

E-GOVERNMENT AND PUBLIC SERVICES

A case study of the
inter-administrative portal CAT365

Research report (synthesis document)



E-GOVERNMENT AND PUBLIC SERVICES: A CASE STUDY OF THE INTER-ADMINISTRATIVE PORTAL CAT365

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Preliminary

E-government and public services: a case study of the inter-administrative portal CAT365

Description of the research

The study analyses the current use of the Internet by the Catalan autonomous administration. Specifically it analyses the rollout of a particular project – AOC, Administració Oberta de Catalunya (Open Administration of Catalonia) – from two principal perspectives: on one side, we study the changes that occur in the relationship between citizens and administration, both with respect to the provision of services and the mechanisms of public participation in decision making. On the other side, we study the processes and transformations within the administration, which occur as a consequence of the intensive use of the network as a channel for distributing services and as a tool for transversal communication.

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Chapter 1

Introduction

This document is a concise version of our research report. As a summary a large amount of descriptive information contained in the report has been left out, in particular, the presentation of empirical evidence collected through active observation, as well as basic level analysis contained in the report, including an extensive section containing a bibliographic review and an account of the process leading-up to the project. As a result, this is a basic description of the research project – the methodology, analytical model, basic questions, etc. – and a synthetic presentation of the main conclusions that we have reached.

Our study analyses the current uses of information and communication technologies¹ in the Catalan autonomous administration. More specifically, the study centres on the interaction between the use of a specific area of ICTs by the public administration – the Internet – and certain core features of these types of institutions: their organisation and internal structure, the provision of public services and the relationship with other social agents.

In a strict sense we have endeavoured to analyse the phenomenon of e-government² in the particular framework of the Autonomous Government of Catalonia (Generalitat de Catalunya), studying its level of development and penetration, its most significant characteristics and the most important problems that are tackled. E-government is understood to include both those matters that are sometimes included under the term e-governance³ (e-democracy, forms of participation using ICTs, relationship with other social agents, etc.), and matters that are grouped under the term e-administration⁴ (access to public information, provision of lines, etc.).

The research project is centred on a *case study* on a project of specific innovation that has a great impact, currently in its first phase of implementation: the **Administració Oberta de Catalunya** (AOC) (Catalonia Open Administration) project. Specifically, we have focused on the part of this public initiative that involves the creation of an inter-administrative portal in Internet, CAT365⁵, destined to provide public services electronically to all the administrations operating in Catalonia.

Using a theoretical framework and a preliminary empirical assessment, we have constructed an analytical framework and a series of hypotheses that have been tested

1 Hereinafter *ICT*.

2 Electronic government: *e-government*.

3 Electronic governance: *e-governance*.

4 Electronic administration: *e-administration*.

5 <http://www.cat365.net/>

using different qualitative empirical research techniques, which has enabled us to draw a series of theoretical conclusions. The methodological issues will be explained in detail later in the text.

The significance of this study lies basically in the analytical interest of exploring the way in which the Internet is beginning to be used, in a systematic manner, by states and public bodies. If the history and spread of the network can be described as a successive extension of its social use, from scientific and technical communities, groups of computer hackers and alternative communities involved at the beginning, to an explosion in the business world and in private initiatives during the 90's, it seems clear that since the end of the last decade public administrations have begun to consider the network as a key element in their future, both with respect to their public portals and their internal computer systems and intranets, and as the central axis for their modernization. In fact, e-government initiatives have proliferated spectacularly in recent years and are currently used in many administrations at all levels (from local administration to supra-state).

In parallel, the number of studies trying to understand this phenomenon from different viewpoints and areas is also increasing. In addition to academic studies, which already collectively display great heterogeneity in their disciplinary, theoretical and methodological perspectives, we also have to include those carried out by private companies in the sector (from software companies and large corporations to large consulting firms), by public administrations or governments, and by various institutions. In both cases however, as far as the e-government initiatives themselves and the research to analyse them is concerned, there is little consensus regarding the most important characteristics, their most significant consequences, the most trustworthy indicators or the most suitable methods of analysing and evaluating specific projects.

Our objective is to contribute to the understanding of the phenomenon of e-government as far as our empirical study allows us to do so. We will especially focus on the internal transformation within the administration that may be associated and the characteristics that condition this process, both positively and negatively, like factors that favour change and innovation or obstacles. Equally, however, we will endeavour to find keys to interpret the implications of these transformations for the relationship between citizens and public institutions.

In any case, the objective is fundamentally analytical, and this study does not aim to provide an evaluation or be normative. Nor does it wish to judge the adequacy of a specific project, or give recommendations to government, administrations or other social agents so that they can improve or establish their own e-government initiatives. In particular, we do not want to establish direct comparisons between the AOC project and other e-government initiatives of a similar scope. We will not follow the trend that is so frequent in this area to produce classifications (by providing rankings of countries, regions, or cities, etc.) based on parameters that are measurable to a greater or lesser extent. It is obvious that both some of our conclusions and part of the descriptive characterizations that we provide will be able to be used *a posteriori* to make judgments, criticisms or positive statements about AOC or other similar initiatives. This will not, however, be a task that we conduct in the research presented here.

This study, as it is known, forms part of a wider research program called *Project Internet Catalonia*⁶ (PIC). The PIC is an interdisciplinary research program on the information society in Catalonia carried out by researchers of the Internet Interdisciplinary Institute (IN3) of the Universitat Oberta de Catalunya (UOC), led by Professors Manuel Castells and Imma Tubella. The project has been conceived as a thorough analysis of the uses and penetration of Internet in diverse areas of Catalan society: basically homes, companies, schools, universities, the public administration and health.

Within the PIC framework and in the area of public administration there is another research project, separate from the one that is summarized here, which is an e-government case study in the specific context of municipal administration. This study is focused on the analysis of the phenomena of e-government in the Barcelona City Council⁷. Both studies have been developed independently, however, by different researchers. Comparison of the two corresponding reports reveals that they share a similar analytical model, a theoretical base that is equally close and a series of questions that coincide to a large degree in some cases. Methodologically, both studies have also been developed with practically the same qualitative social research techniques. Nevertheless, given the clear difference that exists between the study objectives, both with respect to the nature of the institutions involved and the difference between the objectives and characteristics of the projects, each study is focused in different aspects of e-government and equally diverse areas of internal change within the administration.

⁶ See <http://www.uoc.edu/in3/pic/eng/index.html>

⁷ See <http://www.uoc.edu/in3/pic/eng/pic5.html>

Chapter 2

Methodology and object of analysis

2.1. Methods

2.1.1. Initial considerations

The methodological design of this study on e-government has been conditioned by different factors. Obviously, the study's subject area has been the most important factor in the choice of methodology. As previously noted, the project was initially conceived as a case study to make a more in-depth analysis of the interaction between a specific e-government project and three key aspects of the public administration: its organization and internal workings, the way in which different administrations interact, not in general, but particularly regarding the provision of public services, and finally, the processes that they affect with respect to the administration and citizens.

This approach, which will be developed later in the analytical model and the project hypothesis, is based on a wider theoretical framework: that which in recent years has considered the *network society* as the most characteristic form emerging of the social structure in contemporary times⁸. This major transformation, supported by an ever increasing number of researchers, is particularly supported and strengthened, although never simply "caused", by ICTs: a group of technologies that especially enable the generation and processing of knowledge and information. What is observed in different areas of social reality is, precisely, the intimate association or symbiosis between a new form of organization in social relations and a new technological paradigm in microelectronics.

The most important analytical objective of this study, in this sense, is to see the extent to which e-government becomes an inductor of a similar transformation in the area of public administration as that which can be verified in other social areas (personal relationships, companies, finances, etc.). Without doubt this objective has most strongly influenced the significant methodological elements in our research project, as will be shown below. A detailed review of these elements follows, focusing firstly in the most general or basic elements.

The analytical model that we have developed, which is used as the basis for our methodological framework, is basically interdisciplinary. In the section outlining and

⁸ Castells (1997-2001) is, without doubt, the work of reference in this area.

explaining the analytical model it will be clearly shown that we have tried to construct an interdisciplinary perspective to study the phenomena of e-government, where elements from different areas are integrated: from political science to political theory, covering the latest theories on the interaction between technological innovation and social and organisational change.

Secondly, the empirical nature of our research has been a basic assumption of the entire project, a trait that also characterizes the other studies carried out in the context of the PIC. The project is not presented, however, as a purely descriptive study: there is an analytical process that goes beyond mere description and endeavours to develop a series of theoretical conclusions that are directly supported by the empirical work undertaken. It is not just a purely theoretical study based on sources already published. Naturally, we have carried out a literature review on e-government and related subjects, but we considered it necessary to back-up our findings and support our analytical model with empirical data obtained first hand.

Thirdly, it is not an objective of the study to make predictions over the future development of a specific e-government project or on the future trends that will dominate in this area in the years ahead. It is not therefore, under any circumstances, an exploratory study. The objective is to analyse the processes that can currently be observed and try to understand the conditioning factors and most significant obstacles.

Finally, the study does not aim to put forward simplistic hypotheses where linear correlations are established between the use or spread of technology in the area of the administration and certain transformations in its structure, organization or operation. As we will see in more detail in the analytical model, our project tries to avoid precisely this type of mechanical relationship between technological innovation and organizational change. In particular, we try to avoid approaches that are traditionally used in the identification of "social and organizational impacts of technology". Instead of this determinist strategy, we have aimed to detect and analyse the conditions with which certain technological innovations are associated, in a fairly stable pattern, with certain organizational changes.

2.1.2. Case study and object of analysis

This research project is conceived as a *case study*. As is well known, case studies are characterised basically for allowing the collection of detailed information, of great depth, usually from multiple sources. The objective of our case study was precisely to analyse the interaction between different factors and variables with the aim of gaining the greatest possible understanding of our object.

In essence, we have conducted an instrumental case study, aimed at testing various hypotheses and, consequently, rather than making an overall assessment about the object under study, we have focused on those aspects and elements that were most interesting given our analytical objectives. However, as it will be seen, some of the characteristics of the object led us to modify our specific analytical interests. Evidently, as in all case studies, the dimensions of the empirical study limit the general application of the conclusions and hypotheses defended. This does not prevent certain assertions being drawn from context that, aside from the situation studied, present clear similarities with those described in our case. Nevertheless, subsequent empirical studies in other administrations will consolidate or call into question the validity of this type of generalization.

Limits of case study

One of the most important elements in a case study is for the researcher to limit the object to be studied. In our case this process has been of special importance, with some notable consequences, both with respect to the methodology and analysis, and warrants highlighting.

Initially, as mentioned in the introduction, the object of study was to be the transformations with the use of ICTs for e-government in the area of the autonomous administration. However, it immediately became clear that the Autonomous Government of Catalonia was too large an object to study (both in numbers of units and departments, as well as the number of personnel⁹). Moreover, the general area of ICTs was too complex (there have been many, very heterogeneous initiatives introducing the use of ICTs in the autonomous administration and, in many cases, they have a considerably

⁹ The Autonomous Government of Catalonia has 130,000 employees and, prior to the most recent reorganisation of departments, there were 15 departments, 15 sector secretaries, 92 section heads, 27 autonomous bodies or agencies and 50 public companies (Ramió 2003).

long history) for a study like ours, with limited resources, particularly with respect to the number of researchers and the time available, to be able to achieve the desired depth of research. Accordingly, it was necessary to limit the area of our study and identify more specific lines of empirical analysis.

Fortunately, when we began to design our study, the Autonomous Government of Catalonia had begun to design and develop in an effective manner the *Administració Oberta de Catalunya* (AOC) project. Firstly, this project presented some characteristics clearly linked to the most common international trends in e-government, as well as other idiosyncratic traits that we will mention through the course of the study. The project is centred around a core objective: to improve the relationship between citizens and the administration through the intensive use of ICTs, especially Internet, simplifying administrative processes and making them more agile. Along this line, which we might label as *canonical* from the e-government perspective, the AOC project has one of its basic foundations, the construction of an Internet portal primarily focused on providing electronic services to citizens and businesses. In fact, the project was explicitly presented as the most important e-government project which the Autonomous Government of Catalonia was working on. As we will see later, the AOC “brand” served and continues to serve as a means of drawing together all the e-government initiatives of the Autonomous Government of Catalonia under one umbrella.

Secondly, the project was also publicly presented in a very clear manner as the most ambitious project of internal change and reorganisation in the autonomous administration undertaken to date by the Autonomous Government of Catalonia. In other words, the new interface for citizens, represented by the new portal, was directly associated with a fairly systematic re-evaluation of the organisational structures and frameworks involved in the processes supporting the various public services.

Both characteristics made AOC an ideal candidate for our case study. On the one hand the content of the AOC project coincides almost one hundred percent with the research questions and subject areas that we had initially proposed and on which we had based our analytical model. On the other hand, its wide impact, affecting all departments of the Autonomous Government of Catalonia, made it especially suitable to analyse the overall changes that the autonomous administration faced with the shift towards e-government.

AOC as object of study: interaction between object and analysis

Establishing the limits of the case study as the AOC project had some important consequences for our analytical objectives. Firstly, AOC is not exclusively a project of the Autonomous Government of Catalonia. In fact, AOC is the name of a consortium established between two institutions: the Autonomous Government of Catalonia (with 60% representation) and Locaret¹⁰ (with 40% representation). The objective of the AOC consortium is to develop e-government initiatives in a Catalan context. In particular, the two initiatives that have been launched under the consortium to date are, on the one hand the inter-administrative portal CAT365 and, on the other hand (which is more recent), the Agència Catalana de Certificació (Catalan Certification Agency) (CatCert). Our decision was to centre the empirical analysis on the development of the inter-administrative portal, which is undoubtedly the consortium's emblematic project. It also provides the best overall reflection of the usual objectives of e-government¹¹.

Choosing AOC¹² as object of analysis meant, in principle, broadening our research focus from the autonomous area to local government, especially to city councils. AOC is, on the one hand, a project focused on providing electronic services to all the administrations that are active in Catalonia and, on the other hand, an initiative to modernise and restructure the administrations represented in the consortium (basically, city councils and the Autonomous Government of Catalonia). However, as the effective involvement of city councils in the AOC project has to date been somewhat limited, our empirical study has remained practically limited to the area of the Autonomous Government of Catalonia itself, as initially envisaged. This has not prevented us however from being able to include an area in our analysis that was not considered from the beginning: the inter-administrative relationships, a question of considerable importance in the core of e-government. A relevant part of our empirical research has therefore been focused on this objective, even though in the area of the provision of services and internal change we have focused principally on the autonomous administration.

Secondly, by focusing the study on AOC, that is, in the development of the portal and the associated transformations, we have deliberately dismissed other elements, areas or projects of the Autonomous Government of Catalonia that might have a direct or semi-direct relationship with e-government, even though we stress that AOC is without doubt

¹⁰ Locaret is an entity that represents the majority of Catalan local administrations.

¹¹ CatCert was created after the start of our study and the impact of its focus, the development of the electronic signature, is much more limited than our interests.

¹² There is certain confusion in the use of the term *Administració Oberta de Catalunya* (Catalonia Open Administration). In a strict sense, which is the one that we use, AOC is a consortium that groups together CAT365 and CatCert. In another sense, however, AOC is used within the Autonomous Government of Catalonia to cover different projects, related with e-government, but not depending directly on the AOC consortium, being strictly internal projects in the autonomous administration. We have identified five projects whose development is managed by three different councillors: the CSI or eaCAT and EPOCA projects (Department of Governance and Institutional Relations); the G@udi and eCatalag projects (Department of Economy and Finance) and the NODAT project (Department of Universities, Research and Information Society).

the most ambitious initiative and the one that has had the greatest impact in this area. In particular we have not made a systematic study of the information systems, the accounting systems or the intranets of the Autonomous Government of Catalonia. Nevertheless, we have carried out a partial exploration of some of these elements, to the extent that they have a direct relationship with some of aspects in the rollout of AOC.

Thirdly, our study has been developed in parallel with the rollout of the project itself: the CAT365 portal was publicly launched a couple of months after we began the research¹³. Conducting the empirical study has practically coincided with the portal's first year of activity. The obvious disadvantage is that we have not studied a stable and closed environment, with a series of products and definitive results that are clearly identifiable. But, on the other hand, it has the great advantage of being able to analyse a project during its rollout and implementation phase, where there is greater access to tacit knowledge, the specific problems of implementation, the definition and evolution of strategies and changes in direction. In reality, it is a thesis shared by many researchers that the analysis of the interaction between technological innovation and change at a social and organisational level is much more interesting and fruitful when it corresponds with a period of design and development, rather than being centred only on the spread and use of the finished product¹⁴.

Fourthly, the interaction between object and analysis is also displayed in the relative attention that we have given to different components of e-government. In this sense, for example, the priority given by AOC to the provision of electronic services has been clearly reflected in the centrality that the processes involved have had in our analysis. In more subtle terms, for example, the concept of *service* that the participants in the project use also influenced the definition of some parts of our empirical study and in the end prompted us to include it within our analysis.

2.1.3. Planning of empirical study

Once the AOC-Cat365 project was chosen as the object of analysis, it was necessary to define the project strategy, based on our analytical concerns, and to select the type of empirical research techniques that were most appropriate.

¹³ The public presentation of the CAT365 portal took place on 5 July 2002 at the Palau de Mar, Barcelona.

¹⁴ In this sense, see the classic work of Latour (1987).

The analysis of webs and “best practices”

With respect to the first question, out of the small number of empirical academic studies that have been carried out on e-government, most have centred their analysis on the study of the administrations' portals. Normally, a series of dimensions are defined (for example, information, processes, participation) and a set of variables for each one to explore each site (structure of contents, clarity of information, level of virtualisation in process, number of processes available, availability of online forms, spaces for interaction, etc.). This technique of benchmarking is commonly used for a number of portals or web pages of different administrations of varying size (usually at the same level), and it is principally used to make comparisons between them and establish rankings in e-government development, classifying different countries, regions or cities. It is a strategy of analysis that is commonly used, both in specialist literature¹⁵ as well as by service companies in the sector.

The analysis of web pages is particularly useful to study the changes in the relationship between citizens, companies and institutions, and the different administrations in the context of e-government, given that the object taken is precisely the interface that the administration designs in the network. It also has the clear advantage that the empirical objective, web pages, are easily accessible, and it allows the collection of data to be automated to some degree through the use of software specifically designed to analyse contents, or at least the repetition of the analysis of a series of objects of variable length. However, this strategy of empirical research only allows partial evidence to be obtained, which is indirect from all the processes of change taking place within the public organisations. Therefore, it does not allow great depth in the exploration of the integration or relationship between the online processes and the offline processes.

From the beginning of the research, given our analytical interests, it was clear that the analysis of webs as a tool would not be sufficient for our project, although we have also extensively analysed the portal of the Autonomous Government of Catalonia and Cat365. It was necessary, therefore, to widen the reach of our methodology, researching as far as possible into the administration and using empirical social research techniques that enabled us to obtain information and data first hand, directly from the participants and administrative units involved in the AOC project. This characteristic also had to be one of the significant added values of our study, given that relatively few studies in this area take

¹⁵ See, for example, the studies of Musso et al. (2000), La Porte et al. (2002) and Kaylor et al.(2001)

this step and go beyond the electronic interface, into the public institutions, accessing the processes and problems that result from implementing e-government¹⁶.

Another important characteristic of our study has been the willingness to avoid the strategy that is very common in the area of e-government of identifying and analysing those projects or parts of a project that are considered to stand out or be excellent from a certain parameter or group of indicators. This practice, especially used by public bodies or institutions that wish to promote the development of e-government initiatives in their area of influence, has also become a common strategy of many studies. Thus, the identification of so-called “best practices” has become a line of analysis that is fairly widespread in the area of e-government.

Focusing exclusively on the successful outcomes of e-government presents, from our perspective, two important analytical questions. Firstly, it assumes that the conception of the very notion of success is not problematic: thereby it implicitly assumes that success or “good performance” is an intrinsic characteristic of the objects analysed and there is relative agreement between the actors about which criteria are used to determine this. However, as we will see through the course of our study, the lack of agreement about the parameters that should be used to evaluate and judge e-government initiatives is patent between the participants themselves, and also extends to analysts. The determination of the level of success of a specific project does not represent a firm base to sustain the analysis. In fact, it represents part of the problem to be studied. In this respect, we will see how the discussions and clashes between different methods of evaluating e-government are closely linked to very different objectives and conceptions that exist about it¹⁷.

Secondly, the study of the parts of an e-government project that are considered by the actors themselves, be it a group or the majority of them, as less successful (what we might ironically call worse practices), have certain clear advantages from an analytical perspective. This is related to the precept of social research that considers the study of periods of instability much more interesting and fruitful than the analysis of institutions during stable periods. This is also manifested in the study of technological or organisational innovations, where the problematic elements allow one to access much more data and knowledge, values and tacit information that are difficult to identify when things occur as planned and actors show their consent in this respect.

¹⁶ Examples of studies that also carry out part of their empirical research inside the administrations are Fountain (2001a) or Heeks (1999).

¹⁷ This argument has in fact been very present in the methodological discussions of the last two decades, in the field of social studies of technological innovations. See, in this regard, Pinch and Bijker (1989).

Inside public administration

The need to enter the administration to collect information and data directly, both on the process of the development of the AOC project and the associated organisational changes, is done using three basic methodological techniques: interviews of relevant personnel in the different units of the various organisations involved, the analysis of internal documentation provided by many of these people and, especially, participant observation.

Obviously participant observation has to be one of the most important tools for us to enter into the administration, and determining the specific locations where it was to be conducted was particularly relevant. Immediately afterwards, it was necessary to seek permission from the institutions involved and negotiate the terms of our entrance.

Our decision was to carry out two consecutive periods of participant observation in two different locations. One in the General Direction of Operational Planning (President's Department) and the other in the CAT365 portal. The General Direction of Operational Planning (DGPO) is the unit charged with implementing the AOC project in the Autonomous Government of Catalonia, acting, that is, as intermediary between the different departments of the Autonomous Government of Catalonia, as producers or suppliers of the different public services, and the CAT365 portal¹⁸, which acts as the distributor of these services, and in principle those of other administrations, in the electronic channel. Both units were the most important operative centres in the rollout of AOC.

The DGPO is, however, a relatively small unit of a transversal character with a direct link to the Catalan Prime Minister via the Government Secretary: therefore it occupies an intermediate position in the administration's hierarchical structure. In this sense, we consider that our empirical research also had to extend to the lower levels of the autonomous administration, namely the departmental units involved in digitalising services that have to be distributed by the new portal. As the number of these units is very large, we decided to focus our direct observation on the rollout of two specific services: one because it constituted the first truly interdepartmental service (that is, directly involving more than one department) and the other because it involved local

¹⁸ CAT365 is, in fact, the name of the portal. As we explain later, the entity that manages the public company Serveis Públics Electrònics SA (SPE) is often referred to as Puntcat (the original name chosen for the portal). During the period of participant observation in CAT365, SPE S.A. was 100% owned by the Autonomous Government of Catalonia. Nowadays, however, it is owned by Consorci AOC, as was originally envisaged.

administrations, also for the first time, in this case city councils. The first, the interdepartmental service, was the *registration for public exams for civil service employment*; the second, the inter-administrative service, was the *registration in teaching centres providing compulsory education and post-compulsory education*.

Thus, the participant observation, still centred in these two units (DGPO and SPE-CAT365), extended to the process of conceptualisation, design and production of these two services. The researcher responsible for conducting the participant observation participated in the majority of meetings and discussions held in both processes. This observation was subsequently complemented by interviews of personnel in the departments and city councils involved.

Apart from these interviews focused on the development of the two services, interviews about the AOC project in general were also held with members of practically all the units, organisations and institutions involved.

Permission to conduct participant observation was given in both cases (DGPO and SPE S.A.) by the respective managers without difficulties and with considerable support¹⁹. In general, the personnel in these units collaborated to a large extent in the study and accepted without problems the numerous questions and interviews that they were subjected to.

2.1.4. Fieldwork

Different techniques have been used to obtain data in a complementary manner, following the well-known methodological strategy of *triangulation* – both with respect to the techniques used and the periods when fieldwork was carried out, as well as the sources of information. Basically four techniques have been used, and the way in which they have been developed through the course of the study is presented below.

¹⁹ This support was largely due to the fact that our study, and the PIC program in general, has been financed by the Autonomous Government of Catalonia (maintaining, however, complete independence over contents and conclusions) and we had the commitment of the administration to help us in our task.

2.1.4.1. Interviews

A total of 51 people were interviewed. Individuals to be interviewed were initially selected from the bodies and institutions identified as being directly involved in AOC. In the first stage, we interviewed the managers of these units (in most cases, senior staff or middle managers). After these interviews, we used a *snowball* technique to identify new actors in the same institutions, or other institutions, that were interviewed later. In some cases the DGPO personnel put us in touch with the interviewees.

A small subgroup of interviewees (12) were interviewed again in the last phase of fieldwork, approximately one year after the first interview, to obtain information and evaluations of the evolution of the project. Finally, in a small number of cases (4) interviews were held jointly with more than one interviewee, basically people in the same team; in three of these cases the individuals were interviewed on another occasion separately. A total of 62 interviews were conducted.

In all cases the interviews were semi-structured, based on a previously established script, but very flexible and always open to the possibility that the interviewee would bring up other subjects not foreseen. Normally, the script contained a series of questions of a generic nature that were repeated in almost all the interviews, plus another list of specific subjects, directly linked to the administrative unit of each individual or to their tasks with respect to the project.

All the interviews started with a brief explanation of the research project in the framework of the PIC, explaining the basic analytical objectives, the methodology and the system of publishing the results (in the portal of the UOC (Open University of Catalonia)). Confidentiality of the information and opinions given was immediately guaranteed in an explicit manner, clarifying that their use was exclusively for research purposes.

The vast majority of interviews were carried out with the two researchers present, who alternated in asking questions in an informal manner. The average length of the interviews was, approximately, one and half hours. Nearly all the interviews were conducted in the workplace of the interviewee and in the vast majority of cases, in rooms or offices without other people present.

The record of interviews was made using manual notes of the two researchers, without the use of magnetic or electronic recordings. Considering the highly political nature of the project in the public administration, the option of recording was ruled out to avoid compromising the expression of opinions and offering information that the interviewee might consider politically incorrect. After each interview the notes taken by both interviewers were compared and then a transcription was made. Each interviewee received, subsequently, a secret code by which they were identified to serve as reference in the study. Finally, the interviews were coded using software for the analysis of contents, in accordance with the parameters and variables in the analytical model.

In general, the willingness of the interviewees to answer our questions or comment on the subjects that we raised was very good. Only in one case did someone refuse to be interviewed. Apart from this, the only notable difficulty was that in some cases we had problems in obtaining internal documents that were referred to by interviewees.

2.1.4.2. Participant observation

As previously noted, the main empirical source that the study has been based on is information collected over a five-month period of participant observation. The observation was done in two intervals: the first, from October to December 2002, at the General Direction of Operational Planning; the second, from January to February 2003, at the head office of Serveis Públics Electrònics SA.

In both cases the institutions provided us with the necessary logistic support for the normal work of a researcher (desk, telephone and computer). At the DGPO the computer was connected to the corporate Intranet and the internal network where the documents shared by the office team are stored. At the same time, at both the DGPO and the SPE the researcher was accompanied on entry by a member of the team (Rosa Puig in the case of DGPO and Ignasi Albors in the SPE) with whom questions of access for the researcher were planned and agreed.

Observation consisted mainly of regularly attending various meetings for monitoring the project which were held weekly. The willingness and collaboration of the DGPO and SPE allowed the researcher to have access to practically all the meetings (both internal meetings with different teams and those held with other actors involved in the project). In

spite of the explicit agreement that the researcher would not intervene during the meetings, there were frequent informal interviews when the meetings had concluded to clarify concepts or to investigate specific issues.

From the observation of meetings and informal interviews various texts (field notes) were written to document the events and issues dealt with, which would be analysed subsequently.

2.1.4.3. Analysis of documentation

In parallel to the participant observation and the interviews, the analysis of documentation has been another important source of information. Mainly documentation collected from three different channels has been studied:

A) Internal documentation:

Notes taken from participant observation, which were often complemented by the minutes of work meetings. We also had access to internal reports monitoring the portal (the majority prepared by the consultants) and other internal documents related to the strategy for developing the CAT365 portal (government decisions, service target files, etc.).

B) Parliamentary sessions:

Secondly, a review was conducted of the sessions over the last two years of the *Permanent Parliamentary Commission on the Information Society*, published in the Daily Sessions of the Parliament of Catalonia.

C) Press clippings:

Finally, press clippings related to the project have been collected from four months before the presentation of the CAT365 portal until now.

2.1.4.4. Analysis of web sites

To complement the other methodological techniques mentioned, an analysis of the web sites was conducted. Specifically the Gencat and CAT365 portals have been analysed with the study being done in two different periods: the Gencat portal from June to July 2002 and the CAT365 portal from May to June 2003. Whilst the same analytical parameters have been used in both cases (based on the existing literature), in the case of CAT365 the empirical study of the web site has not been limited to external observation, as this has been supported with information on the internal working processes.

2.2. Object of analysis: “Administració Oberta de Catalunya” and www.CAT365.net portal

The main object of the research that we present here is the rollout of the *Administració Oberta de Catalunya* (AOC) project, an e-government initiative jointly undertaken by the Autonomous Administration of Catalonia and the Catalan local administrations. As those responsible for the project claim, AOC is an initiative aimed “at improving the relationship of administrations with citizens and companies in Catalonia through the use of new information and communication technologies”²⁰. At the same time, however, AOC is also a project through which an internal transformation of the public administration is sought. Given the complexity of a project of these characteristics a brief introduction is required and clarification of the main elements and actors involved in this initiative.

With the explicit will to move towards the reform of the public administration and the consensus of all political parties represented in the Parliament of Catalonia, the Autonomous Government of Catalonia and the Catalan Local Administrations (represented by the Localret Consortium) signed on 23 July 2001 the *Agreement for the promotion and development of the Information Society in the Catalan Public Administrations*. Amongst the actions that the agreement envisaged was the creation of the *Consorci Administració Oberta de Catalunya* (AOC Consortium) owned jointly by the Autonomous Government of Catalonia (60%) and Localret (40%). The AOC Consortium has been responsible for the creation of the Portal for the Administrations of Catalonia, called CAT365, and the entity for unique certification, called the *Agència Catalana de Certificació* (ACC) (Catalan Certification Agency), as well as other matters.

The CAT365 portal is a tool through which it is hoped to achieve an improvement and modernisation of interactions between administrations and citizens and companies. To date this has been basically achieved through directing the project towards the online provision of public services offered by the administrations through the portal. The company *Serveis Públics Electrònics* (SPE) (Electronic Public Services) has been created for this. It is responsible for managing the CAT365 portal, which assumes the role of being distributor of the services of the administrations. The company SPE, owned by the AOC Consortium, acts as the mediating body between the administrations and citizens. Up until now, however, for reasons that will be explained later, the company SPE has only acted as distributor of services for the Autonomous Government of Catalonia as online services are not yet offered at the local level in the portal. Nevertheless, there are

²⁰ http://www.gencat.net/nova_administracio/egovern/serveis.htm

some public service projects in development to include some city councils in the portal soon.

The provision of online public services, however, is not limited to the creation of a new interface with the citizen. It also involves the preparation of a *technological platform* that supports the portal, which enables information to be transferred between the entities providing the services (currently departments of the Autonomous Government of Catalonia) and the body distributing the services (SPE – CAT365). The Autonomous Government of Catalonia has financed the construction of the *technological platform* and its development has been carried out by the consultants T-systems and Accenture. The platform, therefore, is currently the property of the Autonomous Government of Catalonia, or more specifically the Centro de Tecnologías y Telecomunicaciones (CTITI) (Centre of Technologies and Telecommunications), a public company under the Secretary for the Information Society of DURSI. The technology adopted by the project is based on commercial software (mainly Microsoft, although it includes other companies) and specifically web services (Microsoft.NET). The addition of other administrations or entities in the project appears to depend not so much on the use of the CAT365 portal, an element still subject to discussion, as in the use of the *technological platform*. The high cost of developing the platform makes it unviable for many city councils to create their own platform to provide their services. For this reason the Autonomous Government of Catalonia offers the option of partially or fully leasing their platform.

As we said at the beginning, AOC and the CAT365 portal represent much more than just a new interface with citizens. At the same time the project is considered as an opportunity to carry out internal restructuring of the administrations. Placing emphasis on the provision of services and drawing from the internal changes that this involves, the AOC project aims to accomplish a redesign of the processes that transform the bureaucratic operating model that has defined the public administration to date. In this way, the transformations sought from the project are not limited exclusively to the phase of service distribution, but also extend to the area of production. Here, parameters such as efficiency, effectiveness, automation, simplification, etc. are elements that should rule the new internal operating model of the administration. But the fact that to date only one administration, the Autonomous Government of Catalonia, has incorporated services in the portal, means that the autonomous administration is obviously the only one that has experienced the internal change arising from implementation of the project. The body responsible for driving the incorporation of the Autonomous Government of Catalonia's

public services in the portal and leading the redesign of the processes is the General Direction of Operational Planning (DGPO).

Together with the inter-administrative character of the portal, another feature of CAT365 is that it offers *multi-channel* access to public services. In this way, with only a few exceptions, services can be requested on Internet, by telephone and in person, with the first two channels being accessible 24x7²¹. For this reason, apart from the CAT365 portal, a Call Centre has been established to provide services by telephone. In spite of the existence of various channels, the interface is always the CAT365 portal (with more functions for employees in the administration than for citizens). The project also includes training programs for employees of the administration for the new provision of services.

Finally, it should be noted that to provide certain public services the CAT365 portal maintains a register of citizens of Catalonia, which they can use to identify themselves when registering with the portal. This will enable them to complete processes that currently require a higher level of security. At the same time, users of the portal are offered a free private e-mail account through which CAT365 can contact citizens.

Even though the CAT 365, established just over a year ago, is still in a very early phase of its life, the rhythm of development to date has been rewarded with various acknowledgements and awards, both at a state and European level. CAT365 is amongst the 65 projects selected for the *e-Europe awards for e-government 2003*²². In this competition, CAT365 was nominated in the categories of "role of e-government in European competitiveness" and "collaboration between administrations". The portal was placed amongst the best five projects in the first of these two categories, competing against 440 other participants. Finally, CAT365 has also been one of the five projects selected for presentation to the Ministers of Science and Technology meeting at this competition²³.

Separately, the portal was awarded the Yahoo 2002 prize in the category of "Politics and Government"²⁴ and is currently finalist amongst the *Favoritos de Expansión Directo* awards in the categories "services to citizens" and "accessibility"²⁵. It is precisely the special attention paid to questions related to accessibility that has resulted in CAT365

21 That is, 24 hours a day, 365 days a year, 7 days a week.

22 <http://www.e-europeawards.org> (access 10/7/2003).

23 http://premsa.gencat.net/display_release.html?id=12257 (access 10/7/2003).

24 http://es.dir.yahoo.com/Los_mejores_del_ano_2002/Politica_y_gobierno/ (access 9/7/2003).

25 <http://www.expansiondirecto.com/favoritos/default.htm> (access 9/7/2003).

currently having a AA rating on international standards for following directives on accessibility for web 1.0 contents of the W3C²⁶.

In parallel, the annual report presented by the Auna Foundation on the evolution of the implementation of ICTs in Spain in 2003 placed Catalonia at the forefront of the autonomous regions in its level of development of *e-administration* with the AOC project (Fundación Auna, 2003, p. 274).

²⁶ <http://www.w3.org/WAI/WCAG1AA-Conformance.html.es> (access 9/7/2003).

Chapter 3

Research questions and analytical model

3.1. Research questions

The basic objective of our research can be summarised, in a very synthetic manner, as determining what type of transformations in the working and organisation of the administration are associated with e-government and the use of Internet as an external and internal communications channel. In other words, we want to determine how organisational change and technological innovation are linked to the rollout of e-government.

In more specific terms, this question leads us to also consider other questions: what type of transformations are occurring in relation to e-government, not just in the internal organisational structure of the administration, but in its relations with citizens and other social agents?; does e-government represent a radical change in the character of the administrations and their external relations or, on the contrary, do they end up adjusting to the changes through different processes of adaptation and reconfiguration?

Secondly, we also wish to consider a series of questions related to the dynamic of the actors directly or indirectly involved, as object or subject, in an e-government project. We ask ourselves, who are the key actors in the process in this area, what are their interests and strategies, and what type of relationships do they establish with one another. At the same time, we want to determine what relationship exists in the dynamic of the interactions between these actors and the evolution of the project.

On one side, the nature of these questions endeavours to deliberately avoid the traditional metaphor of social and organisational impacts of technology, a type of analytical strategy that, as we have previously noted, presents various types of theoretical and methodological problems²⁷. The relationships that are established between the technology and social contexts of implementation is always two-way and much richer and more complex than that suggested by the notion of impact.

On the other side, the concept of e-government that we use will be quite open at the outset; as a result of all our analysis of the AOC project we will be able to offer a more precise characterisation at the end. Under no circumstances, however, will we start with by identifying the link between e-government and the use, in general terms, of ICTs by

²⁷ For a strong critique of the notion of *impact* in the context of interaction between ICT and society, see Kling (1999).

the administrations. In fact one of the hypothesis that we put forward will be focused in this direction.

3.2. Analytical model

To respond to these questions we have constructed an analytical model that endeavours to integrate two different models. Firstly, a *dimensions matrix* enabling us to differentiate four basic areas to group the range of phenomena associated with e-government. Secondly, a *diffusion model* enabling us to map the actors involved and link them with the process of the rollout of e-government.

The dimensions matrix is necessary to order the analysis of any e-government initiative. The diffusion model, in contrast, is especially suitable to explain the evolution over time of a specific e-government project, remembering that this is our case, as we are dealing with a project in an early phase of implementation and rollout.

3.2.1. Dimensions model

We will consider four main dimensions of e-government phenomena. In the first place, the provision of services that is the focus of the majority of current analysis and which, in fact, has become the nucleus of many e-government initiatives. In the second place, the organisational structure where the internal changes occur in the heart of the administration, which are referred to by many authors. In the third place, accountability, which covers aspects related to transparency, being responsible for outcomes and participation. In the fourth place, change management, where we integrate the basic strategies for e-government rollout and those related to the management of processes for the adaptation of the administration to its changing environment.

Schematically, we consider that the organisational structure is the element given to the public administration for the purposes of meeting its basic functions, the provision of public services. Both the provision of services and the internal processes that take place in the organisational structure are submitted to a certain level of accountability. Lastly, the way in which these three dimensions are modified in the context of e-government depends partly on the change management strategy that is used.

In principal, we understand that e-government may affect each of these dimensions to a greater or lesser degree, depending on each case. It may be associated with a change in

the distribution channels for services, in the orientation of its provision and in the redefinition of the role of the administration and the user of the services. It may also produce changes in the way in which it links functions, the structure and the hierarchical relationships in public institutions. It may redefine the traditional methods of accountability, strengthening or weakening some of their aspects or creating others. Lastly, e-government may represent an innovative way of linking technological change and organisational change in the public sector.

The interaction between the four dimensions is also important in this model. The changes in the procedures of the provision of services may obviously affect the organisational structure, although as we will see, traditionally it is the organisational structure of the administrative bureaucracies that have determined, to a large extent, the way in which services are distributed. Both the changes in the area of services as well as those related to organisational form, may have important implications in the levels of transparency in public management, in the same way that the establishment of new processes aimed at strengthening or reshaping accountability will affect these services. Lastly, change management, as a transversal dimension, may place more or less emphasis on the provision of services and in the internal reorganisation, indirectly affecting accountability.

A large part of our analysis will be directed, precisely, at establishing the links between the four dimensions in a framework for e-government, and comparing them with traditional links, in the specific administrative context that we will study.

Finally, it may be surprising that technology does not appear directly in this model, as another dimension for example, considering that we are looking at the area of e-government. There are various reasons for this. Firstly, technology is present in any form of administrative organisation. The processing of information, which to a large extent characterises administrative processes, always requires supporting equipment (hardware) and some type of symbolic procedure (software). Scrolls and hieratic writing were used for this purpose in the state apparatus of ancient Egypt, in the same way as mechanical counting machines and typed documents sustained administrative activity in the middle of the last century. It is impossible to understand the organisational function of an administration if we remove the technological support that underlies it.

Secondly, because technology of some form is found to be involved in the four dimensions that we have established. In fact, even in the majority of the specific variables

that we will use for each of the dimensions it is possible to find both organisational and technological elements. Lastly, because we do not want to identify e-government with ICTs in a simplistic manner. ICTs have been present in public administration, although in a very unequal manner, for the last few decades, and in any event, long before the e-government initiatives began to emerge. In addition the option of directly identifying e-government with the use of a specific branch of ICTs, the Internet, is also too simplistic and slanted to undertake its study. The role that technology develops in e-government is, in fact, an empirical question that cannot be determined *a priori*.

In order to establish the basic hypotheses of this study and guide the empirical research, we have used a set of specific qualitative variables to define the four dimensions as detailed below.

Provision of services

The provision of services groups the various processes by which a routine relationship is established between the administration and citizens (including different social agents, such as companies and professional associations). The provision of services is, obviously, a central feature of any public administration. However, it acquires a special importance in the area of e-government given that many initiatives (AOC is a clear example) are presented basically as projects destined to improve the provision and distribution of public services. We have considered the following variables that allow transformations that may occur in this dimension to be grouped:

a. Accessibility

An important aspect of the provision of services is the method of access provided to the user. The main parameters that we have considered are the different channels through which the service may be requested, the type of interface for each channel, the distribution in time and space of access, and the ways in which possible discrimination or inequalities amongst potential users are overcome.

b. Feedback

This variable may be defined as the level in which opinions, in the form of evaluations, complaints or suggestions, made by users of the service may influence any realignment of how it is provided. This may occur both from individual interactions with users as well as through methods of exploration that provide cumulative data – opinion surveys, analysis of log files, etc.

c. Simplification

The level of simplification is a fundamental variable for determining the reach of e-government. Principally it considers parameters such as the elimination of some steps in procedures, the review of service requirements, the reduction of response times and the cancellation of visits or paper documentation (certificates, receipts, etc.).

d. Efficiency and effectiveness

These two variables link the provision of services with the results, on the one hand and with the resources employed, on the other. The effectiveness is the degree to which a procedure meets its objectives. In the case of the provision of services, it depends on the extent to which the distribution of services reaches all its potential targets. Efficiency is the rate of effectiveness for a given amount of resources invested, less the undesired consequences of the procedure²⁸.

Organisational structure

An organisation's structure and the working model of its units represent the basic instrument to carry out its functions. In the case of the public administration, the organisational structure is one of the fundamental instruments to achieve one of its primary objectives: the provision of services. Nevertheless, the complexity of this area has been limited in our study to those variables that we believe to be most relevant for the analysis of e-government. More specifically, they are some of the variables that may

²⁸ For a discussion of the concepts of effectiveness and efficiency in the context of technical processes, see Aibar and Quintanilla (2002, 46 ss).

be associated, *a priori*, to a change in organisational form that we might call *network-administration*.

a. Horizontal integration

Describes the level of interactions between the units in one public administration. This interaction, which may have both political and techno-organisational dimensions, involves parameters such as the transfer of information and data or the establishment of common or mixed procedures.

b. Vertical integration

Describes the degree of interaction between administrations of different levels (municipal, district, provincial, autonomous region, state, etc.). This is of special importance in the case analysed due to the inter-administrative nature of the AOC project. As in the case above, it implies the existence of stable communication channels to transfer data and information.

c. Compartmentalisation

Indicates the degree of co-operation between the administrative units. This co-operation may be expressed through different parameters: collaboration in joint initiatives and the establishment of bodies of mixed decision, for example. This is also related to the degree of autonomy that the units have: their capacity to manoeuvre and develop their own strategies discretely.

d. Hierarchicalisation

The existence of hierarchical relationships is a characteristic trait of many types of institutions and, in particular, administrative bureaucracies. The degree of hierarchisation is related to parameters such as the number of hierarchical layers, the way in which decisions are taken and the manner in which they are implemented. It also has an effect on the access to information and the flow of internal communications.

Accountability

As we have noted, the processes of accountability are what differentiate the public administrations from other types of organisations. Accountability also represents a preferred area for reflection in the field of e-government, as we have seen. Equally, it is linked with the processes of *building citizenship* that occur, implicitly or explicitly, on configuring the procedures for the provision of services. We associate two basic parameters with accountability:

a. Transparency

Transparency is related to the volume and quality of information provided to the public on the administration's activities. This information may refer to both services or specific processes, and in this case may contain both personal or aggregate information, and processes of decision making or the mechanisms of implementing public policies. It also includes the availability of information on the rules and regulations related to a service and the commitments undertaken by the administration (response time, possibility of claims, consulting files, etc.).

b. Participation

By this term we refer to the level of citizen participation in the administration processes, aside from the formal channels of normal political representation. Participation may occur in areas related to public services and in decision making processes linked to the creation of public policies.

Management of change

In this dimension we include elements that refer to strategies used in an administration to manage change. In particular, we wish to deal with matters that we consider important to analyse the relationship between organisational change and technological innovation derived from e-government. Given the wide reach and basically transversal character of e-government initiatives, the way in which the change is designed, managed and implemented is fundamental. This is even more the case when administrative

bureaucracies are normally characterised as a paradigmatic example of immobility. In this area we consider the following variables:

a. Basic strategy

When implementing restructuring or changes in the administration, the management strategy must choose some basic characteristics that form part of any change project. In the first place, the changes may be incremental or radical. Secondly, they must choose the tools for change and inducing factors or catalysts (rules, technology, professional roles, etc.). These will be the parameters that we consider for this variable.

b. Leadership

Leadership is, in fact, a factor that many analysts consider critical in administrative reforms, particularly in the area of e-government. It has, however, different aspects: it involves not only the degree of commitment of senior management but also the ways in which this commitment is transmitted through the chain of command.

c. Resistance to change

Although this concept is used in a manner that is too problematic for many authors in the field of public administration, it can be a key factor in the success or failure of internal restructuring. It can be passive or active in character, and in the later case we will speak of "reaction to change".

3.2.2. Translation model

For the purpose of analysing the dynamic of interactions between the different actors involved in the AOC project, we will use a model that we call *translation*. The translation model includes conceptual and methodological elements of the two current perspectives in the social study of technological change²⁹.

²⁹ On the one hand, the perspective of the *social construction of technology (SCOT)* – see Bijker (1995) – and, on the other, the theory known as the *actor-network* – see Law y Callon (1992) and Latour (1996).

A project like AOC can be described as a socio-technical project. As occurs with the majority of technological innovations, the project not only implies a series of changes of a purely technical order. Instead it has changes that are equally related to the structure of the administration, the role of citizens or end users or the bureaucratic procedures. This is not only derived from the trivial fact that technology affects the area where it is used, but also from verification that there are decisions and forces involved in its configuration that are not just technical.

In a first level of analysis, taking into consideration that the interaction in the setting of the actors shapes to a large extent the outcome and final characteristics of the project, the *relevant actors*³⁰ for AOC have to be identified. The actors are identified by their position in the project (interests, strategies, problems, etc.). With respect to the AOC project the two key actors are obviously Localret and the Autonomous Government of Catalonia. Although both make up the AOC Consortium, our empirical research shows that they associate different objectives to AOC, objectives that imply quite different options, in some cases, with respect to the design of the portal for example. Hence we can speak of a phenomenon of *interpretive flexibility* with respect to the project: the CAT365 portal represents different things to different actors (it is conceived as a solution to diverse problems). The objective of the “unique inter-administrative portal” has diverse meanings for the different actors.

The continuous interaction between an actor or social group and technology also creates what is considered as a *technological frame*³¹ for this actor. This frame structures the interactions between the members of the group to the technology and includes both problems and key solutions, as well as evaluation criteria that are used to establish the correction or success levels in the operation of the technical devices. In one sense, the technological frame includes the actor's own technological culture. It is applicable both to actors or technical groups as well as non-technical groups, a point that is not trivial. The consultants involved in the design of AOC, for example, have a technological frame based principally on their previous experience in *e-commerce* and *e-business*.

The nature of the relevant actors presents a *variable geometry* in function of the dynamic and the evolution of the project itself. Actors that, in principle, appeared to share the same view of the project (Autonomous Government of Catalonia), at a certain point begin

³⁰ Meaning *relevant social groups* (Bijker 1995: 45).

³¹ *Technological frame*. See Bijker (1995, p.102).

to express heterogeneous interpretations, giving rise to new actors (specific departments, service units, etc.). The divergence between the distinct interpretations creates instability for the project, although paradoxically the solidness of the project depends to a large extent on the incorporation of an ever-greater number of interested agents (professional societies, citizens, city councils, etc.).

The evolution of the project is marked by three basic elements. In the first place, its capacity to construct and maintain a *global network* of actors that is responsible for supplying the necessary resources for the project in exchange for certain results. The resources may be of various types: financial, political support, institutional agreements, etc. If they are successful in the construction of this network, the project obtains sufficient autonomy to work on the design and rollout of its product. In the case of AOC, the global network is basically made up of the Autonomous Government of Catalonia (especially the President's Department, the Department of Government and DURSI) and Localret. At a second level, participants include the Parliament (which through some agreements represents the position of the political parties) and various entities from civilian society.

Secondly, the project must have the capacity to construct and maintain a *local network* through the resources obtained from the global network so that it can achieve the results that the actors in the global network expect. In the case of AOC the local network spans from the consultants that participate in the definition of the project (T-Systems and Accenture, mainly), the companies supplying software (Microsoft), the specific services that have to be provided electronically, to the databases that they have to connect to.

Finally, the project has to have the capacity to become a *compulsory passage* between the two networks. Both the cohesion and implication of the actors in the global network, as well as the mobilisation and synchronisation between the elements of the local network are vital for the project. But the fact that the links between both networks always pass through the nucleus of the project control (General Direction of Operational Planning and Serveis Públics Electrònics SA, in the case of AOC) is also key. If transactions occur outside of the nucleus of control, the project is weakened.

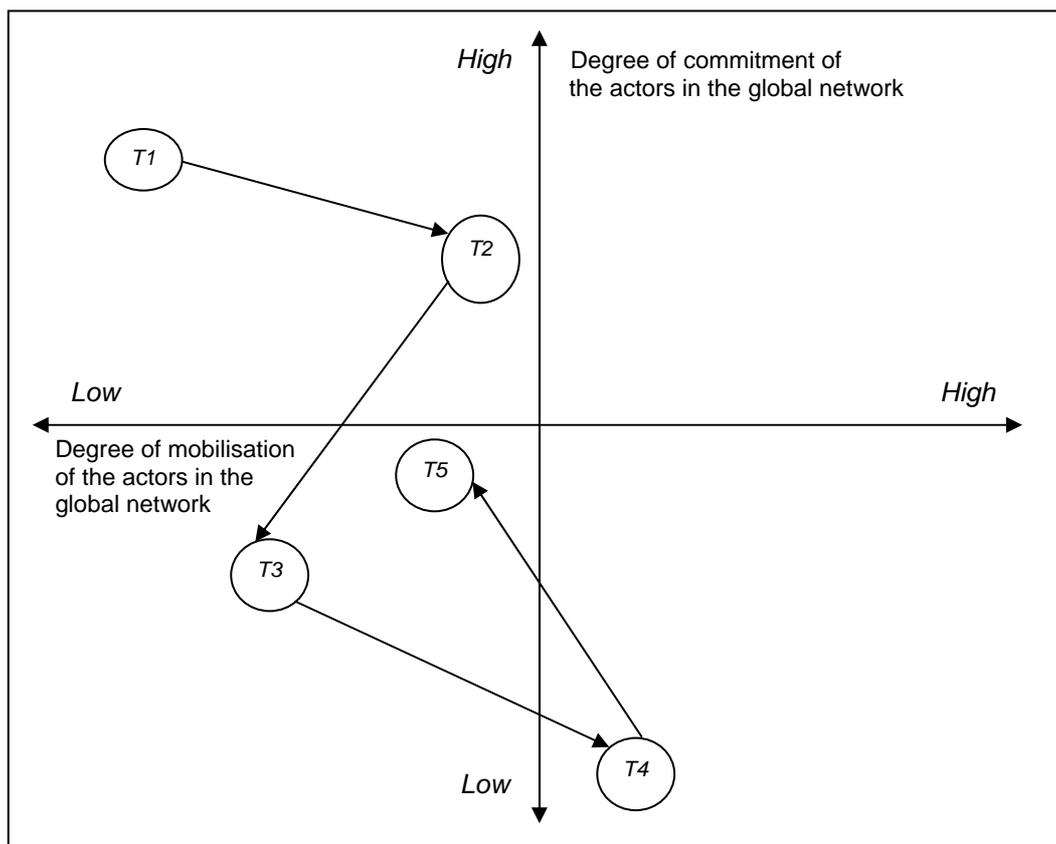


Fig. 1. Example of the evolution of a project. Adapted from Law and Callon (1992)

Both the process of creating the two networks as well as the maintenance of the project as the nexus between them also depends on the solidity and stability of the *simplifications*³² that occur in both directions – the actors limit their associations to a series of distinct entities that are well defined. For one part, the complex reality of the political institutions and the different administrations with head offices in Catalonia is simplified in the AOC project in the unique figure of the AOC consortium, made up by Localret and the Autonomous Government of Catalonia. The transactions between the project and the political-administrative context are steered thanks to this simplification. Analogously, the project simplifies the relationships with the administration and citizens in the provision of services. For example, with respect to the local network, the project simplifies the complexity of the organisation and the structure of the Autonomous Government of Catalonia, in the service units of its departments. Lastly, the actors equally codify their relationships with other actors using these simplifications: the Autonomous Government of Catalonia simplifies the political and social complexity of all Catalan municipal areas in the Localret entity. To a large extent, the fate of the project depends on the solidity and stability of these simplifications.

³² See Callon (1989).

Another important aspect of this model is that the nature of the interactions between the actors is fundamentally *heterogeneous* and also involves the technical elements of the project – these, in other words, do not have the neutral role of mere tools. For example, the imposition of behaviours or lines of action by one actor over another is not limited to the normal procedures of political coercion or institutional hierarchy. The actors try to impose behaviours by including them as technical characteristics of the project. The standardisation in the provision of electronic services that the project aims to achieve amongst the wide range of services offered from the different departments of the Autonomous Government of Catalonia, for example, partly occurs through the definition of specific standards in the data modules.

Finally, we conclude the presentation of the model of translation with a synthesis of some significant consequences of this model, which questions some common trends in the literature on e-government.

- **Linear model of technological development versus multidirectional model (diffusion versus translation)**

In the first place, a large part of the literature assumes a linear model of technological development for ICTs in the heart of the administrations, which assumes there is a sequential rollout of the phases of design, development, production and use. In turn, this implies the existence of very different roles for the different actors involved. In the case of AOC however, the design phase constantly overlaps with the phases of production and use³³, as occurs in the majority of socio-technical projects. With linearity it is usually assumed that the resulting model of innovation is the **diffusion** model: the introduction of ICTs, or web technologies, is normally described as the spread of an “oil stain” that progressively affects more areas of the administration. The **translation** model that we put forward, in contrast, highlights the constant interaction between the innovation process, the actors involved and the contexts of implementation. Every time a new actor is involved or enrolls in the project there is a certain translation of the initial objectives.

33 A normal phenomenon in ICTs and especially studied in the development of Internet. See Abbate (1999).

- **Determinism and impacts**

Related with this point, it is worth highlighting the strongly determinist technological trait that characterises many perspectives of e-government. From this point of view, the analysis of the interaction between the ICTs and the public administration is considered from the perspective of the impacts of certain technological developments in the structure, organisation and operation of the administration. The diffusion model, in contrast, allows the way in which the technology is configured to be analysed and simultaneously, it is configured for the context in which it is used. The ICTs do not land ready made in the administration, as if they had fallen out of the sky, but are modelled and adapted by the various actors involved in the project.

- **Neutrality of technology**

Another theme often present in the literature is that of the neutrality of technology. As the inverse of the determinist perspective, many times it is stated that the technology is *neutral* or that it is a simple *tool* to carry out administrative, organisational and political reforms. The prior political interests and objectives are the last thing that counts. The translation model, however, places emphasis on the possibility that the characteristics of a technological design include values, interests or instructions of certain actors, through written processes and, at the same time, on the way that these interests change due to the evolution of the project.

Context versus contextualisation

Instead of defining a nebulous context to place those forces or actors that are not directly involved in the development of the e-government projects, the translation model allows the practice of construction or restriction of a context (global network) to be included in the centre of analysis. Part of the future of a project like AOC lies in the capacity of its managers to give a context that is as stable as possible and a limited number of links that are closed related with this context. If the project is capable of absorbing and rewriting the threats and changes that occur in the context, things will go well. When this does not happen, the project losses context and stability (see fig.1).

Issue of success and “best practices”

Another significant consequence of the translation model is the issue of the notion of success or failure that is associated, often in a way that is not very reflexive, with e-government initiatives. The phenomenon of interpretive flexibility that can be detected in the evolution of the project affects, amongst other matters, the evaluation criteria and, consequently, the way of determining what its success or failure is due to. Depending on the objectives and strategies that an actor links to an e-government project, the valuation of its success will be very different. There are not only different models of evaluation that co-exist in the literature (starting with the simple and not very refined counting of online services or processes, to the number of hits on the web site) but also the different actors involved in the AOC case have a quite heterogeneous collection of evaluation parameters. This does not mean that success or failure only lies in the eyes of the evaluator, but that success or failure are the result of an active process and not just a mere intrinsic property of a design or a specific technology – something that normally appears to be assumed in the “best practices” literature.

3.3. Hypothesis

The basic hypothesis that we formulate is that in the provision of online services (being the priority objective of many e-government projects) there is a transformation in the administration that operates, indirectly, towards a network organisational structure. We understand network administration to be a form of organisation with high levels of horizontal and vertical integration³⁴.

Starting from this general hypothesis, we have formulated other more specific hypotheses, which in a certain sense try to determine the reach of this trend:

- The path to the networked administration is strongly conditioned, however, by the compartmentalised structure of the traditional administration and the pre-eminence of the hierarchical relationships on information flows.
- There is no direct link between the provision of electronic services and the increase in the efficiency of the internal processes – the positive relation between both factors depends on the level of integration between online and traditional procedures.
- The focus on the provision of services as the priority objective in e-government leads to a particular reconstruction of the citizen, where the processes of accountability are basically reconfigured and their general impact reduced.

As we will see later, the results of our study have finally obliged us to slightly reformulate some of these hypotheses. We have discovered in some cases, for example, that the relationship between two variables was explained in part by the involvement of others that, initially, had not been considered.

³⁴ Based on the characterisations that we have made of these concepts.

Chapter 4

Analysis

4.1. Provision of services

The current trend in many public administrations seems to be one of conceptualising *e-government* mainly as a strategy to improve the provision of public services. Thus, the aim of the majority of e-government projects is the improvement of the provision of public services, and consequently this can affect the processes of production, management, and distribution of those services. In this way, in addition to improving the satisfaction of the citizens through a more agile and comfortable service offering (involving such things as the simplification of documentation, organisation of processes, etc.), it is expected that e-government will lead to a reduction in costs, thanks to more efficient management and more effective policies. In this first section we will analyse the main elements that are the object of transformation in this context.

In the first place, we have established that the provision of online public services does not automatically imply an improvement in the satisfaction of citizens if what is provided represents a reproduction of the systems working in the same way as the traditional bureaucracy. In this sense, the first steps of many administrations towards e-government have consisted of transferring their organisational structure to cyberspace (departments, head offices, autonomous organisations, etc.). *E-government* is therefore conceived from the *provision of services*. However, the more advanced experiences of *e-government* (of which AOC is included) abandon this perspective that is directed at the administration itself and place the citizen at the centre of the administrative process, being structured based on the *demand for services*³⁵. Technology is considered to be an ideal *tool* to break down barriers in the administrative units and simplify access for citizens to services and information.

This transformation in the administration's relationship with the citizens that the AOC project seeks is conceived, in turn, as a new opportunity for internal restructuring of the administration. Thus, together with the emphasis on improving the provision of services, there is also the desire to improve the efficiency, effectiveness and the internal economy of the administration. However, the analysis of the AOC project makes it clear that there is no direct relationship between the provision of services online and an improvement in the internal working of the administration. In spite of the widespread belief that technology contains implicit improvements in operations, as Milner (1999) notes, technology, on its own, is not a solution "to the problems" of the provision of public services.

³⁵ A very clear example in this respect is the organisation of contents based on so-called *life events*.

In fact the interaction between technology and organisation, at least in the initial phases, seems to cause a decline in the efficiency of the administration. Through the course of our research we have seen numerous examples of this. Amongst these is the service of the *public advertisement of employment*³⁶ where it is established that putting this service into operation represents, at least initially, a clear reduction in efficiency. In this service, the sensibility of the information that employees are working with, or the unequal levels of computerisation of the different administrative units participating, results in the channels envisaged for transferring information through the AOC technological platform tending to be ignored. The loss in efficiency is quite clear in the need to establish new channels for transferring information that co-exist with the channels designed specifically for the project (*AOC technological platform*).

In general, the reduction of the internal efficiency occurs on those occasions where we find a low level of integration of the in person channel and the online channel. This is an element that we have been able to verify through participant observation. However, as is the case in many other administrations, there is no control and systematic evaluation of the cost of the services and the changes involved in its inclusion in the CAT365 portal. Nor do we find analysis that considers the results in relation to the resources invested. In fact, currently the analysis carried out with respect to the efficiency of the services that are included in the portal are done “in a more intuitive manner, seeking out the services with greatest impact and especially measuring the savings in time for the citizen and the associated facilities given their availability in Internet” (interview LSGH1910020).

Another feature to highlight refers to the legal framework on which public actions must currently be based and the slowness of the established legal mechanisms for their adaptation in a changing context. These appear to be very important obstacles for e-government projects. In this context, as one of the interviewees noted, rather than speaking of the expected impacts of technology in the organisation it seems more as though in the end there was a clear *impact of the organisation on the project*. Thus, the project has had to face “an administration inherited from the lawmakers” which has led to “a reduction in the list of initial expectations” (interview WFGP1107032). In fact, we have identified a certain *confrontation* between the two ways of working, as illustrated by the following commentary that arose in a meeting about the design of a service for the portal, where the need to reduce the number of documents required by citizens was discussed. The confrontation arose between the “documental voracity” that the consulting firm attributed to the administration, versus what the administration itself considered to be

³⁶ One of the two services that we have monitored in the participant observation.

“rigour in following the regulations”. To a certain extent, therefore, it appears that the way in which innovation is managed and planned separates the technical design too much from the context of implementation; this being the case both with respect to the legal framework that defines the administrative processes as well as the diversity of the agents that are involved.

One of the main features related to efficiency that e-government implies is the simplification of documentation and the automation of processes through technology, two features that are very closely related. In the first place it is necessary to distinguish between the simplification made possible by the establishment of communication channels for information between different administrative units on one side, and the simplification derived from the revision of administrative processes, on the other. In the first case the relationship of the citizen with the administration is simplified on reducing the complexity of the combination of departments, head offices, etc. With regards to the administration itself, once the initial investment has been made, the online transfer of this information between administrative units offers clear cost savings, and at the same time reduces the tasks of their employees and changes their role³⁷.

However, the above effects do not occur when things are not completely simplified and the online process combines or adds to the existing process in-person. In this sense situations where simplification is achieved by establishing communication channels between administrative units but without any automation of the process are frequent. At the same time, we find situations where there is automation of a process but little or no simplification. This occurs when there is a transfer from offline to online procedures, without any type of prior redesign of the service. Finally, in the narrow leeway normally provided in the regulations, the redesign of some services indicates how a good part of the improvements in simplification are not technological at all, but organisational. The steps established in the administrative processes are questioned with the objective of eliminating those that are considered unnecessary.

On occasions a certain organisational change (simplification) occurs that is not accompanied by a technological change (automation). This results in, at least in the first phase, a worsening in the work methods, given that the administrative units are required to perform the same task in less time³⁸. But the opposite situation also occurs, that is, a

³⁷ The elimination of data entry positions, for example, and if they are not accompanied by a reduction in levels of personnel, imply a realignment of labour, which may be assigned to more complex tasks.

³⁸ This is where the belief in *change by induction* is mainly centred, as we will see in the fourth part of this section.

process of automation without any real simplification. In this case, virtualisation is limited to transferring the services to Internet but without any prior redefinition of the service.

Underlying the emphasis on the provision of services, we find a reconfiguration of the relationship between the citizen and the administration that is not only limited to a better provision of services, implying a certain redefinition of the *role of the citizen*. In fact, it is not a transformation derived exclusively from *e-government* projects, but an earlier trend widely covered in recent years in the literature: the reconstruction of the user as a consumer or client of public services. Starting from this conception, the model of private management will have a predominant space in the action of the public administration. Public management focused on the client carries an associated redefinition of the individual who, conceptualised basically as a consumer, sees his dimension of citizenship or member of a political community restricted, with only certain rights.

The priority objectives and the evolution of the AOC project provide an example of these elements. The planning and strategic objectives of the project indicate from the beginning the progressive incorporation in the number and complexity of public services of the Autonomous Government of Catalonia in the CAT365 portal, giving very little space, in contrast, to political participation in the portal.

Linked to the emphasis on the development of services with online processing, the construction of the citizen as a consumer of services is reflected in AOC in the very definition of the project made by certain agents involved. Thus the principal agents of the Autonomous Government of Catalonia responsible for providing the economic and political resources, etc. necessary for the rollout of the project (*global network*) have chosen to view CAT365 as the *portal of the citizens of Catalonia*. If we consider the current situation of the portal and that the short and medium term perspectives only contemplate the incorporation of online services, almost without space for participatory features, it is clear that there is a restricted view of the conception of the citizen as consumer of services.

Separately, there appears to be a certain ambiguity between different actors involved in the definition of what is understood as public service. This has, in the first instance, consequences in the mechanisms established for the evaluation of the results obtained. In this way, when the number of services provided by the administration are counted, it is common to count the different phases of a service as specific services (break-down of

services in *micro-processes*). Behind the variability in the conception of services (something which might at first appear to be banal) is one of the underlying obstacles, that has made the rollout of the project difficult, as well as an issue with respect to which measurement parameters should be used. Let's first consider this last point.

The short history of the very concept of *e-government* creates relative uncertainty and ambiguity with respect to the goals and objectives that should be obtained. Given the lack of a more extensive experience and clear international references, it appears that many current *e-government* initiatives are mainly aimed at improving the relationship with citizens through the provision of services. In this context, the evaluation parameters to measure the success of the projects seem to be limited to the amount of services that a specific administration provides online³⁹. Essentially, the idea that the more online services offered, the more modern the administration is, has gained ground.

Although this appears to be an evaluation indicator quite widely accepted in the literature on e-government, the distortion of the results obtained is clear if what is considered as service is not shared by the different actors. In this respect, the evaluation of CAT365 gives different results depending on whether all the administrative steps of a service are considered or if they are considered collectively. But beyond this, some authors point out that the same evaluation parameter for the quantity of services is questionable. The introduction of an online service does not necessarily imply a greater level of development. For example, the administration can be proactive in sending all families with more than three children the certificate of "large family" or directly pay the support for families with children under three years of age, without having to activate an online service. The evaluation indices clearly forget this facet, such that countries like Sweden, which has followed this last trend, are placed way down in certain rankings for the development of *e-government*.

At the same time, the quantification of the number of services offering online processing hugely restricts the dimension of the changes associated to the improvement in their provision. In this way, the transformations may be limited to opening a new channel in relation with the citizen – online – whereas the procedures continue to follow the traditional manner. In the context of AOC, in many cases online processing is limited to the transfer of offline procedures to online procedures, without an internal redesign of the service itself. Although, with the current evaluation system these will be counted as

39 In certain evaluation reports, this includes information and help services. However, the emphasis basically falls on the provision of electronic services for complete processing.

online services, this does not necessarily imply a substantial improvement with respect to the parallel quality parameters (such as response time or service cost).

It is confirmed that the number of services and the number of users of the portal have become the main indicator to evaluate the development of the project, a common trend in e-government. In parallel to the divergence on what should be considered as service, some of the interviewees also question whether the number of users should be used as a significant indicator of success. In this way, it is noted that the restructuring of the administration would need to be conceptualised in a different manner: ideally it would have to be an administrative model that saves the citizens from having to go to the administration or that reduces this need to a minimum.

4.2. Organisational structure

The first important characteristic of the changes that affect the administrative processes in the context of the AOC project is that they are directly related to the digitalisation of specific services. In other words, the re-engineering of processes that can be observed is linked, above all else, to the provision of services online. It is not, therefore, a re-engineering of a strategic nature, conceived as a general plan for change that affects all or the majority of processes that take place in a unit or department based on certain parameters or general guidelines. Instead, it is more what might be called instrumental re-engineering which occurs as a consequence of change in the distribution channel for the service, or, more precisely, due to the inclusion of a new distribution channel (Internet) that has to co-exist with other existing channels (in person, by telephone, mail, etc.) which, in turn, may also be affected. Remember that the AOC project is always presented as an initiative aimed at allowing multi-channel access to services.

This subsection of the internal re-engineering to change in the model of relationship with the user is described by the project managers as a strategy that seeks internal organisational change by *induction*. A strategy that is justified, on one side, by the great difficulty that would be involved in embarking on a overall process previously, affecting the entire bureaucratic machinery of the autonomous administration and the resulting delay that this would represent for the implementation of online services. We have however identified a willingness to avoid the common strategy in previous transversal restructuring projects of limited success, where the initial great expectations had created great resistance.

In any event, keeping to the processes that are involved in the specific services, our research unveils different problems that characterise the re-engineering initiatives associated with the AOC project, which are partly due to what we have called their instrumental character. In general a low integration of new online activities and traditional activities is observed. The new tasks associated with the project are often superimposed on the tasks already carried out, a phenomenon that was already present in previous initiatives to provide online information through the portal of the Autonomous Government of Catalonia. Often the new online distribution channel is added without being fully integrated to the channels already established: this duplicates the work of entering contents and increases the workload for departmental personnel.

These phenomena occur for various reasons. For one part, the irregular state of the existing databases in the departments; databases that usually have not been designed to be open to outsiders, but only to automate specific processes. Secondly, the strategy of *induction* from the project managers that we have noted, is interpreted by the departments as the command to “virtualise what was done before”, without any clear instruction to rethink the processes. Another possible explanatory factor is the distance produced between the design of the online service and the context of implementation. Often this distance leads to the previous design (for example, the format of the online applications and forms) clashes with the specific work circumstances of the personnel responsible for the service.

All this has two important consequences with respect to the organisation. Firstly, the new e-government tools and the associated activities tend to become an appendix, related in an *ad hoc* manner to the existing organisational structure. Secondly, a degree of *organisational chaos* arises, as the new functions have to co-exist with the old ones, often managed by the same employees.

Another aspect of the interaction between e-government and the organisational structure of the administration is related to the possible changes in the relationships between different administrative units. We speak of *horizontal* integration when these units belong to the same administration and *vertical* integration when they are administrations of different levels (local, regional, state, etc.). Due to the inter-administrative nature of the AOC project, both types of phenomena can be analysed.

The AOC project has a slight indirect effect on the interdepartmental working relationships, given that it acts as a bridge between the various departments involved in each service. Equally, the project also indirectly plays a role that is quite relevant to some units that have a clearly transversal character. Both elements tend to strengthen a certain transversal culture in the institution, quite weakened to date. The factors that make this type of inter-departmental co-operation difficult, however, are those derived from the compartmentalisation of the general structure of the autonomous administration. In addition, a strong identification between function and structure is detected: public services that one unit offers are, to a certain extent, considered to be their “property”. Units feel responsible for the services that they own and it is difficult to establish responsibilities for services that involve units from different departments.

The main difficulties in the connection between different computer systems are related in the first instance to the state of the databases of the different units. Another important difficulty is found in the combination or mutual reinforcement that occurs between the organisational fragmentation and technological diversity. Expressed differently, the compartmentalisation of the organisational structure is accompanied by great heterogeneity in the technical solutions chosen by different departments. Another important factor is the identification that occurs between the administrative units and the information that they manage. In some cases, the units display little willingness to share the information that they have and interpret the opening of their databases to the AOC platform or other units as a loss of responsibility or power in the organisational context. Finally, a certain dilution of leadership through the hierarchy is also detected.

With respect to vertical integration, it should firstly be noted that CAT365 is presented, principally, as an inter-administrative portal, established to provide services to all the administrations and, in particular, administrations at different levels. The obstacles to inter-administrative cooperation are, curiously, very similar to those cited in the intra-administrative area, aggravated by the number of actors involved, amongst other things. In fact, the AOC project has not been able to implement, to date⁴⁰, any service that incorporates other administrations in an effective manner, in particular municipal administrations, other than the autonomous administrations. This is a clear symptom of the difficulty of establishing stable inter-administrative cooperation links.

The heterogeneity in the degree of technological innovation incorporated in the administrative processes in different administrations also represents a serious obstacle. Often it makes it impossible to connect the databases or allow external queries. Similarly there is evidently a strong identification or relationship between the information and the administrative or institutional structure. The transfer of data or the opening of information systems to other administrations is often interpreted as a loss of responsibility and political power. Lastly, from a local perspective, certain concern is expressed about the "ownership" of the CRM⁴¹ data that the AOC platform is based on. The great potential value of this information, which can be used to personalise services or to design more effective public policies, raises the question of access.

In short, our study detected a still *precarious* relationship between technological innovation, represented by an e-government project, and the organisational changes in

⁴⁰ July 2003.

⁴¹ Client Relationship Management.

the administrative structure. This is basically the product of the same development strategy for the project (instrumental with respect to digitalising services) and the low integration between the new processes dependent on the new interface serving citizens via the Internet and the old processes.

On one side there is an evident overlap between the processes related to the provision of online services and the traditional processes, with a resulting increase in organisational complexity and a decline in efficiency. This overlap is both technological and organisational. The restructuring that occurs mainly affects the distribution of services (where citizens can enjoy an increase in the effectiveness of services) much more than the operational, structural and infrastructure technologies that are used in their production. E-government tends to establish itself as an appendix to the structure. However, it should be pointed out that the conflicts identified cannot be conceptualised generally as a clash between technological innovation and the organisational and structural inertia of the administrative bureaucracy, not exactly open to change or internal restructuring. More than a simple confrontation between technology and bureaucracy, what is observed is a battle between two hybrid arrangements, where both technological and organisational features are mixed.

In the traditional arrangement, the articulation between ICTs and organisational structure is characterised, as we have seen, by a use of technology principally focused on the autonomy and internal requirements of the units, basically the automation of certain processes, due to a strong overlap between the ICT based information systems and the structures that maintain them, and finally, due to a subjection of information flows to the relationships of control and hierarchy. In the new arrangement represented by the AOC e-government project, in contrast, the use of ICTs crosses the structural divisions and is oriented in the first instance towards the provision of services to external agents, the information systems technology is separated from the structure and associated especially with function, and consequently, the information flows tend to undermine the vertical hierarchical relationships.

It is incorrect, therefore, to analyse e-government as a process of introducing a certain technology in the core of a specific type of organisation. Those studies that try to describe the impacts, effects or consequences of an ICT or Internet technology in the public administration are insufficient. In fact, it is possible, under the same scheme, to raise the question about the inverse relationship: to what extent does the organisation affect or impact the technology.

The AOC project, understood as a socio-technical arrangement, tends to move towards a restructuring of the administration in the form of a *network*⁴² where flexibility, openness to the surrounding environment and adaptability are given priority over isolation and the traditional rigidity of the bureaucratic structure. We have seen, however, how this confrontation generates serious problems that, in fact, are the main cause of the delays that have occurred in the rollout of the project compared to the initial plan.

42 On the concept of the network as a new social morphology, see Castells (2001^a, 549ss).

4.3. Accountability

The *uniqueness* and *specific nature* of public management with respect to business management is a question that has been widely debated in the literature for many decades; we will save the reader from the discussion of the arguments behind the distinct positions on this question⁴³. However, there appears to be a fairly general agreement that the main distinction with respect to the private sector stems from the fact that the public administration is subject to the processes of accountability, a distinction on which the theoretical proposals for e-government appear to be having a particular bearing. Unlike the private sector, which assumes its responsibilities in the market, governments tend to account for the commitments made with citizens in the course of democratic elections, on the one hand, and in the framework of a system that considers the obligation to provide a level of transparency in political processes and management of the administration on the other. In other words, accountability affects both the *ends* of the public administration, that is, their political commitments, as well as the *means* used to achieve them, namely the management of the available resources.

In the context of *e-government* projects it again appears that ICTs have been associated with the capacity to provoke a very substantial change with respect to the processes of innovation in accountability. ICTs are conceived as being a fundamental element to promote transparency in public sector activity facilitating information to citizens. But beyond this, ICTs can also make room for the political dimension of the concept of the citizen leaving space for the political participation in exercising power. We will see below how innovation in accountability is present in the AOC project.

In previous paragraphs we have already shown how a certain reconstruction of the citizen acts in a particularly determinant manner in e-government projects. Based on this element, we have distinguished between accountability when the administration adopts an orientation towards the citizen as a client and the innovations in accountability when the citizen is considered as a political subject. In function of these elements, even though the boundary between them is at best diffuse, the transformation represented by e-government will naturally have a greater or lesser reach.

The orientation towards the citizen as user of services has been taken in the majority of e-government projects to date. Thus a large amount of the innovations in accountability

⁴³ See Gunn (1997) for a critical assessment of this debate and a review of the different positions.

are concentrated in the provision of services, improving and increasing information about the internal processes and the results of the administrative activity. Various transformations occur in this sense. Firstly, one of the most relevant transformations of the AOC project involves the incorporation of computer software for commercial management, such as CRM. These tools tend to provide important benefits with respect to the control and operation of the administration. However, tools such as CRM also have to enable improvements in *tracking* administrative actions, giving *clients* the possibility of being able to personally monitor the phases that their service request goes through. This is, without doubt, one of the most relevant questions with respect to innovation in the transparency of services: to open and provide information about the administrative steps that the processes go through makes the inner-workings of the administration more visible.

Secondly, the improvement in transparency also appears to include the establishment and division of responsibilities of the administrative units involved in the provision of services. In this sense, the willingness to include *Service Declarations* for all the processes incorporated in the portal represents a very important jump in quality according to several interviewees. In parallel, the project has increased the volume and type of information about the services, principally from *dynamic queries* or *interactive queries*.

A third element is the possibility of encouraging the indirect participation of citizens in the working of the administration by promoting *two-way* communication channels. Allowing feedback from citizens, through surveys on the use of services, for example, introduces accountability factors in the operation of the administration. In this sense, as noted by Dunleavy and Margetts (2000), web logic appears to enable clients of the administration to be taken more into consideration, using their feedback to re-engineer the public services; at the same time citizens and governors can monitor procedures more directly through a process of disintermediation. So far, however, the feedback of citizens has only been taken into consideration in the project indirectly. Thus, although surveys on the use of services have not been conducted yet, for example, the departments regularly receive data on the use of the services offered in the portal. In addition, channels to resolve queries about the services and to receive suggestions or complaints have been set up. The consequence of this is that citizens have a relative influence with respect to the design, usability and accessibility of the portal. However, citizen involvement is restricted to this level and spaces for political participation are not exploited, as we will see.

There is a conceptualisation of e-government projects where the different phases of development over time are established, from lesser to greater levels of complexity. In this conception, the accountability dimension related to political participation is left for the later stages of the projects. This element, as noted in a study by the Bertelsmann Foundation (2001), increases the difficulty of the already complicated task of opening spaces for real participation, to the extent that it becomes very complex to integrate the political participation *a posteriori*.

In effect, in the interviews with management of AOC we have verified that the elements of citizen participation are a secondary objective of the project. At the same time, some interviewees indicated that the current focus of the few spaces for participation that the portal currently offers are not ideal and their democratic capacity is questionable. In the words of one interviewee "...currently the only space for participation are the chats and forums, tools that precisely because of the type of people that are going to participate, work along the lines of favouring the creation of pressure groups" (interview RKGS0312023).

Irrespectively, the space dedicated to the participation of citizens in political processes is practically inexistent in the majority of governmental portals all over the world, CAT365 included. Here, as indicated in the above interview, the participation spaces are limited to chats and forums, the majority focused on questions related to information on services or leisure, practically without any space for political discussion.

In general, then, it is verified that the emphasis on the provision of services that guides the project seems to encourage a very strict interpretation of accountability. Instructions for transparency and responsibility are limited to the procedures involved in the processes and the basic design of the project.

The second feature to highlight has already been briefly introduced in the section above. The introduction of computer technology in the administration makes it possible to control activities of the units more thoroughly. The processes are registered and stored in the specific databases, making the information much easier to aggregate and manage than in the traditional systems.

It is clear that the Autonomous Government of Catalonia did not begin its computerisation with the launch of the AOC project. However, e-government projects appear to accentuate the possibility of controlling and systematically studying the administrative processes involved, to the extent that they seek to centralise information for the provision of services. More specifically, in the case of the AOC project, the introduction of CRM provides even more possibilities to exploit this area. This tool allows services, units, administrations, etc. to be compared using standard indicators, and is relatively agile. In this way, we find a positive relationship *a priori* between the virtualisation of services and accountability. Thus, the e-government projects indirectly allow accountability, not only because information is more accessible via Internet, but also because the actions can be tracked.

It is not only the government that plays a role in defining the reach of transparency, as other agents participate with decision making capacity and shares of power. In our research we have detected a degree of tension between accountability and the *network of agents* that participate in the processes of service provision. As an example of this we have principally taken the Department of Education's *online service to register for schools* (we have followed its design through participant observation). This is illustrated below.

Dale (1989) observes how many years ago the provision of public services in western countries changed from being an activity carried out solely by the State, to become an area where a wide network of actors participate, both public and private, influencing the decision making processes and implementation of public policies. Whilst, as the same author notes, this trend is particularly acute in the world of education, it seems clear that this phenomenon is also present in other public services.

In the case of the registration service, in the context of the educational system, the framework of actors that participate directly or indirectly in the definition of the service is particularly complex. Apart from the agents involved in the AOC project (the departments, the consultants, the municipals, etc.) the network of agents includes actors from the educational field itself (mainly associated private schools). These are agents that are not aware of the initial conceptualisation or, at least, their effective participation is not considered in the design of the service (the presence of the associated private schools is *simplified* through the Department of Education) but given the weight that they have in the educative arena they end up indirectly influencing the final outcome of the service.

Associated private schools are subject to the same student selection criteria as associated centres. However, monitoring of the registration service shows how in some cases the associated private schools have a degree of autonomy and use their own criteria in selecting students. Opening the registration process to Internet raised a series of difficulties with respect to this question and this was, in fact, one of the main reasons why in the end the service was not included in the portal.

If educational activity is not the exclusive competence of the governments, accountability is not just restricted to their activity, but in principle affects the rest of the agents involved as providers of a public service equally. However, these agents are not necessarily guided by the same criteria as the public administration and in practice it appears that they are not required, at least to the same degree, to be accountable for their actions to the public. As noted by some of the department managers, their activity is seen to be limited by the real responsibilities in the registration process and their authority when making decisions about the action of the associated centres. In this sense, this service reveals the ambiguity of the limits of action that the associated private schools have in practice.

The relative autonomy that the associated private schools enjoy in their operation, which we could observe in the design of this service, displays in the first place the potential conflict with respect to the control that the administration has over public services and the external agents that participate. However, at the same time, it is noted that as a consequence of carrying out a process that favours transparency in public services, the tacit policies that define the activity of the agents are revealed. The logic of the web, which we have seen makes the actions of agents (*materialisation*) more visible, results in elements like the selection criteria of associated private schools become explicit. Transparency, therefore, can become a factor that blocks the implementation of online public services.

Opening computer systems to the public to improve the provision of services and, indirectly improve transparency, appears to generate difficulties because it uncovers tacit policies and the implied presence of groups with a certain level of influence or power.

4.4. Management of change

As a project that in part seeks an internal transformation of the administration, AOC has opted for a strategy that we have called *change by induction*, to some extent a break from previous attempts at restructuring initiated from within the Autonomous Government of Catalonia, consisting of improving the provision of public services to citizens to indirectly provoke a transformation and internal modernisation.

In our research we have verified that there has been, at least in the initial phases, an increase in efficiency through *change by induction*, and in general a clear commitment to the reengineering of processes normally associated with e-government. In many cases the inclusion of public services in the portal worsened, for example, the working conditions of the personnel in the administration, duplicating some of their tasks and complicating others. In this context a certain *organisational chaos* is generated that appears to go against the basic objectives of the project. Nevertheless, it is trusted that in the end this will work in favour of internal change, given that it is the pressure of the environment (working conditions, efficiency, commitments made, etc.) that will mainly induce restructuring in the processes and the productive technological modernisation within the administrative units. Technology, therefore, is conceptualised as a catalyser of organisational change⁴⁴.

We see how the *change induced* has a markedly *instrumental* character, in that it is produced from the objective of improving the provision of services offering them online. In other words, the main objective of the project is to offer services to citizens via Internet and the improvements in efficiency, simplification, etc. are secondary objectives. At the same time, and closely related to this element, it is noted that the so-called *technological fix*⁴⁵ operates in a deterministic manner. It appears that a strongly determinist vision of technological innovation tends to strengthen the impression that the introduction of new technology at the core of the administrative processes will induce, almost by itself, radical changes in the workings of the administration.

From this transformation strategy, AOC is initially conceived as a project of incremental development based on the inclusion of an increasing number of services. The inclusion of services in the portal is planned in successive stages paying special attention to the incorporation of a significant volume of services with a big demographic impact

⁴⁴ This element has also been noted by analysts like Fountain (2001^a, P. 195).

⁴⁵ *Technological fix* refers to the trend to adopt any type of technology based on its technical merits and not so much on an evaluation of the social consequences of its adoption.

(consequently giving the project greater public visibility). However, one year after the portal was launched, the strategy has been modified after considering the views of the different actors involved.

The modifications do not change the original strategy significantly, but they reduce the speed and the reach of the services to be included in the portal. One interviewee summarised the change in strategy as follows: “at the beginning it was necessary to justify the project with a lot of services. Now that we have them it is necessary to make a significant qualitative leap so that citizens have few or no procedures to do” (interview EXGC3010033). Accordingly it appears that more internal change will be observed in factors like simplification, efficiency, automation, etc.; factors that “they initially did not want to push given the difficulties that they might generate between departments and their possible negative reaction” (interview EXGC3010033). This *reaction* is usually conceptualised as *resistance to change*.

In fact, the *resistance to change* shown by the employees of any organisation, and especially the public administration, is normally considered as a common phenomenon and to a certain extent part of restructuring projects. This consideration is not only found in specialist literature; in our research we have noted how the very agents involved in the project continuously use this as a factor to explain a good part of the project's obstacles.

Resistance to change is partly associated with the difficulties of modifying or transforming a fairly stable working tradition. In this sense, as one of the interviewees explained, the initial difficulty that had to be faced in the definition of the online service was “how to make the traditional work procedure fit the online practice, ensuring modification of the least number of elements possible” (interview HSGC1312024).

Those responsible for the strategic development of the project also consider *resistance to change* as one of the main stereotypes characterising workers in the public administration, particularly true of civil servants. It is a widely shared belief, not only that the bureaucratic system blocks innovation and change, but also that the situation of relative job security held by the civil servant often produces a desire “not to complicate work” (FSGQ0203032).

We will not discuss here the validity of the popular statements made about the figure of the civil servant. However, we believe that it is necessary to question the proposition that the previous elements are the main factors explaining the phenomenon of *resistance to change*. In our research we have verified that, in analytical terms, it is difficult to consider resistance to change as a non-problematic explanatory element. Instead, it ends up being a simplistic argument to understand a good part of the conflicts surrounding restructuring projects – its use in a non critical manner leads to shortcomings not foreseen in the project's implementation being overlooked.

These shortcomings are clearly visible in some of the issues that we have already commented on. In the first place, we have seen how one of the initial difficulties in the implementation of the AOC project refers to the coexistence of online and offline procedures. In addition to affecting the efficiency of the services, in these situations the working conditions of the employees often worsens. In some cases this phenomenon has required the project to be made more flexible to allow the operation of the in-person service, returning to the old applications (without using the AOC platform).

Secondly, the distance between the design of the services and the implementation context is one of the motives explaining some of the confrontations that have occurred. We should keep in mind that the design of the project depends to a large extent on the consultants, such that the design of the specific electronic services takes place, to a large extent, outside of the real context (regulatory, juridical and organisational) of the application. At the same time, it appears that the rhythm of the development of the project's technical elements and the time required for the legislative changes appears to be very clearly out of sync.

In addition to the two elements above, there are others that question the *resistance to change* as a key explanatory factor: they are the elements linked to the communication and promotion of the project. A significant number of the interviewees indicated that the difficulties in communication experienced by the project had occurred in two directions. In the first place, a substantial part of the promotion of AOC within the Autonomous Government of Catalonia was based on a hierarchical communication of the project. Thus, the political support that the project enjoyed enabled it to overcome issues that would otherwise have been difficult to clear for a unit like the DGPO and even more so in the case of external entities such as the consultants or the company SPE. At the same time however it is noted that the hierarchical communication diluted the information on the project due to the large number of political and administrative layers that it had to

pass. As one of the interviewees noted “the information that comes out of the top level of the administration has not reached the intermediate and lower levels with sufficient impact. The councillors have a very clear concept of the project, but when you go down to the intermediate and lower levels, the clarity and knowledge gets lost (interview AKPB0102031). Thus, in an important sector of the departments there is *ad hoc* knowledge of the project: the *instrumental change* which we referred to results in employees of the lower levels having knowledge of the project, principally, when they are directly involved in a service to be included in the portal.

But the communication difficulties also operate in another direction. Secondly, we have established that often there are problems of comprehension due to a shock between different *cultures*. This confrontation is found, for example, in the use of dense and complex technical language by actors developing the project, which the departments claim not to understand. In this sense the introduction of business vocabulary on one side and specialised terminology that surrounds ICTs on the other, leads to the use of very closed linguistic terminology that causes significant problems of comprehension.

Another important element that we have found in our research refers to the processes of homogenisation between administrations and the leadership of the project. With respect to the first question, DiMaggio and Powell (1983) indicate that, usually, organisations under the same conditions experience processes of *institutional isomorphism*, leading to a homogenisation between them. Amongst the three types of *institutional isomorphism* the authors identify⁴⁶ *mimetic isomorphism*, which occurs in new situations where the goals are ambiguous or uncertain and there are no clear evaluation criteria. In this context the process that operates is an imitation of the development strategies of other organisations that have successfully innovated. Imitating other administrations shows signs of dynamism to the other agents that the organisation relates to, at the same time legitimising the action. We believe that this has been a significant factor in explaining the haste and determination with which the AOC project has been undertaken. As one interviewee indicated, “it was necessary to be involved in e-government and not fall behind” (interview TXFS1706038).

Secondly, we have already signalled the importance of leadership for the project. However, leadership does not always resolve the difficulties encountered, such as the heterogeneity of technological development amongst the different units of the Autonomous Government of Catalonia. This heterogeneity is largely the result of the

46 The three processes are coercive, mimetic and normative (DiMaggio and Powell, 1983, P. 151 ss.).

degree to which the administration is compartmentalised and the relative operational autonomy that the various departments enjoy, a situation that AOC, as a transversal project, has to confront continually. In this context, as we have signalled at the beginning of this section, technology appears to have been the vehicle used as a tool to overcome compartmentalisation. Thus, in less than a year there have been two government agreements that impose standard models and homogenise internal operations⁴⁷. In this way, the restructuring initiative is based principally on technological innovation, through which the aim is to promote changes of an organisational, political and, naturally, technological character. This phenomenon can be described as casting directives of a political and organisational nature through technological standards; a phenomenon that has been conceptualised as *inscription*⁴⁸.

The difficulties appear because the specific technological development of the administrative units carry normative and organisational elements written into their design that are only perceptible when separated from their context of use. The databases of a unit, for example, far from being simple technical tools, incorporate specific characteristics of the organisational culture in which they have been designed (from criteria to identify users to the profile to access information). In this way, in the implementation of the AOC project there is a clash between two ways of articulating technology and the organisation: that which the project tries to impose and that of the departments. Therefore, departments have a historical relationship with a particular technology over which the AOC is superimposed as a transversal project. It is precisely here that we will find some cases of *resistance to change*, rather than simply just *resistance per se*.

47 From the obligation to foresee a multicanal system for all the new procedures directed at citizens and companies, passing for the incorporation of TIS and contact telephone or e-mail on all the forms, to the connection in the CRM. (Government agreement 11 May 2003).

48 See, for example, Akrich and Latour (1992) or Akrich (1992).

4.5. The actor network

The concept of the *global network* is an analytical tool designed to more precisely treat what is usually described as *context* of a project of technological innovation. The global network basically has a dual objective: for one part it has to supply the resources, of different order, so that the project can develop; for the other part, it has to generate a *negotiation space* that allows a space and time to be established in which the local network can use the resources to carry it out. In the AOC project, the global network can be clearly identified with the AOC Consortium where, as we have seen, two institutions are represented: the Localret consortium and the Autonomous Government of Catalonia.

In reality different projects depend on the AOC Consortium, amongst which only two have crystallised as tangible products: the Agència Catalana de Certificació (Catalan Certification Agency) and the inter-administrative portal CAT365, the object of our study. In the case of the portal, the public company Serveis Públics Electrònics (SPE), currently owned by the Consortium, is responsible for carrying out the project and co-ordinating the transfer of services from the different administrations in the new online distribution channel; in short, it acts as manager of the portal. In the case of the services that come from departments of the Autonomous Government of Catalonia, there is a specific unit, the General Direction of Operational Planning that acts as sole co-ordinator or controller of the project, acting as mediator between the departments, as the producers of the services to be digitalised, and SPE as distributor of the services. These two actors exercise effective control over the project, albeit to different degrees, and co-ordinate and mobilise the actors of the local network, which we will refer to from hereon as the project's *coordination nucleus*.

The local network, for its part, is made up of actors charged with supplying the elements necessary for the project to work properly, that is, "pieces" of different materials and shapes that are needed to make-up the "CAT365 portal". These are elements of a very heterogeneous nature: servers, designs for the users of the services, digitalised services, common data models, technological standards, etc.

The local network of actors is made up of private consultants that are involved in the design of the services, basically T-Systems and Accenture, the units of the different administrations responsible for the services that are to be integrated in the portal, which to date come principally from the departments of the Autonomous Government of Catalonia, as we have explained, and lastly the CTITI as supplier and manager of the

required technological platform. In a certain sense, the technical elements that support the project also belong to the local network, from the technological platform to the specific operating system that it will use.

An important strategy to understand the dynamic of interactions between actors is to analyse the different visions of the project that are expressed. In this sense, we observe that different actors view the AOC project in distinct ways, which at times are quite divergent. This phenomenon of interpretative flexibility is important because, beyond the purely symbolic notion, different interpretations are often associated with the consideration of different problems and may lead to opposing positions with respect to the lines of action to be followed.

In the case that we are examining, for example, there are two basic interpretations about what the project should be, in terms of its overall characteristics. On the side of the Autonomous Government of Catalonia they support the consolidation of AOC as a new inter-administrative portal, where ownership is shared between the autonomous administration and the local administrations, based on a specific technological platform that can distribute services of any administration. From Localret, in contrast, the AOC project is seen as the possibility of activating a communication channel via Internet between all the administrations, without the need for it to become a new portal, allowing access to any type of service from the portals of the different administrations – a type of “invisible platform”.

The private consultants, responsible to a large extent for the design of the new portal and the services, also seem to have a slightly different view of what AOC has to be. Influenced by a tradition much closer to e-commerce and e-business, they transfer their private sector strategy to the public sector, with little adaptation. The new CAT365 portal has to become, in their view, a strong magnet for clients focused on becoming a portal of reference for all citizens, almost in the same way as the large commercial portals in Internet. This interpretation of the project consequently gives priority to the objectives of increasing the number of visitors, of building user loyalty and especially promoting the number of transactions done through the portal. A view that, in fact, during a large part of the project's rollout and until recently, has been shared by the Autonomous Government of Catalonia itself.

Nevertheless, in order to understand the process of change and evolution of the project, the concept of interpretative flexibility is not sufficient: it is necessary to model the same process of gaining meaning. This is what the *technological frame*⁴⁹ allows us to do. The process of interpretative flexibility that we have just described can be understood as the result of the collision between two different technological frameworks, with their values, objectives, solution matrices and specific example outputs. We return to the formulation that we have already detailed of the technological framework for one part, which we could now call bureaucratic. Here the articulation between ICTs and organisational structure is characterised by use of technology principally oriented towards autonomy and to the internal affairs of the units and basically focused on the automation of certain processes, due to a significant overlap between the computer systems based on ICT and the structures maintaining them and, finally, due to a subordination of the information flows to leadership and hierarchy.

On the other side, we find the technological framework of e-government, where the use of ICTs is transferred to the structural divisions with priority given to the provision of services to the external agents. The technological information systems are separated from the structure to be associated above all else with the function and, consequently, the information flows tend to undermine the vertical hierarchical relationships.

In the framework of our actors' model, the administration units responsible for the different services display a very high level of inclusion in the bureaucratic technological framework, whereas the private consultants, as well as the nucleus of the project leaders clearly belong to the second framework. The confrontation between both technological frameworks, which have we have seen is manifested in the normal course of the project, is without doubt one of the most important challenges for its promoters. The confrontation between different technological frameworks and the processes of interpretative flexibility that occur is not, however, the only factor of instability that endangers the rollout of the project.

Questions also arise about the structure of relationships between the global network and the local network, as well as the role of the coordination nucleus, which are also susceptible to suffering certain dysfunctions that may act as destabilising factors for the project.

⁴⁹ For a description of the characteristics of this concept and a discussion of its theoretical and methodological implications, see Bijker (1995, 190ss).

In the case of AOC some problems can be detected in this area. Firstly there is a certain asymmetry between the actors in the global network, and between them and the coordination nucleus. This asymmetry is displayed in distinct aspects. For one part, the Autonomous Government of Catalonia maintains a direct relationship with a project management unit, DGPO, which coordinates the elements of the local network to provide the online portal services of their departments, a unit that does not exist, as such, between the Localret and the local administrations. For the other part, the relationship that the senior management of the Autonomous Government of Catalonia involved in the AOC consortium have with their structural units is hierarchical, whereas the relationship that the Localret has with its associates is representative and, under no circumstances, hierarchical. Localret cannot establish directives that the city councils are obliged to comply with, for example. This conditions the rollout of the project enormously, because as we have said, some of the resources that the actors in the global network have to transmit to the local managers of the network are of a political character (in the form of leadership, mandates, supervision, etc.).

Secondly, the flow of economic resources also displays a clear asymmetry. In fact, the AOC Consortium does not have its own resources: in principal the administrations involved are required to finance the projects that they undertake. The Consortium only recently acquired the company SPE, which was previously owned by the Autonomous Government of Catalonia. In addition, the Autonomous Government of Catalonia also owns the technological platform that supports the portal. In principle it is planned to establish bilateral agreements with the city councils that wish to use the platform to offer their online services through the portal.

In addition to these questions, another source of instability in the global network has been the conflict about the "visibility" of the administrations in cyberspace. At the local level the idea defended is that as the municipal administration is closest to citizens, the municipal portals also should be a possible access point for inter-administrative transactions. In fact, from the local level and from Localret the perception is that CAT365 has become a public domain, an initiative more of the Autonomous Government of Catalonia than the AOC Consortium. In this context, the publicity campaigns in the press, radio and television about the portal have also been a source of conflict.

These types of problems, which are also related to the interpretative flexibility question that we have covered in the report, have created considerable political tension around the project. This has resulted in the global network represented by the AOC Consortium

seeing its role as project promoter and supplier of resources for implementation weakened. In fact, the management capacity of the Consortium, and in particular, their ability to implement has recently been called into question in political circles.

Problems have also been detected in the role that the management group have to play as *an obligatory checkpoint*. Focusing only on the area of the Autonomous Government of Catalonia, for example, since the launch of the portal several departments have continued presenting initiatives in Internet separate from AOC. Some of these initiatives have been large portals where a significant part of their content has been aimed at providing different types of services to citizens, companies and collectives, through the Internet. This type of activity, which might be described as a form of organisational bypass, has not helped to consolidate the AOC project as the only outlet on Internet for online services of the Autonomous Government of Catalonia.

The model that we have used to analyse the behaviour of the various actors involved reasonably directly in the project has enabled us to explain some of the phenomena that we have presented and discussed in the previous sections. On one side, the existence of two different theoretical frameworks, and on the other, some dysfunctions in the actors' network, are found at the core of the principle problems affecting the rollout of the AOC project. However, in spite of these phenomena, the AOC project continues to operate. To date, none of the conflictive situations that we have analysed have led to a breakdown of the network of actors or a collapse of the project.

Two facts can be used to justify this. Firstly, the collision between the two technological frameworks has to date been manifested in a very reduced space. We should remember that the project to date has only directly affected a very limited number of services, compared with the total number of services of the autonomous administration that could be integrated in an online channel of the portal. Secondly, the project has been sufficiently flexible to absorb the instability generated, both from the local network and the global network. The project's coordination group has been able to reshape the project immediately, adapting it to the new elements that have emerged from the various conflicts that we have mentioned. The project has been continuously *contextualised*⁵⁰ as it has been able to incorporate into its design the transformations that have occurred in its environment.

50 For a discussion of the concept of contextualisation – opposed to the traditional distinction between content and context for the analysis of technological innovations-, see Latour (1996, 280ss).

But the project is not the only element that has undergone transformations over time. Or in other words, the technology of the portal-platform has not been the only agent that has had to reshape itself. Its destiny is not just the product of a play between stable actors with a solid repertoire of interests and problems. As we have pointed out, some of the actors have also seen their composition and interests change through interaction with other agents during the course of the project's rollout.

Chapter 5

Conclusions

Before directly considering the series of questions and hypotheses put forward in the first part of this work, it is necessary to take into account the methodological and empirical framework of our research. We have carried out a case study on a single e-government project – AOC – focusing mainly on the transformations and conflicts arising due to its implementation in the specific area of a single administration, the Autonomous Government of Catalonia.

This fact obviously conditions the impact of our conclusions and our analysis. A single case study cannot be used, legitimately, to make generalisations about the enormous number of e-government projects that have been, or still are being developed around the world. Nor can generalisations be made with respect to the great variety of administrative structures regarding their space of conception and application. In a strict sense, some of the conclusions will provide examples, however, of the inadequacy of certain common statements or assumptions in the area of e-government and, equally, will serve to illustrate and partially contrast our analytical model.

In spite of the above, some specific elements of our object of study allow us to be a little more generous with respect to the relevance of the results obtained. On one side, the analysis of a large part of the literature allows us to consider AOC as a project that is quite representative of what are normally considered the basic traits of e-government.

Secondly, from many perspectives AOC is a very ambitious e-government project and without doubt, of great impact. For example, we reiterate that it is a project with an inter-administrative goal that involves a great number of administrations of different levels⁵¹. Additionally we reiterate that the Catalan autonomous administration, the administration that is most involved to date, is a public organisation of considerable size and complexity⁵². Lastly, we indicate that the objective of the project is related to the essential function of any administration, the provision of public services, which also represents at least a potential change for all those administrative units directly or indirectly involved in public services.

We believe, in the first place, that the analysis of the evidence that we have been able to gather allows us to confirm, as we put forward in our first main hypothesis, that the AOC project is representing a transformation in the internal structure of the administration towards a *network form*⁵³, in spite of its priority focus on the provision of online public

51 See section 2.

52 Comparable, for example, with that of some European states.

53 On this concept, see the seminal work of Castells (1997-2001).

services. This trend is basically manifested through the increase in the level of horizontal integration (intra-administrative) and vertical integration (inter-administrative).

This implies that the change that occurs in the provision of online services, with e-government, not only affects the relationship between the administration and the users of the services (citizens, companies and other social agents), but also indirectly affects the processes that take place within the same administration. The connection between these phenomena is given by a collection of factors.

On one side we find the growing trend to configure the provision of services in function of demand, rather than supply. In the area of the administration, this implies a reconsideration of services according to the user's needs and perspective and not based on the pre-existing structure of the units or administrative procedures. From this premise other more specific directives are also derived: the trend to reconfigure the supply of services according to these needs and not on the basis of the units or departments responsible or "owners" of the services; the trend to improve access to the services and make it more flexible, increasing the number of channels (telephone, Internet, in-person, etc.) and the hours of service (24x7); the propensity to simplify the transactions involved in the services (reducing the number of transactions necessary or the documentation required); and finally, the inclination to offer more information of better quality on the transactions and services.

All these directives have a basic technological component in the e-government case that we have researched. In other words, their realisation is possible and often influenced by ICTs. Throughout the study we have seen, precisely, the diversity of forms in which this association occurs. In particular, we have observed how the reconfiguration of the supply of services in terms of their content and the attempts towards simplification end up affecting the structure of the databases and the connection between the information systems of the different units, from one or various administrations. Finally, there is an increase in the level of integration of the administrative activities, both vertically and horizontally.

To what extent is this trend towards a network organisational form imposing itself on the bureaucratic administrative structure? Our impression is that this trend is having, at least to date, a limited impact. Various factors are weighing against it. The most important are the high degree of compartmentalisation of the public administration, the fragmentation of the structure in a large number of increasingly specialised units and entities, together with their high level of autonomy, and the prevalence of hierarchical relationships in the

information flows. Without doubt, these are two of the main obstacles for e-government, something that confirms our second main hypothesis.

With respect to our third hypothesis, the provision of online services does not necessarily lead to a scenario of greater efficiency in the administrative mechanisms involved. We have seen how, in various situations, the obvious gain in the service's effectiveness (which covers improvements in access and its distribution) does not automatically generate savings in the resources used. We can speak, therefore, of a general increase in external effectiveness, but not of a similar improvement in internal efficiency.

This situation arises, basically, due to a low level of integration between the procedures linked to the new distribution channel (Internet) and the old processes of service provision. Given that this situation provokes increasing complexity in the tasks undertaken by civil servants, who in many cases have to duplicate certain tasks or have to supervise different parallel information channels, they often display a low level of commitment to the project. It is an attitude that is described, in a much too simplistic manner, by the well-known expression of resistance to change, a concept that we have already discussed.

We have established that in this area there is a certain *overlap* between the new procedures related to the virtualisation of the services and the rest of the procedures found in an administrative unit. This co-existence of procedures in parallel (which has an organisational and a technological angle) causes what we consider to be a certain *organisational chaos* in the units affected by the project. A situation that in fact generates a large part of the problems of resistance to change that we have mentioned and affects the everyday course of the rollout of the project.

Extrapolating to the entire organisation, we could declare the existence of three distinct layers. For one part there is the area covering the new procedures and the equipment required for the provision of online services; structurally this includes the new entities created *ad hoc* with responsibility to manage the portal and coordinate the project, as well as those parts of the bureaucratic structure that have been transformed with a high degree of integration. On the other side are the rest of the administrative and services structure that use the normal production procedures and distribution channels. In fact, here we currently find the major part of the structure of the autonomous administration. In the middle, however, a hybrid space has appeared, a "nobody's land" where both types of organisation and procedures cohabit in an unstable and problematic manner.

From a negative perspective, it is possible that e-government will end up as a residual function to become a *virtual appendix* of the administration. This is something that has in fact already occurred with previous projects of Internet presence in the area of the administration⁵⁴. From an optimistic perspective, however, it could be expected that pressure from the upper layer (thanks to the weight exercised by other agents from outside of the administration) and the unsustainable chaotic situation in the middle layer, will lead to the traditional structure of the bureaucracy also being transformed. In fact, from what we have been able to see, the project's management group believes that the second option is more probable: the hypothesis of change *by induction* points in this direction⁵⁵.

In any case, in response to our initial questions, the relationship between organisational change and technological innovation in the context of the e-government project that we have considered can be described as *precarious*. The link between technological innovation, represented by the establishment of a new interactive channel for users of the services, and the organisational changes that point towards a new network organisational model⁵⁶, does not happen in a causative or mechanist manner. The different aspects of the bureaucratic organisational structure that we have been highlighting intervene to make it more difficult.

However, the main conflicts that occur are not explained well by establishing a simple confrontation between technology, on one side, and bureaucratic organisation, on the other. We have seen how a more adequate and fruitful manner to conceptualise this situation is through the identification of what we have called two different *technological frameworks*. Instead of characterising the situation using the common framework of social impacts (organisational, in this case) of technology (the ICTs), the analysis of the phenomena of *interpretative flexibility*, in which different actors bring different visions of the objectives into play, the problems to resolve, and finally, the specific designs of a technology, has allowed us to characterise two different arrangements in which technology and organisational structure are articulated distinctly.

It is this confrontation between a bureaucratic technological framework and what we have considered as e-government itself that explains a large part of the phenomena that we have analysed, in particular those that appear in the intermediate zone. We insist that the element by which they are differentiated is not the inclination towards using one particular type of technology, but rather the way in which the technology overlaps, both in function and structure of the organisations.

⁵⁴ To a certain extent, this metaphor can be used to describe the evolution of the SAC information system, for example, or the www.gencat.net portal itself.

⁵⁵ It is believed, in part, that the crisis generated in the intermediate space will be the main factor stimulating change.

⁵⁶ On the links between this social form, Internet and different social environments, see Castells (2002).

In the bureaucratic framework, there is subordination of technology and, in particular, of the electronic information systems to the structure. Priority use of these is the automation of certain procedures and the strengthening of the vertical information channels. In the other framework, in contrast, technology is fundamentally engaged with the function and the information systems are used as open tools to exchange information externally and with other units of the structure, partly undermining the hierarchical chain of command.

It is quite evident that the technological framework of e-government, as we have been able to observe in our case study, is much closer to a business environment than that of the public administration. This should not surprise us given that the agents through which they are most clearly linked are the private consultants involved in AOC. Remember that the consultants have an important role in the project, not only in its rollout, but also in the definition of some of its basic characteristics. This fact, very common in the majority of e-government projects around the world, strongly conditions the leadership of the project and leads to a virtual bridge being used to transfer principles of e-business and e-commerce to the area of public administration, often in a very mechanical and unproblematic way.

A direct consequence of the transfer is the re-conceptualisation of the citizen that occurs in e-government. All technological design, from a car to a web page, includes, in an explicit⁵⁷ or implicit manner, whether deliberately or not, a certain script – a sequence of actions – which the end user must follow. This script also incorporates a particular interpretation, as schematic and naïve as it may be, of the interests, objectives and values assumed of the user⁵⁸.

In the case of e-government, the priority focus of the projects in the provision of online services clearly tends towards a reconstruction of the citizen as *client* or consumer of public services. Consequently, this interpretation results in a considerable simplification of the relationship between the administration and citizens; specifically, the most political dimension of this relationship is left aside. On the side of the citizen, this is his characteristic as a political subject – with specific rights and obligations. On the side of the administration, it is the characteristic of being a specific body in the framework of the political system where there are mechanisms for representation, as well as the subordination of its functions to the general interest.

⁵⁷ Through an instructions manual or tutorials, for example.

⁵⁸ This phenomenon of *inscription* that we have already commented on in other sections of the study obviously does not imply that the users end up necessarily following the script incorporated in the artefact. Continuing with the semiotic metaphor, the inscriptions present in the artefacts can be interpreted or read in various ways, sometimes unexpected by their designers.

The reconstruction of the citizen as a client of the administration has been one of the most recurring themes in the literature. In this nebulous area of exploration a clear trend can be detected to associate the rollout of e-government with a potential increase in the levels of transparency and, in general, accountability in the activities of government and their administrations. In the field of political science, in contrast, this optimistic vision is sometimes countered with the affirmation that the most common models of e-government, due to their fundamental dependency on the private sector, both with respect to the agents responsible for the design, as well as the underlying principles, tend to relegate the initiatives for improvement in this area to a second level.

Our position, in contrast, opts for a different path of analysis, more centred on specific practices. We have clearly observed in the project studied, a certain secondary concern for matters related to the accountability processes. In particular, the rollout of the project has not involved, until now, the creation of new interactive virtual spaces⁵⁹. In fact, this was never even one of the main objectives of the project at the outset. Nor does the coordination group display any great concern for this situation, and the political authorities do not appear to have great expectations or desires in this respect.

With respect to transparency and rendering accounts, two important aspects of the concept of accountability, our study indicates a process of indirect transformation, related to the provision of online services. On one side, the consideration of the citizen, above all else, as user and consumer of public services has the patent effect of increasing the information supplied on a specific service. This information, does not refer only to the procedural aspects of the processes involved, but also to the corresponding regulations and laws, and in particular the commitments that the administration assumes with the user of the service⁶⁰ or applicant.

The action by the administration of making these commitments and obligations explicit can be considered as a clear indicator of accountability. In a different sense, the provision of aggregated information or general details on a service is also an indicator: the number of requests handled, number of positive or negative outcomes, evolution of services over time, geographical distribution of users, resources used, etc. It is in this process, in which the administration's information systems are opened, at least partially, to public scrutiny, where interests or practices not very visible to date may occur, conditioning the social distribution of a public service in a surreptitious manner.

⁵⁹ Or, at least very different spaces, both qualitatively and in quantity, from the current space in the corporate portal of the Autonomous Government of Catalonia.
⁶⁰ In the case analysed this is reflected in the so called "service declarations".

In our analysis we have verified this fact in the process of digitalisation of a specific service. Specifically, we have observed how the process of enriching and making information about a service more accessible can have the unexpected consequence of revealing forces or making the influence of social actors explicit, which up to that point had acted on the administration in a concealed manner. The provision of online services can have, in this sense, an indirect effect on the transparency of governmental actions, revealing tacit relationships with external actors.

Finally, there is another important effect of e-government on the processes of accountability. The comparison between the performance of the administrations and the different bureaucratic bodies has been, to date, a difficult task, both for analysts as well as for politicians or public sector directors, partly due to the difficulty of finding indicators that were reliable and sufficiently significant and general; normally it has been much easier to measure the performance of an administration looking at some specific services (health, education, etc.). E-government is becoming, in this sense, a valuable source of information that is easily accessible, to establish generic or transversal indicators that can be used to compare different administrations. Even though the current trend is to use indicators that are certainly rudimentary, such as the number of online services, and prepare rankings that are not very informative, it is clear that the administrations (and their social environment) are entering into a dynamic of comparisons and mutual scrutiny that produces a certain level of competition in the public sector⁶¹.

These elements of accountability that we have associated to the provision of online services in e-Government can be linked to a specific characteristic of the phenomenon of virtualisation related to ICTs. Contrary to what is often said, the virtualisation of a space of social interaction or an activity cannot be understood as a process of “dematerialising” its elements and relationships⁶². On the contrary, the phenomenon of virtualisation generally implies greater materialisation, both of the agents and of their interactions. An electronic process carried out with an administration, for example, leaves many more material “records”, in the form of digital documents, different types of data, log files, etc., than procedures in-person⁶³. These records are stable and can be analysed, condensed and handled with greater ease. The actions in the virtual spaces are, consequently, more *traceable* and more susceptible to be submitted to public scrutiny⁶⁴.

Another general conclusion of our study is related to the role of technology in e-government. The first thing that should be noted is that the role of technology is much

61 As we have verified, this competition is seen both horizontally, between administrations of the same level, and vertically, between administrations of different levels.

62 This point of view is common, especially in some superficial analysis of digital art or virtual communities.

63 The same occurs, for example, in the area of virtual education, where all the interactions between students and teachers leave a material trail.

64 The “trails” that citizens leave in electronic processes can be analysed to personalise the services and reconfigure what is offered based on demand.

more complex than many analysts suggest. Specifically, ICTs cannot be conceived as mere *tools* for the transformation of the administration, or as a simple *neutral* instrument to drive pre-determined objectives of a political, organisational or economic nature. It is in fact a vision that, curiously, many of the participants that we have interviewed appear to share when they state that “technology is not a problem” or that “it is not the most important factor”⁶⁵.

Our study shows, however, that when we examine the processes of the digitalisation of services in depth there are many problems related to technology and they tend to be persistent. Clearly, the vision of the participants does not aim to conceal these situations that are quite evident, but tries to put emphasis on the willingness, in the interest and in the objectives of the actors that are behind an artefact, a factor that is also very important, as we have seen. The analysis of this trend leads many authors to consider ICTs as sufficiently flexible to be able to adapt to quite divergent interests and strategies.

On this point we want to make two main commentaries. Firstly, the flexibility of technology and specifically of ICTs is not infinite. It is not always possible to incorporate a particular policy objective into a specific design, for example. Otherwise it would not be necessary to have so many resources or take so much effort to design administrative portals or information systems. Secondly, ICTs are not “immaculate” and “pure” of political issues in the administration on their arrival. They are accompanied by determined actors (software companies, consultant firms, etc.), as part of wider designs or plans and they have already undergone, therefore, a certain process of adaptation to interests and objectives outside the public sector. Returning to a concept that we have previously introduced, it can be said that technology always arrives from the hand of a particular technological brand.

Precisely because of this, outsourcing the design of e-government has been a motive of primary concern in the literature. The outsourcing of technology can be considered, largely, as a form of outsourcing policy itself⁶⁶ or, at very least, leaving decisions in the hands of private companies that incorporate, implicitly and in a way that is not very visible, very important evaluations of a political and organisational character.

In this respect it must be noted that in the area of the project that we have analysed, the outsourcing of the design is conditioned by the earlier privatisation of the Autonomous Government of Catalonia’s computer centre. In fact, many of the problems that we have

⁶⁵ Other very common statements have been “technology is not the most complicated” or “technology is the least problem”.

⁶⁶ “Outsourcing [technology] architecture is effectively the outsourcing of policymaking” Fountain (2001a, 2003).

observed in the day-to-day implementation of the AOC project are partly explained by the considerable distance (cultural) between the design context of the services and the real context for implementation. In addition, the relative technological heterogeneity in the autonomous administration, which can undoubtedly be linked to this privatisation, has strengthened the disintegrating effects of the structural fragmentation and the resulting organisational heterogeneity.

Another common perception in the literature is exactly the opposite to that detailed above. Namely *technological determinism* which, in the area of e-government is displayed in the belief that technological innovation represented by the ICTs will be, by itself, the detonator of organisational and political changes of great impact inside the administrations⁶⁷. Against this vision we have already indicated several times that the expected *impacts* of ICT in the administration are measured, in reality, by a certain number of factors (organisational, structural, cultural, etc.) that condition the final designs.

A normal form of conceptualising this situation, common to any process of technological development, is to speak of *shaping* or *social construction*⁶⁸ of technology. Through the course of our study we have detected various cases that can be described in these terms, in particular, the phenomenon of interpretative flexibility that we have analysed is a paradigmatic example. However, it should be noted that this form of understanding the interaction between technological innovation and social or organisational change does not lead to a simplistic form of *social determinism*, as non-technological petitions (actors, interests, etc.) mark the destiny of the technology.

In reality it is a two-way process. Technology does not only receive the influence of the actors during the development process of the project, but the same actors undergo important transformations. As we have seen when analysing the actor network, the problems and objectives that some actors associate with the project, such as the relationships that they have with other actors, change over time, partly due to the evolution of AOC itself.

Another important result of our analysis is verification that the relative instability in the global network of actors has negative effects on the rollout of the project. Even though the AOC Consortium was established as an association between institutions, the political powers that control the different institutions are sometimes a source of obstacles for the project, a situation that partly explains the patent asymmetry in the services offered in the

⁶⁷ The vision of technology as an *inductor* of change, which we have detected amongst some of the interviewees, can also be associated with a determinist position.
⁶⁸ A classic work on the analysis of the *social shaping* processes is Bijker, Hughes and Pinch (1989).

CAT365 portal. In other words, to date the Consortium has not been able to become a true patron or executor of the initiative, nor has it been able to isolate itself from external forces, at least not completely.

A permanent source of conflicts has been, for example, the level of visibility of the various administrations in the portal. We have already seen how this was also reflected in the generic conception of the project. In the same way that horizontal integration faces the phenomenon of compartmentalisation and an identification exacerbated between structure and function, on the institutional level there are questions about maintaining identity in the network – conserving their visibility and preserving their authority above all else – displayed in a cutting manner, converting cyberspace in a new agnostic space for political actors.

Nevertheless, these political actors display a complex or ambivalent attitude with respect to e-government. Through our study we have detected a clear vocation to encourage and finance e-government initiatives with considerable resources. At the same time, however, there is limited understanding of the consequences and impact of the organisational changes that these projects require. There is much greater awareness of the changes in the relationship between administrations and administrators (even though it is only limited to certain aspects) than the changes that affect the administration itself. A fact that may be due to the primary conception of the Internet as an innovative communications channel and not as the embryo of a new form of organisation.

We also observe amongst the political actors, and particularly amongst the senior staff involved in the project, certain disorientation with respect to the recent political objectives that are associated with the project. They display a degree of uncertainty about the motivations and final expectations of a political nature surrounding the e-government projects. Often their public statements are based mainly on the ideological argument of modernity: the change is justified in a general manner by the need to modernise the administration, putting it at the level of the private company in the provision of services and identifying this modernisation with the introduction and use of ICTs in public institutions, in a manner that lacks reflection.

A consequence of this absence of clear political objectives is a clear tendency to mimic strategies and instructions of other e-government projects, developed by other administrations. This leads to an overall phenomenon of *mimetic isomorphism* fed by the emphasis on so-called *best practices*, that don't favour critical reflection or strategic thinking in accordance with the local circumstances for implementation of e-government.

A clear example of this phenomenon of isomorphism is the sequential structure for developing projects. As we have seen, the adoption of these linear models, omnipresent in commercial presentations and, to a lesser extent, in academic literature, is predominant and clearly conditions the characteristics of the projects. The trend to leave aside processes of accountability for later phases of development, which is standard practice in these sequential models, has a political cost that often passes unnoticed. In short, institutional mimicry has converted these models into self-fulfilling prophecies.

The development of an e-government project like AOC is, therefore, strongly conditioned by three main factors. Firstly, due to the character trapped in the organisational structure of the autonomous administration and due to the conflict between two divergent technological or cultural frameworks, that till now cohabit in a tense and unstable manner. Secondly, due to the fundamental lack of definition that affects its basic political objectives, which in the end are based on a conservative understanding of the network as a new communications channel for providing services. Finally, the patent asymmetries and dysfunctions in the network of institutional and political actors mean that the project is not meeting its initial expectations in the inter-administrative arena.

In spite of all of this, the project is alive. Both the incremental nature of the project, as well as the flexibility in management for the core management team, has allowed a sustained rhythm of development to be maintained to date. Whether or not this is possible in the future will depend largely on the resolving, one way or the other, the conflicts that we have identified.



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