

***EG4M (EGOVERNMENT FOR MEDITERRANEAN COUNTRIES) PROJECT:
THE eGovQUAL METHODOLOGY AND THE SOCIAL AND ECONOMIC CONTEXT
INDICATORS TOOL.***

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Summary: In the eGovQual methodology, the backbone of the EG4M (eGovernment for Mediterranean Countries) project, which aims at providing the PAs of the targeted countries with efficient, quality driven frameworks for both sides of the administrations (civil servants and users), the concept of *homology of the systems* or *structures* contributes to explain the level and degree of diffusion of a certain technology within a social context (or between different contexts), assuring the coherence between technologies and social systems. For example, homology allows to ascertain the correspondence between the behaviour of a population towards a new technological application (adoption, rejection) and its cultural capital. Indeed, in eGovQual, homology is relevant for the scenery reconstruction at a macro level.

The second relevant concept is *Appropriateness*, which is the capability of detecting and enhancing the potential of the context. In eGovQual, appropriateness concerns the adaptation of eGovernment services to the context, both at the macro (scenery) and micro (user's context) level. Appropriateness contributes to the eGovQual approach to eReadiness, the degree of predisposition to technological innovations within a given context, together with theoretical perspectives that evaluate the *capability* of a system to achieve valuable goods or beings, namely, *functionings*, and to convert them into *utilities*. In eGovQual, eReadiness assessment supports the planning of eGovernment projects, by fixing the socio/political environment constraints, and identifying the appropriate eGovernment solutions.

These two key concepts constitute the theoretical background from which the Social and Economic Context Indicators (SECI) tool was created in order to understand the contexts targeted for eGovernment interventions.

Key words: eGovernment, ICT, methodology, homology, context, appropriateness, eReadiness, trust, capability, PA, user, macro, micro, organization, social, economic.

EG4M (eGovernment for Mediterranean Countries) project: the SECI (Social and Economic Context Indicators) tool, a key part of the eGovQual (eGovernment Quality) methodology.

1 – THE METHODOLOGY AND ITS KEY CONCEPTS

1.1 – The eGovQual methodology

The eGovQual (eGovernment Quality) methodology for the planning of eGovernment projects, developed within the eG4M Project (eGovernment For Mediterranean Countries – www.eg4m.net), exploits a multidisciplinary approach, extending the focus to social issues (De Michelis et al. 2007; Viscusi et al. 2008; Viscusi et al. 2007). The methodology is not tied to specific IT solutions, and is composed by four main phases:

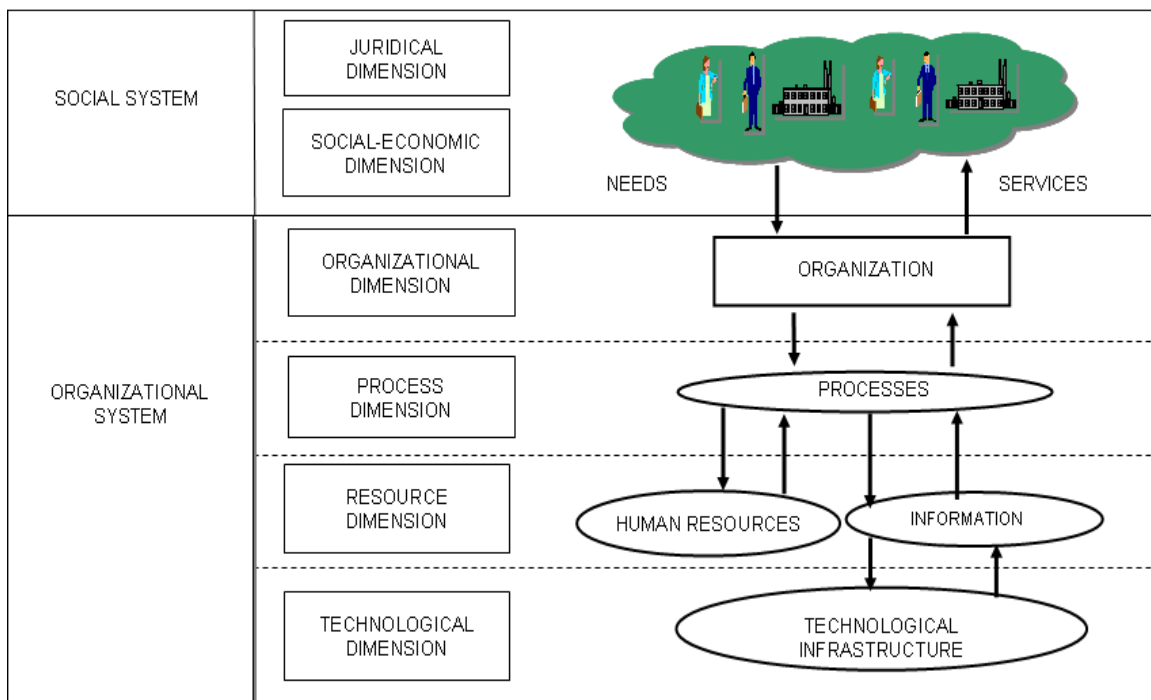
- i) state reconstruction,
- ii) assessment,
- iii) new quality targets definition,
- iv) preliminary design and choice of projects.

In these paper we present the eGovQual methodology by focusing first on the concept of homology of the systems and then on that of the appropriateness of the

principle from sociological analysis, establishing a structural correspondence between two phenomena or between two coherent systems of meaning and action¹

The theoretical framework within which eGovQual operates considers social and cultural factors as standpoints to start from in order to understand the reality targeted for a potential intervention.

The EG4M Reference Context



services for the users.

1.2 – Homology: social and cultural factors

Boudon introduces the concept of *homology of the systems* or *structures* to describe a methodological

¹see Boudon, R. *La logique du social*: Pluriel, 2001.

This means that every organizational and technological intervention, and every juridical and economical recognition will be thought and practiced with a context-sensitive approach. Such a method fulfils the goals of efficiency and flexibility for two different actors, the institution and the users. In this vision, there is not a separated, self-sufficient section of the methodology dealing with “social” and “cultural” aspects *per se*, but these elements are taken into account whenever a new technological or organizational plan of action is considered. These aspects are a constant presence in the architectural background of the planning of projects and in the evaluation of their effectiveness.

2 – THE SECI TOOL AND ITS CONSTITUENCIES

2.1 – Seci – Social and Economic Context Indicators

The tool we developed in order to keep together the informative richness of the social world we are going to act in and the need for this information to be useful in a pragmatic, intervention-oriented sense is called *SECI*, Social and Economic Context Indicators.

Born as *SCI*, Scenery and Context Indicators, (Viscusi and Cherubini 2007) the *SECI* tool has undergone an evolution in 2008, when the eG4M experimentations started among tunisian PAs. The experimentations and the subsequent requests to members of the PAs and to samples of the population to fulfil our questionnaires gave us a picture both of the PA targeted for the intervention (The Questionnaire for Organizational Units) and of the socio-economic context (The Socio-Demographic Questionnaire) it operates in. Furthermore, these activities contributed to change the *SECI* in a *transdisciplinary* fashion (Galliers 2004).

Since some of the indicators, the knowledge of which we identified as significant for the development of future actions, have an hybrid, social and economic status, i.e.: the activity rate among age classes, the poverty rate into urban and rural contexts and among genders, and the unemployment rate (Batini et al. 2008), a decision was made to insert specific economic sections in the questionnaire derived from the *SCI* guidelines (in the perspective of a more agile and less dispersive, but nevertheless dense relevance activity). Thus, the tool changed its name dropping the generic refer to a “Scenery” and gaining the more precise

indications of what we are interested in the “Context” we analyse, that is to say social and economic (and socio-economic) factors.

2.2 - Characteristics of the SECI tool

The *SECI* tool is an heuristic device thought and built to be as much as flexible as possible, that is to say to preserve the capacity to read a context making the connections and the contradictions among its various constituencies (social/occupational structure, system/s of values, general and professional cultures, organizational routines, potential and real access to services) visible and intelligible, under any given targeted context.

It is composed by a set of indicators grouped into categories intended to be possibly used in a modular way, with no necessity of a chronological order for the relevations, that is to say that the methodological coherence and the effectiveness of the results are not to be affected from the order of submission of the single-part related questionnaires.

SECI is divided into two levels of analysis:

-Macro (scenery recognition)

-Micro (field analysis)

and five areas of investigation:

-Organizational Units

-Socio-economic context

-ICT access and diffusion

-Analysis of the users

-Analysis of the services.

The first area, and the connected Questionnaire for Organizational Units, is split into four sub-areas:

-Informational Level

-Internal Knowledge

-Organizational Structure and Culture

-E-Participation

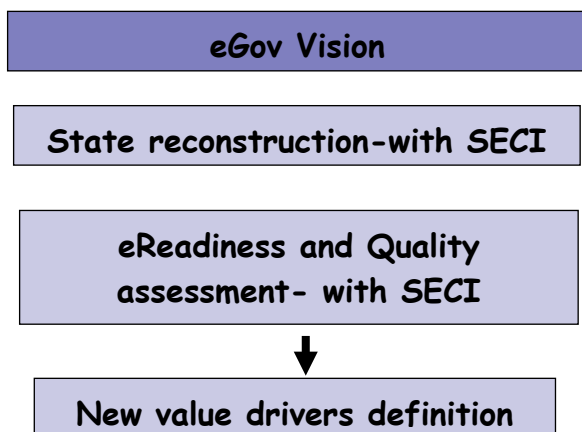
and is aimed at the PAs staff (executives, civil servants) chosen for the eGovernance intervention.

The second, third, fourth and fifth areas are grouped into the Socio-Demographic Questionnaire, aimed at samples of the population of the area selected for the intervention.

2.3 – The analytical phases

Within the context of eGovQual, the SECI tool with its potential of evaluation of context resources and capabilities has been conceived to be used in two different phases:

- the *State Reconstruction*
- the *eReadiness and Quality Assessment*.



“Strategic planning” for the eGovQual meth.

During the State reconstruction phase (a general overlook on the situation we are going to change/improve with our eGovernment intervention driven by the Vision we have been developing together with the local authorities about political priorities and strategic objectives), the subministration of the Socio-Demographic Questionnaire (together with a secondary analysis of existing data) accomplishes the following tasks::

- picturing the Socio-Demographic context (i.e.: the ICT literacy rate on total population and among the youth);
- relieving the Infrastructural Access (i.e.: the percentage of population covered by mobile cellular telephony/with Internet at home or the percentage of schools equipped with PCs);
- detecting the Real Access (i.e.: the cost of Internet access/mobile phone services, the percentage of people who can have access to the Internet at school, work or other access points).

During the Assessment phase (which concerns the evaluation of the eReadiness of the users potentially involved in the eGov plan², which is to say the degree of their knowledge about

the use of ICT devices, and eventually assesses the Quality of the possible interventions in a realistic, pragmatic oriented way based on the emerged socio-political constraints), primary data collection through surveys is used, together with secondary data from administrative sources.

2.4 – The subjects involved

The surveys to be given to significant samples of real/potential users (stratified by class, culture, gender, residency, age) are about the following typologies of issues:

- Household/private access to ICT (% of users with mobile phone, % of users with Internet connection at home);
- Public/working access to ICT (% of users who have access to the Internet outside home, namely at school, work, or in public access points);
- ICT knowledge (% of users with a basic ICT literacy level);
- ICT use (% of users who can send an email with an attachment, who can send an SMS);
- Attitude towards ICTs (trust and disposition measurement such as making fill a Likert scale [five items, from the lowest value to the top one] that requests to declare one’s disposition toward technology like the mobile, the Internet, the Interactive television, and counting the percentage of those who are highly well disposed; or detecting the percentage of those who declare to be high-sensitive toward ICT related issues such as security and privacy).

On the basis of the above investigations, it is possible to think of a structure for the future interventions which is sensitive to the strengths and weaknesses of the contexts, and spreads itself on the most appropriate time horizons according to the gained knowledge (i.e.: pushing with articulated interventions, providing high interaction level services, on a well-established and well-known technology, while keeping it soft, step by step, on a less spread and accepted technology, so that users are not frightened but in the meantime they start to realize the potential of the mean they’re offered).

3 – OBJECTIVES AND KEY CONCEPTS

3.1 - Objectives

The objectives of the SECI tool can be synthesised as follows:

²see WEF and INSEAD: *The Global Information Technology Report 2006-2007. Connecting to the networked economy*, World Economic Forum and INSEAD (2007).

-in the *Analysis of the scenery* we want to collect and organize the information that allows to construct a knowledge of the macro context in which the eGovernment interventions are going to take place, and to define medium or long-term goals fitting to the context's characters and conditions;

-in the *Field analysis* section we want to evaluate eReadiness in the specific social and organizational context formed by the PA involved in the eGovernment project, by the services it supplies and by the users of these services.

There are a few key concepts we took from literature and developed ourselves with the intention to keep them as guides for action and evaluation parameters of results.

3.2 – Appropriateness

It is possible to evaluate the ability of a context to positively interact with the innovation triggered by the adoption and the development of ICT, identifying the level of QUALITY and RESOURCES. Then it is possible to coherently adjust the ICT-mediated innovation intervention and to effectively give substance to the concept of APPROPRIATENESS, that is a key factor in the eGovernment studies.

APPROPRIATENESS is an essential requirement of any transformation intervention with specific goals, and it involves the correspondence between the innovations introduced and the features, potentials and needs expressed by the context.

In order to attend this requirement it is necessary to develop applications, services and contents meaningful for the users, using available resources. Thus applications and services introduced would be easily integrated in the day life of users helping them in performing their usual tasks.

3.3 - Capability

The planning and realization of adequate intervention consists in the capability to identify and develop the context's potential. In this direction it is particularly significant the concept of CAPABILITY, as argued by Sen (1992, 1999)³, intended as the ability of a system to reach or develop positive goods or functionings really usable and enjoyable.

Thus, the concept of CAPABILITY does not only refer to the existence of certain resources,

but also to their DYNAMIC ASPECTS which imply their possible activation and their use for the achievement of goals and the satisfaction of needs. A CAPABILITY based approach involves the concept of INDIVIDUAL CHOICE: making potentially feasible different kinds of functionings means to give individuals the possibility to reach certain "state of being" (moving freely, being educated...).

3.4 – Trust

A critical dimension in the evaluation of users' readiness is their TRUST in the actors and the tools of eGovernment. The sociological literature underline the importance of trust in any situation in which COOPERATION is fragile and essential at the same time.

The establishment of G2C (Government to Citizens) relations mediated by ICT involves three different kinds of trust:

1) trust in TECHNOLOGY: users have to trust in its RELIABILITY and in the APPROPRIATENESS of the tools provided; the DISPOSITION toward certain channel for the information transmission has to be detected (for instance telephone rather than pc);

2) trust in INFORMATION as a resource. Users should have an open attitude towards information exchange, personal data communication, virtual economic transactions. This means to assess the level of trust in that which Giddens names ABSTRACT SYSTEMS⁴ and the willingness to rely on so called EXPERT KNOWLEDGE that are the affordable interface of abstract systems;

3) trust in the PA and the INFORMATION it provides. (statistics, accounts, information on service delivery): a positive evaluation of PA's action is a basic requirement for the introduction of relations mediated by ICT.

Following the theoretical framework given by these solid concepts, it is easy to identify goals and constitutive dimensions for the Analysis of the Users and the recognition of Service Quality.

4- USERS' ANALYSIS

4.1 - Goals

To find out barriers and resources which make easier the introduction of innovation in service delivery and in G2C relations.

³see Sen, A. *Inequality Reexamined*, Alianza Editorial, 1992

⁴see Giddens, A. *The Constitution of Society*, University of California Press, 1991.

4.2 - Dimensions

Users' eReadiness assessment collects the main characteristics which describe the *social and economical composition of users* and consists in these dimensions:

-*access resources*

, *knowledge resources*

, *change oriented resources*.

[These three dimensions directly contribute to the define levels of users' readiness for change, while the indicators connected to the description of the users' social and economical composition keep an indirect relation with eReadiness dimension. Nevertheless they allow to consider services demand expressed by different types of users, both with reference to contents (ex., innovative services demand) and with reference to the delivery forms (ex., needs or preferences regarding delivery channels).

When needed, "questions" concerning the motivation of the choice of the indicators are explicited, just as the hypothesis which should guide data interpretation.]

5 - SERVICE QUALITY

5.1 - Goals

Evaluation of users' satisfaction level with existing service quality and rise of problems and needs in order to fix quality goals orienting transformation.

5.2 - Dimensions

The following dimensions involve basic information necessary to the evaluation and monitoring of service quality.

Efficiency: the amount of resources necessary to benefit the service;

Efficacy: service capability to respond to users' needs and expectations;

Accessibility: easy service's demand and benefit by users;

Accountability: PA's capability of being responsible of actions, products, services and decisions.

[Sources for this section are specific surveys to a meaningful sample of the PA's users, plus administrative data.]

6 - THE INTERACTION OF LEVELS: A PATH TO A "GLOCAL" VISION

The variety of methods used among the different parts of the SECI tool (statistics, ethnographies, Likert scales) and the different

levels of analysis it covers (micro – PA organizational units; macro – urban and rural contexts in the selected area) are a guarantee of its effectiveness.

The complexity of the real world is preserved, but through clusterizations driven by the key concepts exposed above synthesis is also provided.

We think that this multidisciplinary and pragmatic oriented approach can ensure a picture of the local issues ready to be put in the context of a global scenery, from which flexible solutions can be taken and modeled for the targeted areas.

By testing users' and civil servants' attitude towards technological innovation and the very concept of an "e" world (made up by many different worlds: eGovernment, eDemocracy, eParticipation, eLearning) we avoid the risk of wasting time and resources building sophisticated but unrealistic architectures. For example, in contexts where illiteracy is still high and people are driven to services like the anagraph thorough symbols rather than words (see the case of the municipality of Tangiers), our first task is to put our visions into the "real world" and model them so that they can be really effective.

In other words, we have to implement the "step by step" theory by having clear what the starting point is: only in that way we can design a realistic goal.

On the other side, the learning aspect is a crucial one: only after we find out what kind of organizational culture and system(s) of motivations are working in the context we targeted we can think about having an effect on it by teaching our theoretical and practical know how to the people who will be the beneficiaries of our interventions.

In developing the SECI tool we tried to keep in mind all these aspects, with the aim of giving something which could really be *appropriated* by the PAs and their users and inscribed into their everyday interactions.

Finally, the dynamic and modular nature of the SECI tool will preserve it from the risks of age and rigidity, as it allows the researcher to learn from the context instead of trying to force it into abstract, useless schemes: an everlasting process of gaining, selection and use of datas from the context, in order to really (positively) change the context itself by giving the people what they need and pushing them to actively engage in the processes of innovations rather than being mere unaffected spectators.

BIBLIOGRAPHY

- Batini, C., Cabitza, F., Cammarota, G., Ciriaci, D., Corsi, M., Maurino, A., Russo, R., Scipioni, S., and Telaro, M. 2008. "Multidisciplinary Models and Guidelines for Eprocurement Projects: The Ereadiness Phase," in: Project E-Society: Building Bricks.
- Boudon, R. La logique du social: Pluriel, 2001.
- De Michelis, G., Casaglia, A., and Cherubini, D. 2007. "Eprocurement as a Learning Process: What Social and Organizational Concerns Tell to System Development," Sixth International EGOV Conference 2007, Regensburg (Germany).
- EG4M staff, The eGovernment for Mediterranean Countries Project, www.eg4m.net .
- Galliers, R.D. 2004. "Trans-Disciplinary Research in Information Systems," International Journal of Information Management (24:1), February.
- Giddens, A. The Constitution of Society, University of California Press, 1991.
- Sen, A. Inequality Reexamined, Alianza Editorial, 1992.
- Viscusi, G., Batini, C., and Cherubini, D. 2008. "Eg4m: The Planning Methodology," Quadernidisco2008-02R, , Department of Informatics, Systems and Communications, University of Milano Bicocca, Milan.
- Viscusi, G., Batini, C., Cherubini, D., and Maurino, A. 2007. "A Quality Driven Methodology for E-Government Project Planning," RCIS), pp 97-106.
- Viscusi, G., and Cherubini, D. 2007. " A Methodology for the Design of Appropriate Egovernment Services, ," Interdisciplinary Aspects of Information Systems Studies: Itais 2007 Conference, Springer.
- World Economic Forum and INSEAD, WEF and INSEAD: The Global Information Technology Report 2006-2007. Connecting to the networked economy, 2007.