The GovQual Methodology: the Case of the eGovernment for Mediterranean Countries

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GovQual application

- Extensively applied in the eG4M (eGovernment for Mediterranean Countries) project:
  - **Morocco** – from November 2008 to April 2009
    - eReadiness of Municipality of Tangier (focus on Governance)
  - **Tunisia** - from January 2008 to April 2009
    - Information systems integration initiatives of the Tunisian Ministry of agriculture and hydraulic resources.
The methodology in Tunisia

Legal framework and policies, services, estimated budget

1. **eGovernment vision elicitation**
   - Structured definition of the strategies, intentions and objectives of the eGovernment vision

2. **State Reconstruction**
   - Systemic representation of the context of intervention and of the information system of the involved public administrations

3. **eReadiness and quality assessment**
   - Evaluation of the information system of the involved public administrations

4. **Definition of priority services and value targets**

5. **Operational Planning**
   - Choice of new projects and processes
   - New projects and processes enacted by the ICT technologies

6. **Deployment and monitoring**

**Political vision and priorities**

**Strategic objectives (macro/micro)**

**Socio-economic/technological indicators**

**Available enabling technologies**
The tunisian experimentation

- The main challenge for the Ministry is the integration at horizontal level of the data bases of the central administrative departments.

- A second related goal is to
  - provide a unified view of the interactions between each department and other public administration,
  - to evaluate the actual level of efficiency and effectiveness of current information systems for eGovernment services provision.
Different networks, different levels of integration...

1. Vertical network between central and peripheral offices

2. Horizontal network between the central departments

3. Network between Ministère de l'agriculture and other public administrations

Horizontal internal integration

Vertical internal integration

Front-Office Dept1
Back-Office DG1

Front-Office Dept2
Back-Office 2

Front-Office Dept3
Back-Office n
The participants

Four major administrative departments have priority in the e-Government initiatives, namely:

- the department of animal production;
- the department of the restructuring of agricultural state-owned domains;
- the department of veterinary services;
- the department of water resources management.
GovQual state reconstruction step have been focused on the following issues:

- the conceptual schemas re-engineering of the current data bases, in order to identify the master data of the MAHR, suitable to be used for the design of the conceptual schema of the integrated information system;
- the data quality evaluation of the available data, in terms of their currency and completeness, in order to verify the correspondence with the current procedures and services provided by the public administration;
- the representation of the interactions between public administrations in terms of services and related processes, together with involved type of information and ownership of the involved data bases; the goals is to define the priority intervention areas in the integration initiative.

After a set of courses introducing the methodology and related topics, the above described three issues have been developed through participatory design workshops involving four teams composed by three civil servants (one senior manager and two middle level manager) each from the four departments
Les matrices (DG Services vétérinaires) – Organisation/Processus

Ministère

Direction Générale

Admin. regional

DG PECHE

DGPA

DG NOMV

DGPA

GIPP

GIPAC

M/ INTERIEUR

M/ SANTE PUBLIQUE

M/ FINANCE DOUANES

OEP

CNV ZOO

GIVR LAIT

APA/ CRDA

M/ COMMERCE

M/ INDUSTRIE

Organisation/Processus

Santé Animale

Contrôle des produits animaux et de la qualité

Contrôle sanitaire aux frontières et normalisation
Les matrices (DG Services vétérinaires) – Organisation/Flux

Ministère
Direction Générale
Admin. régional

Organisation/Flux
Santé Animale
Contrôle des produits animaux et de la qualité
Contrôle sanitaire aux frontières et normalisation
Les matrices (DG Services vétérinaires) – Organisation/Base de données

Ministère

Direction Générale

Admin. régional

Organisation/Base de données

Santé Animale

Contrôle des produits animaux et de la qualité

Contrôle sanitaire aux frontières et normalisation

DG Services vétérinaires

DGPECHE

DGPA

GIPAC

DG Services vétérinaires

M/INTERIEUR

M/SANTE PUBLIQUE

GIPP

M/DOUANES

CNOMV

OEP

APA/CRDA

M/COMMERCE

M/INDUSTRIE

CNV

GIVR LAIT
Les matrices (DIRECTION DES RESSOURCES EN EAU)

- Ministère
- Direction Générale
- Admin. régional

CRDA

Légenda
- Organisation/Processus
- Organisation/Flux
- Organisation/Bases de données

DG/GENIE
DG/ETUDE et dev. Agr.
DG/BARRAGES
DGPA
CABINET
INM
BIRH
DG/ACTA
DGRE
Les matrices

(PRODUCTION AGRICOLE)

Légenda

Organisation/Processus
Organisation/Flux
Organisation/Bases de données

Ministère
Direction Générale
Admin. régional
Prêté
Les matrices

(DIRECTION GENERALE DE LA PECHE ET DE L’ACQUACULTURE)
Les matrices

(BUREAU DE RESTRUCTURATION DES TERRES DOMANIALES)
The abstraction integration tree of the four schemas

Agricultural state property schema

Veterinary services schema

Water resources schema

Agricultural production schema

Available documentation
Water resources schema

- Intervention
- Observer
- Equipment
  - Pluviograph
  - Pluviometric station
- Station
- Watercourse
- Geographic localization
- Toponym
- Delegation
- Governorship
- Région
- Day
- Month
- Year
- Basin
Abstract Agricultural state property schema

Abstract veterinary services schema
Abstract water and production schemas

- Administrative process
- Geographic localization
- Territorial area
- Time
- Administrative structure

Abstract water resources schema

- Administrative process
- Territorial area
- Administrative structure

Abstract production schema
Abstract Integrated schema

<table>
<thead>
<tr>
<th>User</th>
<th>Agricultural state property schema</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Veterinary services schema</td>
</tr>
<tr>
<td></td>
<td>Water resources schema</td>
</tr>
<tr>
<td></td>
<td>Agricultural production schema</td>
</tr>
</tbody>
</table>

User

- Internal user
- External user

Time

Administrative process

Production process

Administrative structure

Agricultural Production resource

Real estate property

Geographic element

Territorial area

Geographic location
# Decision table

<table>
<thead>
<tr>
<th>Decision criteria</th>
<th>Suggested solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autonomy</td>
<td>Relevance of historical data</td>
</tr>
<tr>
<td>-</td>
<td>High</td>
</tr>
<tr>
<td>High</td>
<td>-</td>
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<td>Low</td>
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<td>High</td>
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<tr>
<td>High</td>
<td>-</td>
</tr>
</tbody>
</table>
## Decision table for the participatory choice of suitable technologies

<table>
<thead>
<tr>
<th>Condition of use (advantage)</th>
<th>Condition of use (inconvenience)</th>
<th>Department</th>
<th>Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Autonomy of Management</td>
<td>Low Overlapping of the data between the different databases</td>
<td>1) The department of animal production; 2) The department of the restructuring of agricultural state-owned domains; 3) The department of veterinary services; 4) The department of water resources management</td>
<td>Enterprise Application Integration/Publish &amp; Subscribe</td>
</tr>
<tr>
<td>Low Autonomy of Management</td>
<td>High Autonomy of Management</td>
<td>-</td>
<td>Central Database</td>
</tr>
<tr>
<td>Low Autonomy of Management</td>
<td>High Number of local queries</td>
<td>-</td>
<td>Distributed Database</td>
</tr>
<tr>
<td>High Autonomy of Management</td>
<td>Low Relative Importance of the querying with respect to the update</td>
<td>1) The department of animal production; 2) The department of the restructuring of agricultural state-owned domains; 3) The department of veterinary services</td>
<td>Datawarehouse</td>
</tr>
<tr>
<td>High Autonomy of Management</td>
<td>Low Volatility of Sources</td>
<td>-</td>
<td>Enterprise Information Integration</td>
</tr>
</tbody>
</table>
A model of governance

Ministry

Planning

Definition of the quality of the system

Feasibility study

Analysis

Deployment

Testing

Exploitation

Maintenance

Monitoring

eGov Unit

Market
Hypothesis of development
The methodology in Tangier

- Legal framework and policies, services, estimated budget

- eGovernment vision elicitation
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- State Reconstruction
  - Systemic representation of the context of intervention and of the information system of the involved public administrations

- eReadiness and quality assessment
  - Evaluation of the information system of the involved public administrations

- Definition of priority services and value targets

- Operational Planning
  - Priority services and value targets
    - Choice of new projects and processes
      - New projects and processes enacted by the ICT technologies
  - eGovernment plan of interventions with projects specifications and priorities

- Deployment and monitoring
The GovQual application at municipality of Tangier

- Goals and domain of the evaluation:
  - Test the readiness of public managers to use e-Governance systems.
  - Complete system diagnosis of internal and external communication
  - Provide useful and practical development strategic directions an action plan for the implementation of specific ICT applications, for internal communication (intranet, collaborative platform, email, etc..) and citizen participation (targeted information, e-democracy, etc..) .
eReadiness vs IS Service orientation

- interaction
- transaction

- Enterprise Application Integration (EAI)
- Enterprise Information Integration (EII)

- Information
- Data Warehouse
- Stovepipe

Service orientation of the Information systems

- Now
- In three years
The approach

- **Research Intervention**
  - Interaction among the research team and players from the context of intervention.

- **Helping to choose and implement a system**
  - Support the definition of possible trajectories of evolution, impact assessment.
The methods

- Document analysis of the eG4M knowledge base
- Qualitative analysis of interviews gathered October 2008 in Tangier with the « chefs divisions ».
  - Division travaux communaux
  - Division technique Responsable de l’informatique GIS
  - Division administrative
  - Division hygiène et contrôle sanitaire
  - Division éclairage publique et circulation
  - Division régie et affaires économiques
  - Division comptabilité et liquidations
  - Division budgets et marchés
  - Service budget 2ièm partie
  - Division urbanisme et patrimoine
  - Division juridique et contentieux
The questionnaire

The questions concerned:

- Infrastructural and technological resources
- Knowledge resources and capabilities of employees
- Organizational Resources
- Accessibility to digital resources by citizens
Infrastructural and technological resources

- Need for investments in order to reach the diffusion levels necessary and sufficient to support effective eGovernment services.

**Goal: Back office integration (80-90%)**
Knowledge resources and capabilities of employees

- Percentage of employees with initial training
- Percentage of employees with a high school diploma
- Percentage of employees with higher education (third cycle or Doctorate)
- Percentage of employees with professional training in the field of TICs
- Percentage of managers with professional training in the field of TICs
- Percentage of executives with professional training in the field of TICs
- Percentage of individual email accounts made available by the UO

Ressources de connaissance et capacités des employés
<table>
<thead>
<tr>
<th>Question</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pourcentage de budget de l'UO consacré à des investissements dans le domaine des TICs et pour la gestion des TICs</td>
<td>2</td>
</tr>
<tr>
<td>Critères d'avancement de carrière (Seulement par ancienneté)</td>
<td>70</td>
</tr>
<tr>
<td>Critères d'avancement de carrière (Un mélange des deux, c'est-à-dire par ancienneté et performance)</td>
<td>30</td>
</tr>
<tr>
<td>Est-ce que l'administration publique dans son ensemble a déclaré des objectifs clairs à remplir pendant l'année? (Vision confuse et non-réaliste)</td>
<td>20</td>
</tr>
<tr>
<td>Est-ce que l'administration publique dans son ensemble a déclaré des objectifs clairs à remplir pendant l'année? (Le niveau de spécification et articulation de la vision est moyen)</td>
<td>80</td>
</tr>
<tr>
<td>Votre UO a-t-elle déclaré des objectifs clairs à remplir pendant l'année? (Le niveau de spécification et articulation de la vision est moyen)</td>
<td>80</td>
</tr>
<tr>
<td>Votre UO a-t-elle déclaré des objectifs clairs à remplir pendant l'année? (La plupart des tâches et des buts sont bien définis et expliqués, une minorité est moins claire)</td>
<td>20</td>
</tr>
<tr>
<td>Niveaux hiérarchiques dans la structure organisationnelle (3 ou moins)</td>
<td>100</td>
</tr>
<tr>
<td>Dans les 5 dernières années, l'Administration Publique dans son ensemble ou votre UO ont-elles mis en place des projets de réingénierie des processus et/ou d'informatisation ?(Oui)</td>
<td>80</td>
</tr>
<tr>
<td>Dans les 5 dernières années, l'Administration Publique dans son ensemble ou votre UO ont-elles mis en place des projets de réingénierie des processus et/ou d'informatisation ?(Non)</td>
<td>20</td>
</tr>
<tr>
<td>Si oui, ces projets se focalisent sur: L’arrière-guichet (sans contact avec les citoyens)</td>
<td>65</td>
</tr>
<tr>
<td>Si oui, ces projets se focalisent sur: Les tâches de guichet et d'arrière-guichet de manière égale</td>
<td>35</td>
</tr>
<tr>
<td>Quel genre de services ces projets ont-ils mis en œuvre/mis à jour? (Accès à l'information en-ligne)</td>
<td>65</td>
</tr>
<tr>
<td>Quel genre de services ces projets ont-ils mis en œuvre/mis à jour? (Téléchargement de formulaires - 1ère étape de transaction)</td>
<td>35</td>
</tr>
<tr>
<td>Dans les 5 dernières années, y-a-t-il eu des réformes de lois et des règlements modifiant le statut et les procédures de l'administration publique dans laquelle vous travaillez? (Non)</td>
<td>80</td>
</tr>
<tr>
<td>Dans les 5 dernières années, y-a-t-il eu des réformes de lois et des règlements modifiant le statut et les procédures de l'administration publique dans laquelle vous travaillez? (Oui)</td>
<td>20</td>
</tr>
<tr>
<td>Si oui, combien? (3-5)</td>
<td>100</td>
</tr>
<tr>
<td>Quels aspects sont-ils impliqués? (Organisationnels)</td>
<td>80</td>
</tr>
<tr>
<td>Quels aspects sont-ils impliqués? (Humains)</td>
<td>20</td>
</tr>
</tbody>
</table>
The positioning

Service orientation of the Information systems

eReadiness

interaction

transaction

information

integration

Municipality of Tangier

Low

High

Low

High
Conclusions

- The municipality of Tangier has joined a level of eReadiness and adoption of ICTs which allows to provide eGovernment services at the level of information.
- Organizational structure is still in prevalence and strictly functional silos.
- There is a first possible change in the direction of integration at technological level of the back-office of the different divisions.
- The technological developments have to be integrated with organizational eReadiness to reach a high level of interaction advanced transactions.
Recommendations: Organisational resources

- **Support the development of projects**
  - Methodologies referred to reduce the distance between strategy and resources at the operational level (strategic alignment).

- **Support the project governance and administrative activity**
  - Procedures for control of acts and processes that are both continuous and flexible.

- **Increase interaction**
  - with private local and international
  - with (foreign) institutions
Recomendations: Accessibility to digital resources by citizens

- Enhancing the activity of mediators
  - the digital divide is still influenced by the educational level of the lower strates of population, where (digital) illiteracy is yet released (40% youth, 75% of elderly).

- Develop multi-channel initiatives.
  - Diffusion and ability in the use of mobile technologies
Thank for the attention... questions?