stress the key role of ICT for a city of research and innovativation and at the same time correspond to a specific committment that the city supports: particpation in national and European projects, organization of international conferences, organization of the eBZ workshops, creation of a network of public administrations and research institutes, hosting students of the Free University of Bozen-Bolzano for a thesis or internship about topics that are relevant to the municipality, etc.

This document proposes to continue these activities that recognize the strategic role of ICT for an administration that is able to bring Bozen-Bolzano towards a modern, European city with a university, research center and a center of excellence in some key economic sectors.

In the context of the **Strategic Development Plan** of the City emerged as a guideline and focus point to esteem the city of excellence in administration. Therefore, it is of fundamental importance to promote and support all projects that recognize and foster an economy of excellent administration.

In this context **eBZ 2015** is an opportunity for development in a direction that enables the city to support the strong need for the ongoing changes in the municipal administration. These changes are more and more directed towards a requalification of the offered services in a city that is adapted to its citizens and centered around concepts like house, security, health, quality and efficiency of public services.

1 Introduction and Motivation

1.1 E-Government and Information Technologies

E-government is defined as the use of information and communication technology (ICT) in public administrations combined with organizational change and new skills in order to improve public services and democratic processes. E-government could transform old public sector organization and provide faster, more responsive services. It can increase efficiency, cut costs, increase transparency, and speed up standard administrative processes for citizens and businesses. *Information technology is the enabling technology for e-Government.* The challenge for administrations is to adapt quickly to the new technologies and enable innovative ways of work organzation.

In the past few years e-government reached a notable momentum on the political, economic, and academic level, e.g. [15,16,17]. The European Commision and the member states launched action plans to promote research and practice in the field of e-government.

1.2 Towards an Information Society in Europe

In 1999 the European Commission launched the *eEurope* initiative with the key objective to bring the benefits of the Information Society to all European citizens. In the following the European Commission launched the action plan eEurope 2002 and the action plan eEurope 2005 that specify the strategic objectives for the realization of the eEurope vision. Thereby, *e-government* plays a central role.

The progress of e-government in the EU member states is constantly measured in a benchmark study that measures the availabilty of online e-governmnet services and their usage. According to the fifth annual benchmark study [18] over 90% of public service providers now have an on-line presence, and 48% of basic public services are fully interactive. Although huge efforts have been made in the past, to reach the full potential of e-government further research and practice is required.

In the “CoBrA Recommendations” [6] the eGovernment subgroup of eEurope draw a vision about modern and innovative public administration beyond 2005. The report stresses that *modern and innovative public administrations are crucial to reach eEurope's goals* since they provide efficiency gains by better internal performance and by multiplier effects that enable companies to lower their adminsitrative costs and become more competitive. The principal enabler to achieve overall modernisation and innovation in public administrations is the *innovative use of ICT*.

1.3 The Situation of E-Government in Italy

At the national level, several authorities and organizations have been established to foster the "digital revolution" of the public administration. Following the eEurope initiative, the Italian government has developed an “Action plan for e-government 2000-2002" [10] that defines vision, strategies, and objectives of a new digital government. In this plan the role

of municipalities is absolutely crucial: *municipalities will become the central information portal for the whole public administration*. They provide the only access point, which mediates all information from all other local and central institutions of the public administration.

The Italian Government already settled a large part of the legal framework for the implementation of e-government. For example, the law 127/97 and the law 191/98 regulate the characteristics and the use of the electronic identity card, and the D.P.R. 10 November 1997, no. 513 defines the automation, the production, and the exchange of digital documents.

At the provincial level, in 2004 the Autonomous Province of Bozen-Bolzano launched the action plan "eSüdtirol" about the development of the information society in South Tyrol.

1.4 The First E-Government Initiative in Bozen-Bolzano

In the programmatic statement of the year 2002 the General Director of the City of Bozen-Bolzano already sketched a *first vision of the digital city*. A first step in this direction has been the eBZ – Digit@l City initiative [11], which in collaboration with the Faculty of Computer Science of the Free University of Bozen-Bolzano aims to exploit the information technologies in the local administration.

With eBZ – Digial City initiative the City of Bozen-Bolzano made an important step towards research, innovation, and scientific support in the field of e-government. In the following we present the most important projects and actions that have been activated in this framework.

Projects

Project PEOPLE (http://www.progettopeople.org)**:** This project is funded by the Ministery of Innovation and Technology with 7 Mio. Euro (130,000 Euro for the Municipality of Bozen-Bolzano) and has a duration of 24 month (01/01/2004-31/12/2005). The project consortium includes 56 Italian municipalities. The main objective of the project is to develop a middleware layer for the 200 most important services offered by a municipality. Currently, the first tests with a reduced number of services are performed in the municipalities.

Project eMayor (http://www.emayor.org)**:** This is a 6FP STREP project and has a duration of 26 month (01/01/2004-28/02/2006) and an overall funding of 2 Mio. Euro (103,700 Euro for the Municipality of Bozen-Bolzano). The main objective of the project is to develop and implement a web-based platform for secure services for small and medium sized public administrations. The realization of secure services is often a problem for small and medium sized municipalities, mainly due to a limited budget.

Other projects: Development of *new Web pages* using a content management system and the *workflow automation* for the COSAP procedure.

Project proposals: Two new project proposal were submitted for funding: A *PRIN project* about the development of a spatio-temporal map that stores the events of the city (a collaboration with the office "Times of the City") and the *6FP STREP project* mMayor that extends the results of eMayor to mobile devices.

Events

Organization of TCGOV-2005 (3-5 March 2005): This international conference about e-government has been organized in collaboration with the TED Working Group of the European Science Foundation and the IFIP Working Group 8.5 – Information systems for the Public Administration [3,4].

Organization of 2 eBZ workshops (February 2003 and March 2005): The objective of these workshops was to create networks and to promote the exchange of know how with other municipalities, research centers, and universities.

Research and Instruction

A *PhD student* at the Faculty of Computer Science of the Free University of Bozen-Bolzano is working on the integration of hierarchical data structures from different data sources using approximate matching techniques. The work is motivated by an application szenario from the Municipality of Bozen-Bolzano where residential addresses from different databases have to be synchronized. In 2006 the student will work for some time with Prof. Curtis Dyreson at the Washington State University, USA.

3 Bachelor thesis [5,12,14] and 1 summer internship [13] about topics that are relevant for the municipality have been worked out by Bachelor students of the Faculty of Computer Science of the Free University of Bozen-Bolzano. During Summer 2005 two Master students get a stipend from the municipality. They will work in the field of temporal databases and support the responsible person for the project "Times of the City" at the municipality to implement some specific objectives of this project.

The various activities of the Municipality of Bozen-Bolzano in the field of e-government have been published in several national and international publications [1,2,3,4,7,8,9].

1.5 Lessons Learned

With eBZ – Digit@l City the Municipality of Bozen-Bolzano did an important step towards an innovative and advanced administration based on information and communication technology.

E-government is a process which focuses on continuous innovation and requires collaborators that are motivated and knowledgeable about advanced technologies. This is also stressed in the action plan "eEurope beyond 2005" where continuous innovation and the know how of internal collaborators are stressed as crucial aspects to achieve the objectives of e-government.

The scientific collaboration of the Municipality of Bozen-Bolzano with the university is an innovative model that turned out to be a valid solution to achieve know how transfer, which is a central aspect in the continuous innovation process.

2 The eBZ 2015 Initiative

2.1 Objectives and Strategic Areas

The overall objective of the **eBZ 2015** initiative is to strengthen the direction that has been started with eBZ – Digit@l City, to recognize the strategic role of ICT for an administration that esteems local resources, and to bring Bozen-Bolzano towards a modern European city with a university, research and center of excellence in some key economic sectors. The eBZ 2015 initiative concentrates on 5 areas that are described below.

Strategic Area 1: Public Online Services and Front-Office

This area aims to provide to the citizen and businesses online access to all services and information of the public administration, guaranteeing equal access for all and trying to overcome potential differences in access conditions. This facilitates the communication with the citizens (information distribution, interaction, etc.). Specific issues include

- the transformation of the city portal into a multifunctional, interactive portal which offers the possibility to retrieve information (calls, competitions, forms, etc.) and to perform complex transactions (payment, submission of forms, etc.);
- the integration with and extension of the traditional channels such as mail, phone, etc.
- the continuation of already ongoing projects which facilitate and encourage the active participation to the city life (project "Tempi della città", decentralization, discussion forums with politicians and decision makers, etc.) and creation of autonomous Web-spaces for associations and institutions.

Strategic Area 2: Internal Organization and Back-Office

The activities in this area focus on the technical support for an efficient internal organization of the administration which can respond in time to the needs of the citizens and businesses. A prerequisite for this area is the use of a powerful information system which integrates the already existing and partially isolated solutions. Such a system allows also the control of the administrative procedures. Specific issues include

- the realization of an integrated computational platform;
- the automation of working procedures using tools such as work flow systems;
- the development and deployment of e-procurement.

Strategic Area 3: Security

The success of online services can be measured in terms of trust which citizens and businesses have. Surveys indicate that this confidence may not be very high at the moment and must be increased in the future. The realization of secure services is a major bottleneck for small and medium sized municipalities that have limited budgets and a deficiency of tecnical know how. Issues to be addressed in this area include

- the introduction of the electronic identity card and digital signatures;

- the implementation of the "protocollo informatico".

Strategic Area 4: E-Democracy

E-democracy is a specific sector of e-government that recently got much of attention in the research community. It covers a wide range of topics and methods designed with the goal of fostering more participation of citizens in the workings of their government. In particular, e-democracy studies the use of ICT to support an increased participation of citizens in democratic processes: communicate and exchange opinions (citizen-to-citizen, policy makers-to-policy makers, etc.), participate in public debates, policy making, and decision making. With the organization of the TCGOV-2005 conference and the "Beschwerdeschalter online" the Municipality of Bozen-Bolzano already made first experience. In the area of e-democracy we will provide technical solutions and tools to support democratic processes. Specific issues include

- the dissemination of relevant information to the citizen in a user-friendly manner;
- the activation of discussion forums where citizens can propose and discuss new ideas about various aspects of city life.

Strategic Area 5: Research and Innovation

Research and innovation are two important guidelines for the realization of eBZ 2015. The collaboration with research institutes guarantees the exploration of the newest technologies. Specific issues include

- basic and applied research in relevant areas;
- extending the national and international network, the collaboration with research centers and universities, as well as the participation in national and European projects;
- exchange of students between the Free University of Bozen/Bolzano and the municipality;
- studying the feasibility of a study program focusing on information technology and public adminstration.

3 Implementation of eBZ 2015

The eBZ 2015 initiative is accompanied by a collaboration with the Faculty of Computer Science of the Free University of Bozen-Bolzano. This collaboration lasts for five years and can be extended silently for another 5-years period.

A more detailed planning of the initiative is specified in annual working plans that are elaborated by the Municipality of Bozen-Bolzano in collaboration with the Free University of Bozen-Bolzano. The annual plan defines actions and projects that allow to realize partial objectives in the context of an overall medium and long- term planning. For the implementation of specific actions the partners might also involve external companies and institutions.

3.1 Partners

The partners of this collaboration are the Municipality of Bozen-Bolzano and the Free University of Bozen-Bolzano.

The following departements are involved:

- **Municipality of Bozen-Bolzano:**
  - General manager's office
  - Department of Organization and Programming
  - Office for Information Services and Logistics
  - Other departments and offices (depending on the topic)
- **Free University of Bozen-Bolzano:**
  - Faculty of Computer Science

3.2 Funding and Duration

The Municipality of Bozen-Bolzano pays and annual fee of Euro 43.000 to the Faculty of Computer Science of the Free University of Bozen-Bolzano, as a partial funding of the research activities that are related to the objectives of eBZ 2015.

As already done successfully in eBZ – Digit@l City, the partners intend to acquire external funds for the realization of specific projects (FSE, EU VII Framework, national and local funds).

3.3 Running Projects and Projects to be Activated Shortly

Some projects that are already running or will be activated shortly are described below.

Progetto 1: PEOPLE

The Municipality of Bozen-Bolzano is partner of the project PEOPLE with the objective to develop a middleware layer for the access to the 200 most important services of Italian municipalities. The PEOPLE software provides a standardized, XML-based interface to access these services. The development of the core software components has been

terminated. Currently, the municipalities are installing and testing the software. The first experiments run with 6 online services. By the end of 2006 approximately 180 services shall be available.

Progetto 2: eMayor

The Municipality of Bozen-Bolzano is partner of the IST 6FP project eMayor which finishes in 2006. The overall objective of eMayor is to develop and implement an open, secure and affordable e-government platform for small and medium European public organizations in order to:

- support the secure communication of municipalities amongst themselves, businesses and citizens;
- secure remote access and storage to repositories of municipal information for authorized civil servants and citizens;
- support pan European services.

The eMayor project addresses imporant aspects of e-government such as security and pan-European services that requires the integration and exchange of data from different authorities.

The eMayor consortium submitted a project proposal for mMayor that aims to adapt the results of eMayor for mobile devices.

Progetto 3: Matching of Hiearchical Data Structures

This is a PhD project that aims to study the integration of hierarchical data structures from different data sources using approximate matching techniques. As a concrete application scenario we are using data from the Municipality of Bozen-Bolzano, where data from different sources (demografic service, territorial information system, SEAB) have to be joined via residential addresses of citizens. Residential addresses have a hierarchical structure and can be represented as trees. Another important class of hierarchical data structures are XML documents.

Progetto 4: "Bolzano – 10 Minuti da tutto"

This is a project of the Department for Organization and Programming and has been activated in the context of the initiative "Times of the City". The main objective of this project is to develop an online information system that allows to citizens to retrieve the best movement between two points in the city.

The project aims to improve the information about the times of the city, stressing the advantages of using alternative means of locomotion different from the private car. The system allows also to monitor variations in the mobility between various areas of the city and hence provides useful information to develop measures for improvement.

The project has to collect and maintain a huge set of data and information about the times of the city (spatial data, opening hours, timetables of busses and trains, etc.)

Progetto 5: Cross Impacts & City Maps

The Municipality of Bozen-Bolzano is co-ordinating a consortium that is currently preparing a project called "Cross Impacts & City Maps" that will be submitted to the

European Comission for funding. The objectives of this project are: (1) to develop a metodology for the creation of a dynamic model of the city and (2) to develop a software system that allows to maintain the relevant data and to visualize the dynamic aspects of the city in a GIS system. This system shall be used as a tool to support decision makers in the municipality administration, since it allows to calculate the impact of specific actions to various aspects of the city, e.g., to mobility, times, environment, or social life.

Progetto 5: eBZ Workshop

We intend to continue the series of eBZ workshops in the next years with the option to bring to Bozen-Bolzano another international conference like TCGOV-2005.

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