

## A WORKING E-GOVERNMENT EXPERIENCE: THE CITEL PROJECT

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*The municipality of Pisa has been well aware of technological evolution looking for benefits to the citizens and image improvement. e-government is a challenge from technical, economical and social point of view, as new projects have to take into account existing experiences and investments, must show a good return of investment, and must implement services usable by a large variety of people. In the framework of a national call for e-government projects, the Comune di Pisa succeeded in implementing the CiTel project, whose modules are going to be reused in other national projects. Further developments are full compliance with Italian law about accessibility of public sites and availability of services through digital television.*

### Categories and Subject Descriptors:

H.3.5 [Online Information Services]: Web-based services  
J.1 [ADMINISTRATIVE DATA PROCESSING] – Government  
K.4.2 [Social Issues]  
K.4.2 [Organizational Impacts]

## 1 Introduction

The municipality of Pisa has been since long time aware of technological evolution, looking at those which could help in simplifying the relationships between citizens and administration and improve image of the administration itself.

In pursuing this task of continuous technological improvement, the municipality of Pisa has also traditionally played a leading guidance role for other municipalities related to its territory. This role fitted in the national guidelines for e-government, which have been an excellent opportunity to catch.

On the other hand e-government is a technical, economic and social challenge, where wrong or short-sighted decisions can waste resources.

In the following we will briefly recall some e-government issues. Subsequently we will describe the CiTel project, outlining its achievements and technological issues. Finally, we will give an idea of envisaged future developments.

## 2 General issues

e-government is a big opportunity to bring services to all citizens, but must also consider some challenging issues.

First of all, there are *technical* issues. Any project will not start “from the scratch”, but will have to consider previous investments resulting in legacy systems. Some of them can be rewritten in new environments, while in some other cases this could be too expensive. Therefore interoperability with existing software and hardware platforms is a key success factor. It is unlikely that available resources can support a full replacement of existing applications. Designers must carefully consider portability and compatibility with future technologies. Finally, some legal aspects, like security and privacy, must be considered, as personal data are processed and stored, and financial transactions must be executed. To cope with such requirements, appropriate technical choices must be done.

The *economical* issues are mainly concerned with return of investments and safeguard of the previous ones. The last point leads again to interoperability considerations and to some other considerations, like cost/benefit analysis and the effectiveness of the resulting application.

Finally, *social* issues are mainly concerned with the usability by a large variety of people. This implies that the interface must be usable by disabled or elderly people, understandable by low literacy or non native language people, etc.

It is easily seen that these requirements are not orthogonal. In a few words, the most significant characteristic of any successful e-government application is its *quality* ([Signore2005]).

### 3 The CiTel Plan

#### 3.1 Design requirements

The CiTel plan "*Telematic Front office for the citizen*", that engages the Comune of Pisa with other partners like Regulus, Cedaf, and the W3C Office in Italy, is oriented to the realization of a telematic service desk to citizens and firms on several channels, both virtual and real, reducing rears and procedures.

The municipality of Pisa was mainly looking for:

- enhancement of services;
- increased transparency (citizens should be well aware of what is going on);
- set up of the "Digital Office";
- development of infrastructures in the regional area;
- optimization and organizational costs saving.

To fulfil these requirements some well defined and concrete objectives have been identified:

- i) Setting up a unique municipal desk. The service to the users is performed by the front-office, and citizens perceive it as the "unique" office.
- ii) Set up of a call-centre, whose task is offering front-office services as well as supplying first-aid information and accepting claims, as usual.
- iii) Activation of a bi-directional web based communication channel between citizens and administration.
- iv) Allowing payment of a wide variety of services through the web.
- v) Allowing access to services also through distributed multimedia kiosks.
- vi) Supplying information to citizens using several media, like SMS and e-mail.
- vii) Extending service offering to tourists.

#### 3.2 The framework

The Italian ongoing experience with the actuation of the "Action plan for eGovernment" has been the framework. Recently, with the Decree (DPCM) 14 February 2002, a first advance of 120 million Euro was directed to the financing of eGovernment projects presented for evaluation by the PA organisms. A system of "co-financing" was provided, where eGov public funds could cover only a part of the total amount of the projects, up to 50%. The rest of the expenses should be

financed directly by the project proponents. The "heaviest" criteria have been the quality of the proponent (criterion 2, weight 35%) and quality of the proposed solution (criterion 4, weight 35%). The remaining 3 criteria (alignment with territorial objectives, project quality, possibility of reuse) were assigned a 10% weight each.

The CiTel e-government plan has been realized within the Tuscany Telematic Regional Net, and has come in fourth position in the selection advertised by Ministry of Technological Innovation. The total cost of the project has been about 3.36 Millions of Euro (about 1.6 MEUR by Comune di Pisa, 1.1 MEUR investment by private firms, 630KEUR as Ministry co-financing).

#### 3.3 Achievements

With the realization of the plan the citizen are able to approach the desk for information or services directly by her/his computer, by mobile phone or by telematic kiosks installed in several points of the city, avoiding rears and bureaucratic routes.

These services are intended not only for the citizens of Pisa but also for residents in some neighbouring cities (Calci, San Giuliano Terme, Vecchiano, Volterra, Vicopisano and Cascina). Therefore, presently 7 municipalities (for a total of about 200.000 potential users) are yet having access to these services, and 2 more (San Miniato and Pietrasanta) just joined.

The citizen will be admitted to services after being identified through various levels of credentials, starting from the login and password (low credential) to the Electronic Identity Card (strong credential) and the digital signature.

Citizens not using the more advanced technologies may contact the usual information and service desk and the Call Center by a toll-free number. In this case, the operator will be able to answer in a more complete way than in the past, retrieving the information requested by the citizen through fixed identification codes.

The CiTel telematic desk is thought not only for citizens, firms, Tax Assistance Centers but also for tourists (who can book and pay tickets for exhibitions and museums), students (it is possible, for example, to have access to timetables and class registries).

As a first step, we tested the real desk for the first services on line: the acknowledgment system, the automatic routing to the proper office without knowing the final destination, the estimation of citizen satisfaction, the access to the own files, the delivery of requests and fiscal statements checking the own position and calculating the

money due, the sending of SMS to the citizens about events they are interested to. Connecting to the website (<http://www.e.pisa.it/>) it is possible to obtain the major part of the services included in the e-government plan for the seven cities of the Civic Net of Pisa. Among the services, we will recall: payments on-line, account statements for firms, building declarations and application, state and payments of cases, applications for the limited traffic area, state and payments of the fines, access to the own data, self-declarations on line, changes of residence, applications for schools, school meals and school

bus, applications for the occupation of public ground; payments of the "lux perpetua"; booking and tickets for museums; class registries in the schools of Pisa.

Citizens can access with a unique acknowledgment system and make payments using the same mode for every involved local authority.

The virtual front-office activates a bidirectional communication channel allowing citizens to make applications and express their own satisfaction without moving themselves and without knowing the office of competence.

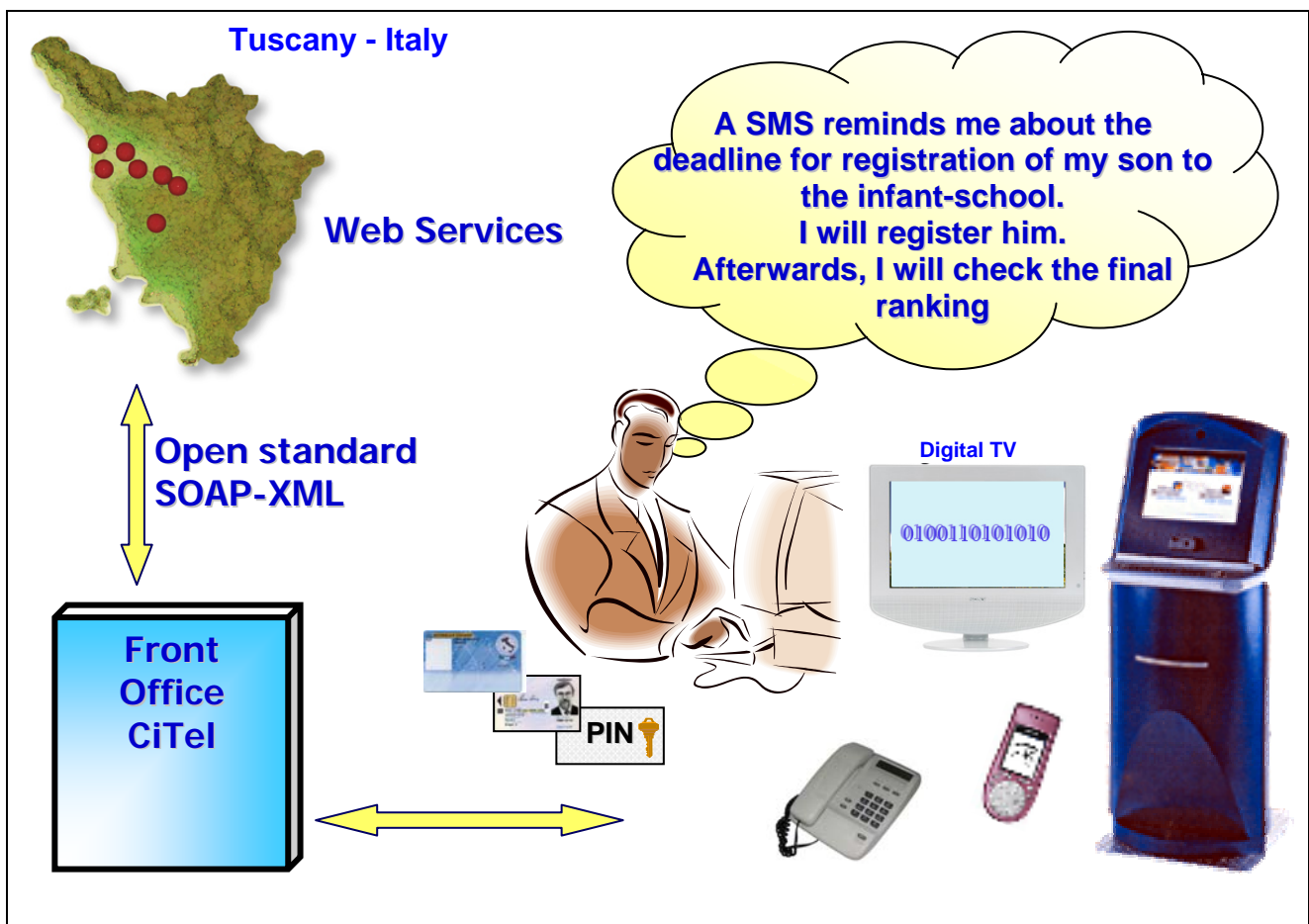


Figure 1 - The general overview of CiTel

### 3.4 Technological issues

We want point out that on the technological level the plan proposes an efficient, modular platform of services. The Base Framework is the fundamental architectural component of the system proposed by Regulus (Getronics).

The Framework consists of all the components for the services to the citizens and of the management and control applications used by the operators:

- Authentication and Authorization Management,

- Menu Management,
- LOG Management,
- Notifications Management,
- Orders Management,
- Digital Company Management,
- Session and the security system (CIG) Management which provides for a member of authentication and authorization independent from the framework of the services.

This choice allows using the same component by a lot of different software applications.

The planning effort with Cedef lied in realizing a Front Office which uses own information as well as info acquired by web services to obtain a right level of cooperation between the various local authorities: so it is possible to improve the efficiency and the quality of service to citizens and firms.

Services have been structured separating various logical levels:

- *Presentation* or U.I. (*User Interface*): in designing the Web interface W3C-WAI Recommendations have been taken into account, to achieve accessibility.
- *Application Logic (Management of the Service)*: solves all the troubles interacting with the infrastructure modules of the web portal.
- *Integration with the Back Office*: the interface between services and back office systems has been realized trough Web Services developed according to WSDL and SOAP standards, and according to the indications supplied by the authorities of e-government. It is open to the standards of the cooperation plan established in Tuscany that includes Pisa as participant.

The 3 levels structure allows improving a multi-channel fruition of services and integration with back-office services.

### 3.5 Reuse

The reutilization plan is an important issue (in fact, the experience may be exported). For this purpose, a cooperation has been activated between the Agencies acting as coordinators of e-government plans. It is established the reutilization of all the products, documents and applications realized in the plan. All the Agencies that apply may obtain the technical documents produced in the course of the plan and coming out by the analysis.

Some Local Agencies, namely Livorno, Lucca, Pietrasanta, Carrara, already participated in our analysis and reutilization, attending the project advancement meetings. We tried to take advantage ourselves by their professional skills. Presently, two e-government projects are going to reuse the base framework and two municipalities (Pietrasanta and San Miniato) started to reuse CiTel modules to supply services to their citizens. Seven self-consistent modules are going to participate in a call issued by CNIPA (National Centre for Informatics in the Public

Administration), to build a national catalogue of reusable solutions.

Thanks to the contribution of partners, involved Agencies, Ministry of Technological Innovation, we passed in time from the planning phase to the operating phase with tangible results.

Now the more delicate phase is starting: the use of the services by citizens and firms. It is not enough to have a W3C WAI-AAA conformant interface or e-learning modules for every service to have the guarantee that these are effectively used. The actual estimation about the use is possible only when a lot of services will be activated. We will heavily use the customer satisfaction analysis to assess the quality of service.

## 4 Future work

CiTel will obviously evolve in increasing the number of services available trough the web interface. In addition, it is already planned to modify its infrastructure and some services to make use of television channel, probably the most popular and widespread technology in Italy.

In this aim an evolutionary project, T-CiTel, has been already presented. It has been one of the 29 projects in Italy which got funding in the framework of a contest for digital terrestrial television transmissions, managed by the Ministry for Innovation and Technologies.

The main task is to bridge the digital divide, supplying selective and personalized information to all the people who are not using more sophisticated technologies.

Even if the user interface of CiTel has been developed taking into account the W3C Recommendations, and especially the WAI Guidelines ([WCAG1.0]), an additional effort will be required to make CiTel conformant to the Italian regulation for accessibility of public sites, which is very stringent ([Signore2004]).

## 5 Conclusion

Facing the e-government challenges, CiTel resulted in a successful experience (award at [Formez2004] and winner at [Paaperta]). Main points are the conformance to an open standard architecture and compliance with W3C Recommendations, which resulted in saving of investments and flexibility towards new technological framework.<sup>1</sup>

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<sup>1</sup> Presentation slides are available at URI: <http://www.w3c.it/talks/2005/cm92005Poland-egov/>

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## 7 References

- [Bolici2003] Bolici F., Cantoni F., Sorrentino M., Virili F.: Cooperating Strategies in E-Government, EGOV 2003, LNCS 2739, pp.313-318
- [Bremen] E-Government Manual, "Quality criteria for a public-user-friendly and secure website" Module, University of Bremen, Technologie-Zentrum Informatik (Computer Science Technology Centre), <http://www.e-government-handbuch.de>;
- [Chesi1997] Franco Chesi e Luigi Paoli "Smaterializzare i trasporti", Numero speciale "Il Futuro dei Trasporti" n° 352 Dic. 1997, Le Scienze Scientific-American
- [Formez2004] "5° edizione Cento Progetti al servizio dei cittadini" (Formez, Dipartimento della Funzione Pubblica)
- [Paaperta2004] "2° edizione premio P.A. aperta 2004, La lotta al digital e al social divide per l'inclusione sociale e le pari opportunità" (Forum P.A., CNIPA, Ministro I.T. ASPHI) <http://www.forumpa.it/forumpa2004/paaperta/cdrom/home/progetto/53.html>
- [Signore2004] Signore, Oreste and Marucci, Luisa and Leporini, Barbara: Web accessibility: principles, international context and Italian regulations - euroCMG 2004 - Vienna, 19-21 September 2004
- [Signore2005] Oreste Signore: Towards a quality model for web sites, CMG Poland Annual Conference, Warsaw, 9-10 May 2005, <http://www.w3c.it/papers/cmg2005Poland-quality.pdf>
- [WCAG1.0] Web Content Accessibility Guidelines 1.0, <http://www.w3.org/TR/WAI-WEBCONTENT/>