Full Case Report

Case 631

Auto e-Counter car registration (Italy)
Electronic access to car registration and licences.

Executive summary of the case:

Abstract
The "Auto e-Counter" is a gateway to enable access to services and information relating to car registration and ownership. It is the first comprehensive exercise of collaboration between public and private organisations in the field of eGovernment implemented on a nation-wide scale. When operational, the Auto e-Counter has the capacity to dialogue simultaneously with the two key administrative partners in the motoring sector: The Ministry of Infrastructure and Transport and the Automobile Club Italia, ACI. It also opens up the system to new partnerships with private agents, namely the car agencies. Revision of the relevant legislation was a prerequisite for this project in order to streamline the roles and functions of the two key administrations mentioned above, while providing the necessary legal framework for the operation of the new range of partnerships involved in the e-solution. In addition to this there was a need to enable direct access to information existing in both the databases of the Ministry and ACI in order to simplify procedures and the provision of certificates to the motoring public. Rationalisation of the use of existing infrastructure involved a substantial re-organisation of front and back offices to enable them to face the challenge of the introduction of such a major programme involving new ITC technologies.

Case description:

Background

The Auto e-Counter

The Automobile Club Italia (ACI) is the advocate for Italy's motoring and travelling public. With its growing membership of drivers and travellers, ACI is committed to the development of innovative ITC solutions that help lighten the load of its clientele.

In this respect ACI plays a key role in the identification, proposal and implementation of public initiatives incorporating a significant ITC dimension, with a view to improving the quality of services delivered to the car and mobility sector. This implies a substantial component of government lobbying and awareness-raising in order to promote and facilitate the rationalization and simplification of the existing legal framework and its network of service provision.

The idea for an e-auto counter emerged from the need to:
- integrate the respective competencies and functions of the Ministry of Infrastructure and Transport and ACI in the field of vehicle registration and circulation in a consistent, mutually supportive way;
- simplify cumbersome procedures and time-consuming administration for the motoring citizens willing to comply with motoring legislation
- modernize, and streamline, the car ownership and circulation system, thus ultimately contributing to a smooth transition into the modern era of safe driving and sustainable mobility.

As an illustration it is sufficient to look at the situation preceding the e-auto counter project. The motorist/car owner, had to make several visits to different offices to register the vehicle and notify any related changes in the details already supplied. With the introduction of the e-counter, a variety of public and private entities (including the 'car agency') provide the entry point to access the on-line world of motoring information and
services. This includes car file processing in real time.

The Auto e-counter, however, only represents an intermediary step in the process to harmonize the legal and administrative system of certification and ownership of vehicles. There is scope, in fact, to move further in the simplification of such a system. This is where ACI is currently playing a pivotal role, including government lobbying and awareness raising of the authorities concerned, to promote/expedite the transition. The 'ideal' scenario would be characterized by the following:
- unified formal certification for circulation and ownership of a vehicle. In the current system, the release of 2 different documents is still compulsory - i.e. the car circulation license and the ownership certificate
- database integration: currently, the respective databases of the Ministry of Transport and ACI are linked, not currently fully interactive
- single access to the unified domain of the ACI and the Ministry of Transport (current legislation still entitles the two administrations to have two separate domains, thus the need for two different access channels)
- e-contract for selling/buying a vehicle on-line
- e-management of the type approval certificate.

**Objectives**

In the short-term

Immediate objective 1 - to rationalize and link the respective information systems of the 2 public agencies concerned, ACI and the Ministry of Infrastructure and Transport, in a move towards unified e-gateway to information and services for the automobile sector.

Immediate objective 2 - to simplify the life of the motoring public, (by for example avoiding the collection of several documents and the need for making several visits to different offices) while improving the quality of information and service delivery.

Immediate objective 3 - to produce reliable and fast updating of the databases existing in the two administrations concerned.

Immediate objective 4 - to supply comprehensive, updated information to the Public Administration for policy and decision-making purposes in the field of sustainable mobility and transport (e.g., fiscal policy simulation, road security and crime prevention).

Immediate objective 5 - to contribute to safe driving and overall security by for example preventing crime related to delayed registration of change of car ownership (this, thanks to the immediate registration of the vehicle, not possible in the previous system. See point 5, results for the Public Administration).

In the medium and long-term

Development objective 1 - to streamline and simplify the legal requirements and certification procedures related to car property and circulation.

Development objective 2 - to facilitate the transition to the electronic era of service delivery, in particular by introducing e-management in local public administration offices and private agencies (the 'car agency').

**Target beneficiaries**

The categories of project beneficiaries include:

- The motoring public: the project has the potential to directly reach the 40 million population of motorists/car owners in Italy;

- Car agencies and ACI provincial offices: for project implementation, the population of car agencies was reconverted into a front office system, where ACI provincial offices at the provincial level as users and service providers at the same time, have maintained the double role of front and back offices;

- Ministry of Infrastructure and Transport: given its overall responsibility for the authorization of any vehicle to be on the road, the Ministry owns the list of technical specifications relating to vehicles. In the carrying out of its back office function, the Ministry verifies conformity to those technical specifications.
ACI: being responsible for the registration and certification of car ownership, ACI has the legal ownership of all data relating to the ownership of vehicles.

**Resources**

This section focuses on the resources deployed by the ACI.

**Professional skills:**
- The following professional profiles have been involved in project management and implementation:

  Profile and number of days:
  - Chief Technical Advisor/Coordinator: 180
  - Organizer: 2150
  - Software Specialist: 400
  - Analyst: 1000
  - Analyst for programming: 1350
  - System Analyst: 700
  - DB Manager: 400
  - ITC Expert: 100
  - Organisation Expert: 400
  - Trainers: 1000
  - Call-centre operator: 5600

**Software development:**
- Target deploy platform Aix
  - Operating system: Microsoft Windows 2000 Server
  - Development environment: IBM Web Sphere application developer 4
  - Language: Java
  - Database: Oracle 9.2 e Sql Server 2000
  - Infrastructure: IBM Mq Series 5.3
  - Modelling Rational XDE

- Target deploy platform Microsoft
  - Operating system: Microsoft Windows 2000 Server
  - Environment: Microsoft Visual Studio
  - Language: Visual Basic 6
  - Database: Sql Server 6.5, 2000
  - Infrastructure: IBM MqSeries 5.2, Microsoft Msmq 1.1
  - Modelling Rational Rose.

**Exercise**

**Central Aix Platform**
- System: IBM AIX ver. 4.3.3.10
- Database: Oracle 9.2 e Sql Server 2000
- Application Server: BMwebSphere Application Server Enterprise edition
- Infrastructure: IBM MqSeries 5.3

**Central Microsoft Platform**
- System: IBM Netfinity 7100 e 5500 M10
- Operating system: Microsoft Windows 2000 Server e NT 4.0
- Database: Sql Server 7 e 2000
- Infrastructure: Microsoft Msmq 1.1
- Peripheral Platform Microsoft
- System: IBM Netfinity 7000, 5100, xseries 230
- Operating System: Microsoft Windows NT 4.0 Enterprise Edition
- Database: Sql Server 6.5 sp 5
- Infrastructure: Microsoft Msmq 1.1

**Equipment Infrastructure: Centrali ACI**

The operating environment in which the e-counter product was installed is made of:
- 2 IBM Risc 6000 7017-S80, 6 CPU Power 3, 450MHz and 12Gbyte Ram
- 2 IBM Risc 6000 7017-S80, 6 CPU Power 3, 450MHz and 6Gbyte Ram.

Workstations with a memory capacity of at least 512Mb are used for the development environment.

Scalability
The Hardware architecture as well as the software allow for high vertical and horizontal scalability of the product.

MultiAccess
The co-operating e-counter is a web-based application that dialogues with final users and by the web services with the domain of ACI and with the domain of Ministry of Infrastructure and Transport. Each of the front-offices is equipped with a personal computer using Windows and the Internet Explorer browser.

Security
The service is delivered to the intended final users via the Intranet, protected protocol SSL v.3. Communication between the respective domains of ACI and the Ministry of Infrastructure and Transport is managed via a dedicated line, thus not accessible from the outside. Users are recognized by user name and password for both domains, thus a double identification is required.

Standards
Standards include:
- Java language (J2EE 1.2)
- UML language for modelling
- web services (Soap 2.3)
- Html
- Javascript
- pdf.

SYSTEM ARCHITECTURE (see next page)

Activities

Legal framework
The Auto e-counter was officially started by law with the formal entry into operation of a legal act, the 'D.P.R. 358/2000' of 06.12.2000. For Italy, it represents the first experiment of electronic communication and interoperability between public administrations, and between these and the private sector/general public, implemented on a nation-wide scale.

The major implementation steps are reported below, including key activities carried out.

The project Task Force:

The project was started under the auspices of the high level management of both the participating administrations, ACI and the Ministry of Infrastructure and Transport. Representatives from both administrations participated, and contributed to the Technical Steering Committee responsible for the project management, in particular to:
- define functional characteristics
- plan and budget implementation activities
- monitor progress.

Consensus-building and coordination with external partners:
To involve the intended category of partners from the private sector -i.e., car agencies - a tripartite round table was organised for consultation and consensus-building purposes. Representatives of the professional associations concerned joined representatives from the two public administrations to:
- identify needs and expectations
- spot the most significant organisational aspects for the intended new system
- assess the impact of legislation, and related legal requirements, in the transition from the manual to the e-system
- define common rules and procedures of norm application.

The ACI Team:
The ACI Team (see section 3) was mainly responsible for the definition of the project technical specifications as well as daily management of implementation. In terms of in-house collaboration, the Personnel department provided inputs to plan and manage:
- training
- communication and awareness raising of users
- definition of operational aspects, such as the opening hours to the public of agency and provincial offices.

Re-organisation of front- and back-offices:
The front-office application architecture is web based, whereas the back-office architecture is based on the model of distributed transactions and queuing system.

Integrating regional disparities:
To homogenise the system, the e-solution had to take into account regional differentiations, including variations in service charges and language barriers. The autonomous province of Bolzan for instance produces documentation in 2 languages (Italian and German).

Training
For training activities, 20 trainers were deployed for a total of 50 days involving 9,000 target users.

Information and awareness raising
An information campaign was carried out at central, regional and provincial level. It targeted essentially the ACI provincial offices, the Ministry of I.T. and the professional organisations. The latter took the responsibility for informing its own members i.e. the commercial car agencies.

Output and Results
The project is intended as the first step in the transition from traditional public services to e-services in the automobile and motoring sector. It is also a pilot experience of collaboration among public administrations and their public to manage change and smoothly enter the modern era of eGovernance.

The next step, currently under assessment by ACI and its partners, would include (as already pointed out in point 1):
- introduction of unified certification as related to ownership and circulation
- integration of databases of the two project partners concerned
- revision of the legal framework to legitimise the existence of a system of 'single access system' to the respective domains of ACI and the Ministry of Transport
- on-line system to sell/buy vehicles
- e-management of 'type approval certification'.

Legal and administrative constraints:
The most significant achievement of the project relates to the improvement of the legal and administrative aspects of car property registration and circulation. This can be summarised as follows:

The new norms, as revised by the Legislator, legitimise the existence of a diversified system of front offices, including:
- ACI provincial offices (Uffici Provisciali A.C.I.) - also playing the role of back offices
- provincial offices of the Central Civil Motoring Authority (Uffici Provisciali M.C.T.C.)
- commercial agencies operating as e-counters.

These entities can now establish a direct link with either the eSystem of ACI or with the back office eSystem of the Ministry of Infrastructure and Transport: Such a connection links to the immediate processing of any request and the delivery in real time of the relevant final certification including, for instance, new car number plates.

National coverage:

There are no more territorial barriers to file processing and document delivery: Previously, provincial offices (whether public or private) had to act within the limits of their own territorial competencies.

Institutional framework:

The respective role and functions of the two partner administrations are maintained (with the Ministry of Infrastructure and Transport responsible for the authorizing the circulation of vehicles and ACI responsible for car ownership certification. Also see section on 'Target beneficiaries' under point 2), while, at the same time, avoiding possible duplication of activities and wasting of resources. In this respect, the eSolution facilitated:
- the possibility to complement the data existing in the two administrations concerned
- the simplification of access to the two main information providers with the introduction of the e-service points.

Testing and system operation:

A period of pilot testing started in October 2002 and paved the way for the official project starting date (06 December 2002).

The table below is a summary report on activities.

In terms of target beneficiaries, results are discussed below.

Citizens:
- Time and money savings: prior to the introduction of the e-counter, the private citizen had to make an average of 5 visits to the public administration offices/counters concerned. The e-counter reduces to one the number of visits, whilst introducing the possibility of choosing among the e-service providers; i.e., the Ministry counters, the ACI counters and the car agency counters.
- Certainty of the procedures. From the moment of the initial request and data entering into the actual printing of the relevant documentation, a few minutes (estimated to a max of 15) are required. This allows for immediate verification and reduces the margin of error and/or incomplete certification/ information.
- Coverage: the diffused network of e-counters (about 5.000) contribute to the effective coverage of the national territory.
- Security: the simultaneous processing of files reduces the risk of getting a partial, and/or incomplete documentation, as it was previously the case if a car dealer or an intermediary agency went bankrupt without finalizing the registration process.

Public Administration
- Anticipation of the income from tax: The possibility of carrying out simultaneously the file processing
functions by the ACI system and the Ministry of I.T. system generates immediate income for the Public Administration. Previously a 60-day gap between the two distinct operations was permitted by the law.

- Increased security for provincial offices due to the reduced number of cash payments (thus, liquidity to be kept in the office) as these are replaced by e-transactions.
- Availability of comprehensive, reliable and updated information on motoring and mobility, to be used to monitor their trends, make forecasts and policy simulations.

Commercial agencies
Major benefits include:
- reduced need to visit ACI and Ministry offices
- reduced time to process files
- reduced risk linked to cash transactions
- possibility of supplying services covering the entire national territory. The eSystem in fact eliminates the territorial competences, thus generates savings in terms of the need to have antennae outside one's own territory
- skill upgrading of agency employees, redeployed as eOperators in the service of the Public Administration.

Car manufacturers
When compared to the previous system, the eSolution gives the situation regarding vehicles on the road at a glance. Car manufacturers therefore can monitor market trends and consumer habits as they can access at any time updated information on:
- The market for new and secondhand cars,
- migration flows between geographical areas,
- indicators of activity of branches and so on.

Lessons and conclusions
The following discussion highlights the points of strength and weaknesses of this experience.

Inter-agency collaboration:
Maybe not surprisingly, the most sensitive issue in the implementation of the project was the one relating to the inter-institutional and organisational structure of the project itself, and not the one relating to technological innovation. In this respect the technology challenge was professionally handled by the project technical team and its partners (including the eTechnology suppliers).

Given the number of entities concerned and a potential to reach a public of about 40 million car owners/drivers, a strong need emerged to build-up a wide consensus in relation to the project choices. In order to facilitate this process and reduce the margin for conflicts, the government nominated an independent co-ordinator super partes. It was also necessary to make a clear definition of the respective responsibilities of ACI and the Ministry of I.T. - especially for trouble-shooting should one or the other system have a 'bad' performance. This implied:
- identification of different levels of service uses, and
- tracing the path of documents.

Collaboration with the private sector:
The private sector proved very sensitive to technological innovation. In the tripartite round table discussions, its representatives were very keen to make a jump in quality service supply, so as to accelerate the move from the stage of paper production to the stage of e-certification.

It was in this climate that commercial car agencies were ready to invest in the new eSolution, both by acquiring the relevant equipment and supporting the personnel training and redeployment for the full mastering of the innovation.

Balancing of the e-system:
Given the number of transactions that it is expected to process as well as the number of technological structures involved, one of the most difficult tasks to accomplish in the setting up of a such a complex e-system relates to the balancing of the system itself in relation to the workload.
This issue was addressed during the pilot phase of project operation, where a random sample of service points was involved in simulation exercises.

Public awareness:

During the experimental phase, the project conducted a public awareness campaign on a nationwide scale. Despite this campaign, resistance to accept change in the pilot testing of the eSolution reduced the scope of the use of the different functions. In other words, the system was under-utilised, thus limiting the value of the test. Problems and bottlenecks that should have emerged in this pilot phase, actually emerged when the system became fully operational. To cope with this situation, it was necessary to:
- plan for additional training and awareness raising activities
- strengthen the technical assistance component.

Both remedies proved of particular value and were accompanied in the transition by on-the-job training and building up motivation.

Currently, specialists numbering 70 provide an assistance services from their desks linked to the e-counters, to:
- monitor the state of submitted files
- debug the system should bottlenecks occur in the processing cycle
- record the flow of any request for technical assistance in particular by tracking the correct procedural steps.

Step by step approach:

As a security measure, a gradual transfer of functions to the new e-system was planned. Currently, transactions include:
- change of ownership
- cancellations.

With increased robustness of the system, additional transactions will include:
- registration of vehicles in the databases of both ACI and the Ministry of Infrastructure and Transport
- re-registration after of loss of number plate.

During the consolidation phase, the previous system did not stop to functioning. This had the advantage of avoiding delays in file processing, in case of failure by the eSystem.

Technology challenge:

The project involved the massive introduction of the most up-to-date and performant technology. Furthermore, the design of the technology architecture implied the integration of heterogeneous environments, both within the domain - platform Aix and Microsoft-(ACI) and the domain platform sun solaris and Oracle (Ministry Infrastructure and Transport).

The link between the central system of ACI and the one of the Ministry, based on Unix with an Oracle application server, was implemented by using the ‘web services’ model - an international interoperability standard.

The link with commercial car agencies was implemented by using web based interfaces and ISDN connections with TCP IP protocol. Agencies had to be equipped with operational systems Windows 2000 or XP.

There is also a possibility of dialogue, by XML, between the eCounter and the previous electronic systems existing in some of the agencies. For this particular task, software-houses managing those information systems were involved.

In terms of technology, ACI had to manage the difficult cooperation between its central and peripheral systems:
- central system based on technology UNIX AX and web sphere(IBM)
- Peripheral system based on Windows NT.

Problems were solved by using products integrated at the level of platforms and code managed links in XLM, resulting in the independence and a synchronicity of each transaction.
Due to the complexity of the technology architecture, the mastering of the technology by the technical team of ACI and its continued collaboration with technology suppliers has proved of particular significance to address the technology challenge and secure the quality of the final eProduct.

References and links

Access to the e-application currently in use is reserved to authorized persons as it provide access to the protected information contained in the official public archives/registers. Furthermore, it is operated by the private intranet system of ACI.

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