



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

Gianluigi Viscusi(Ph.D.)

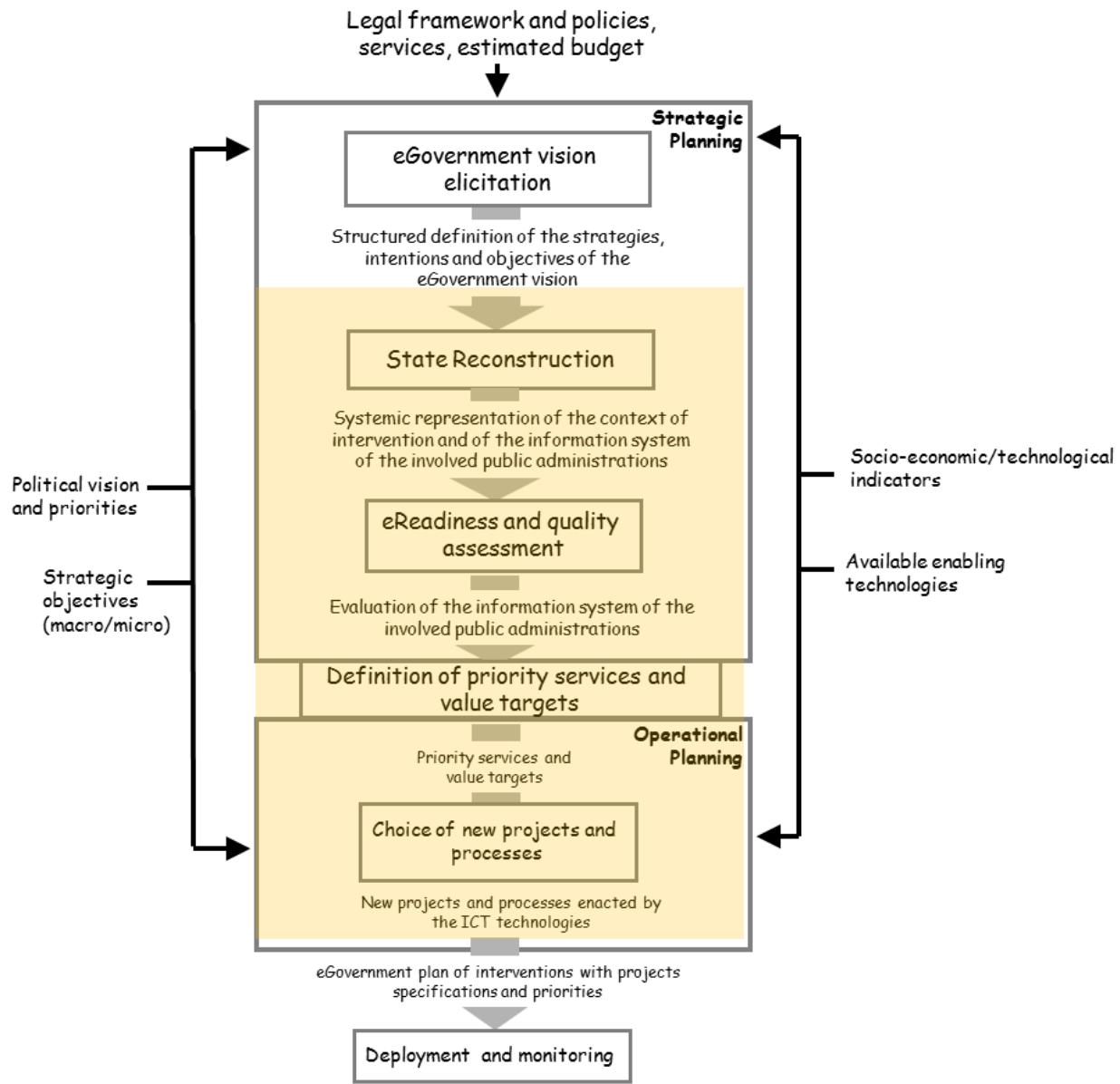
DISCo – University of Milano-Bicocca

viscusi@disco.unimib.it

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.

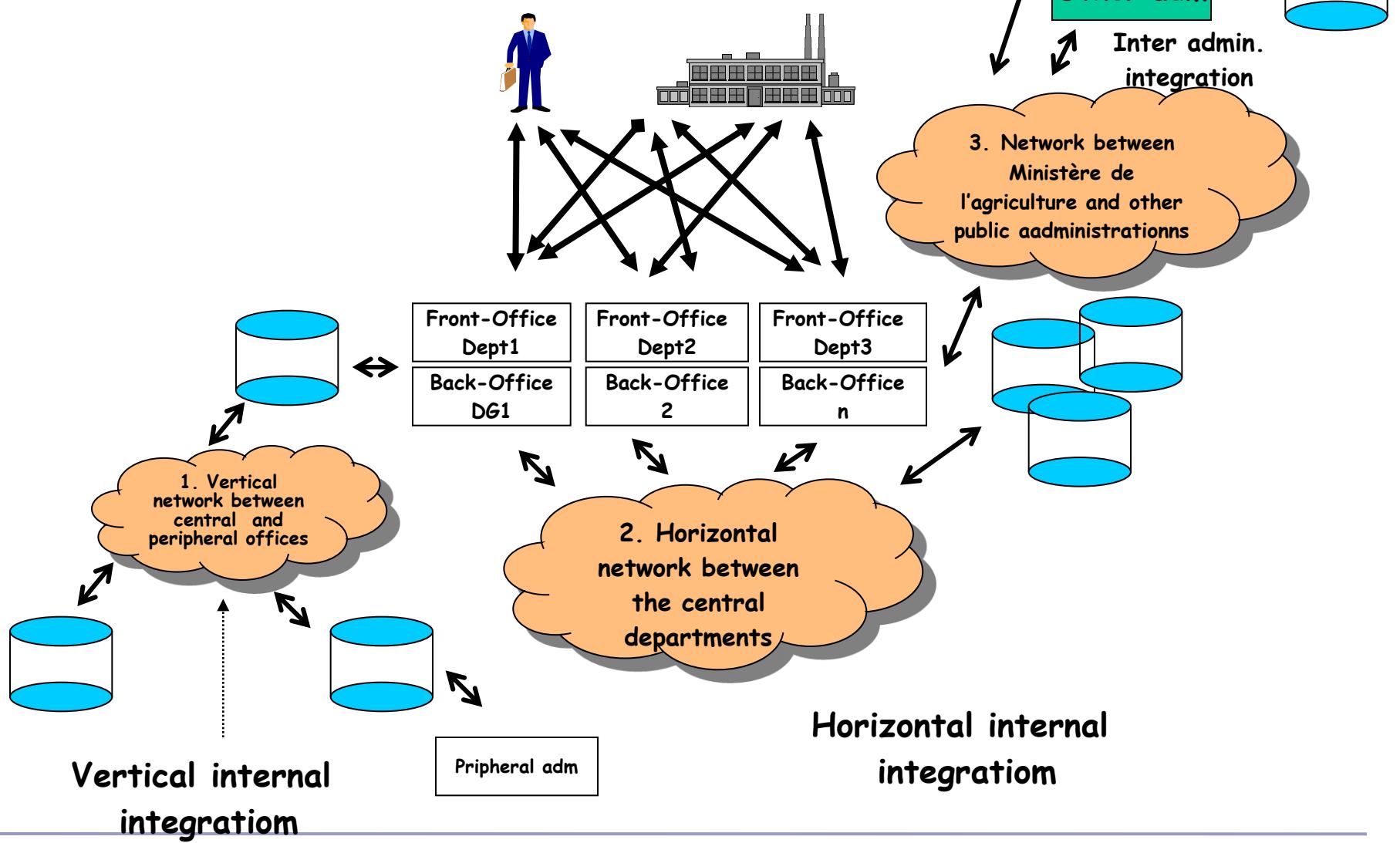
The methodology in Tunisia



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...



The participants

eG4M - <http://www.eg4m.net>

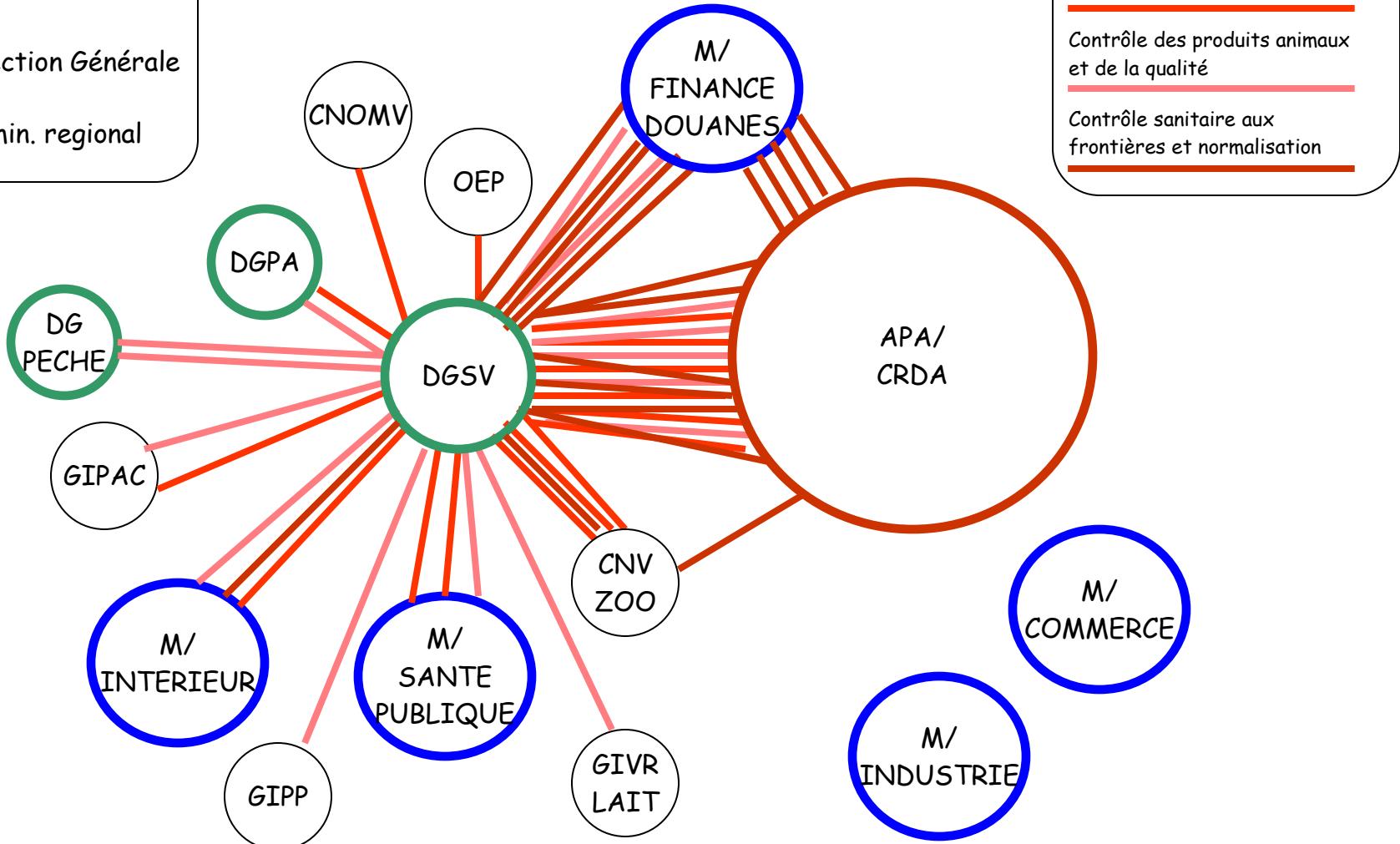
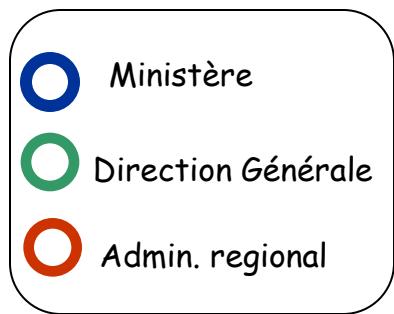
- Four major administrative departments have priority in the e-Government initiatives, namely:
 - the department of animal production;
 - the department of the restructuring of agricultural state-owned domains;
 - the department of veterinary services;
 - the department of water resources management

The action...

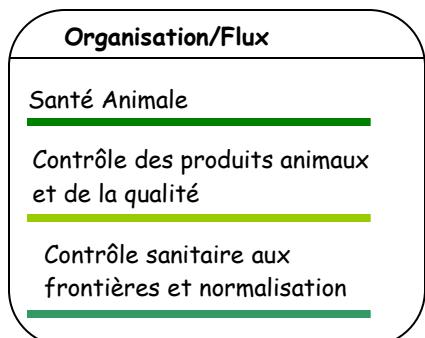
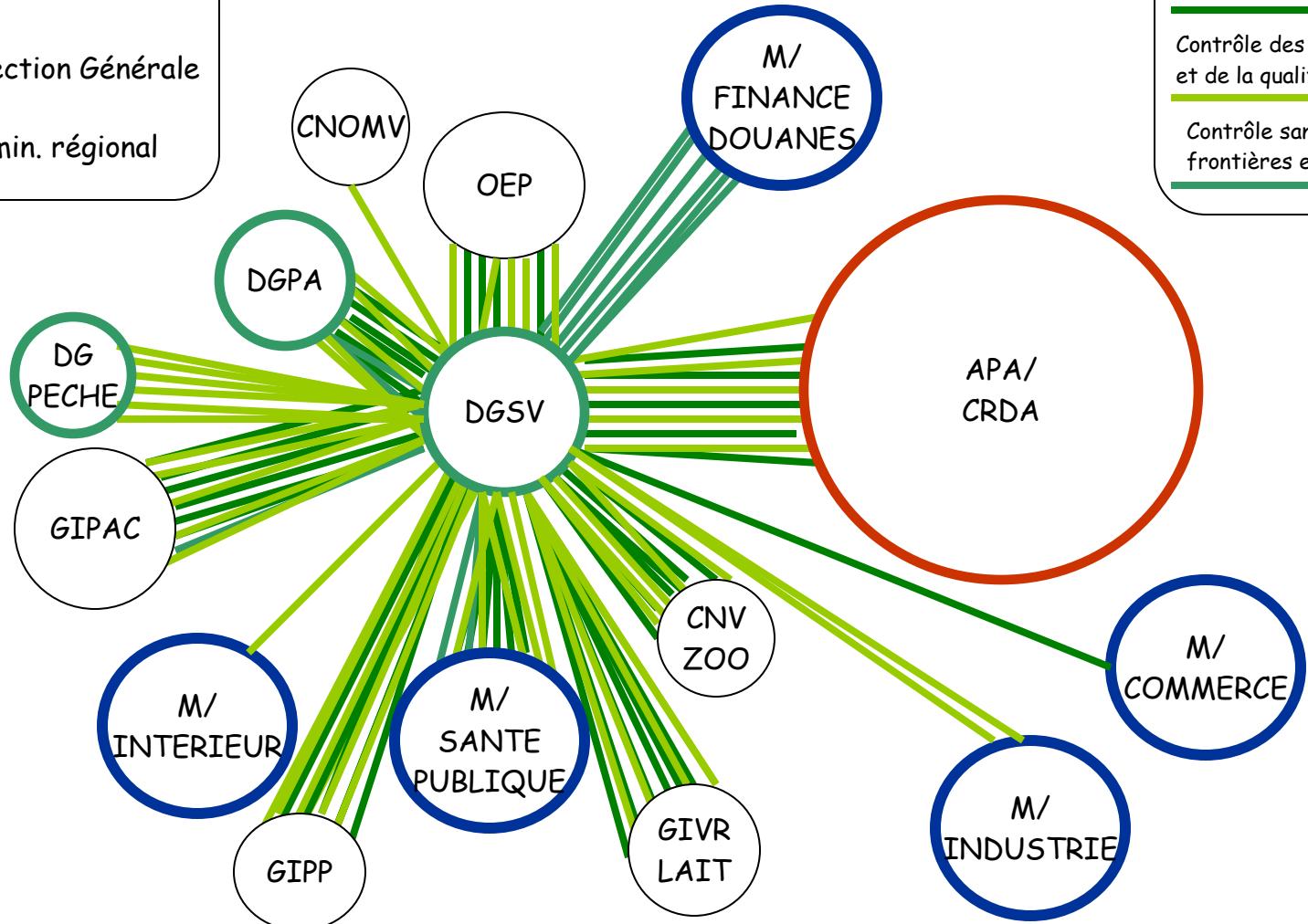
- GovQual **state reconstruction** step have been focused on the following issues:
 - the ***conceptual schemas re-engineering*** of the current data bases, in order to identify the master data of the MAHR, suitable to be used for the design of the conceptual schema of the integrated information system;
 - 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

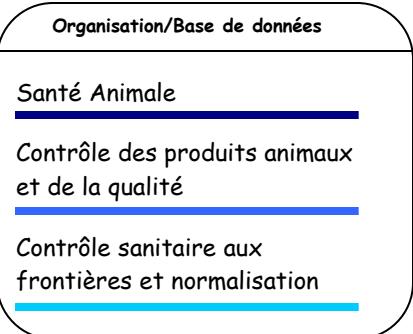
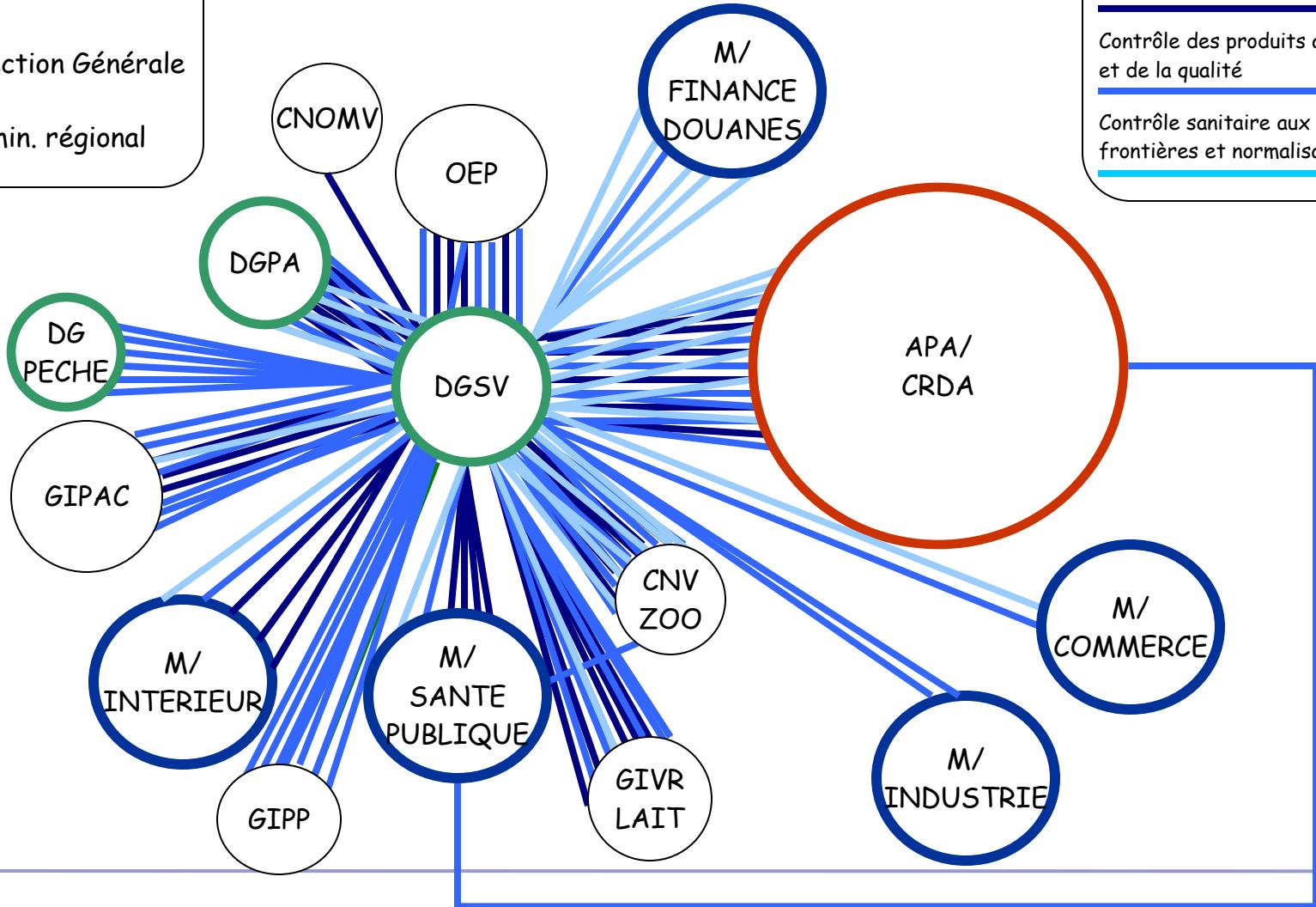
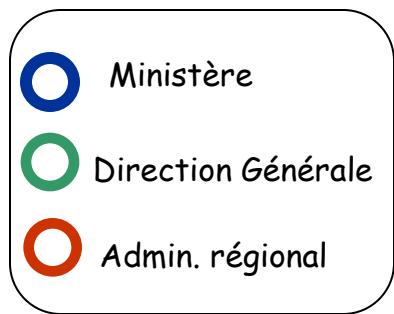


Les matrices (DG Services vétérinaires) – Organisation/Flux

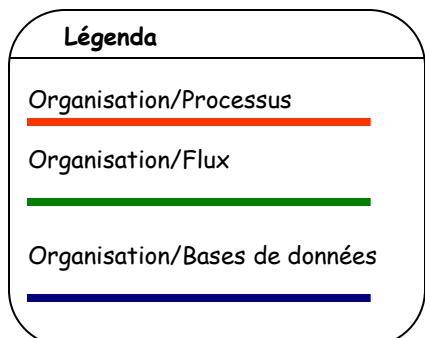
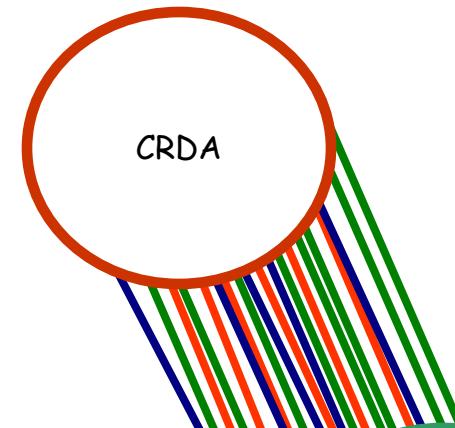
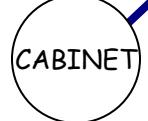


Les matrices (DG Services vétérinaires) –

Organisation/Base de données

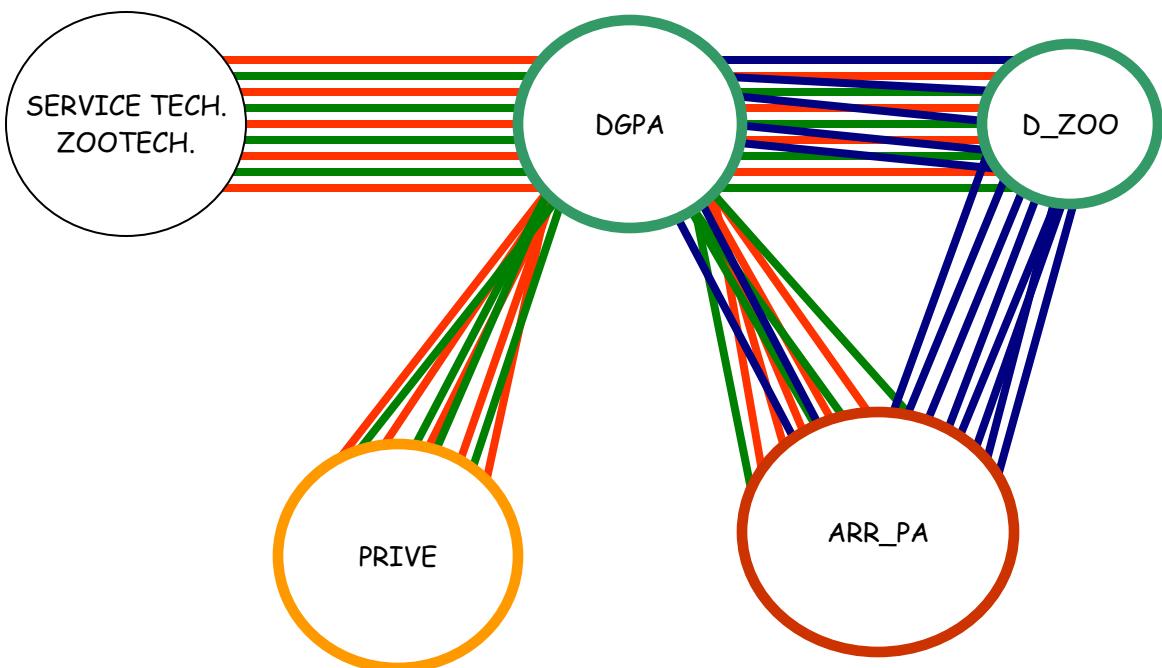
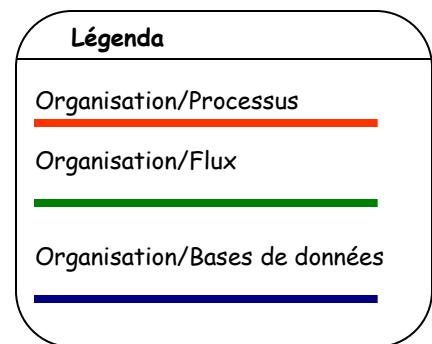


Les matrices (DIRECTION DES RESSOURCES EN EAU)



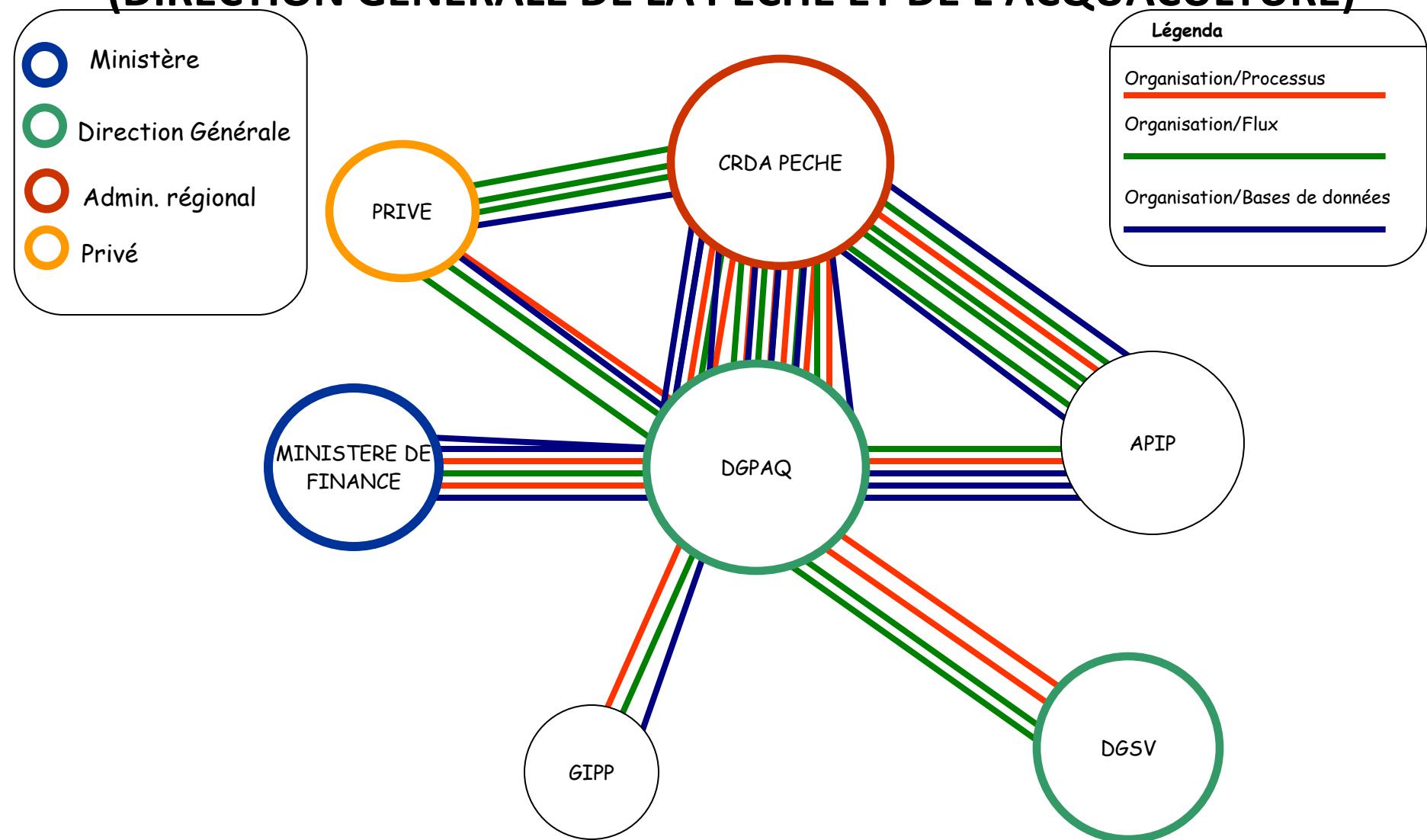
Les matrices

(PRODUCTION AGRICOLE)



Les matrices

(DIRECTION GENERALE DE LA PECHE ET DE L'ACQUACULTURE)

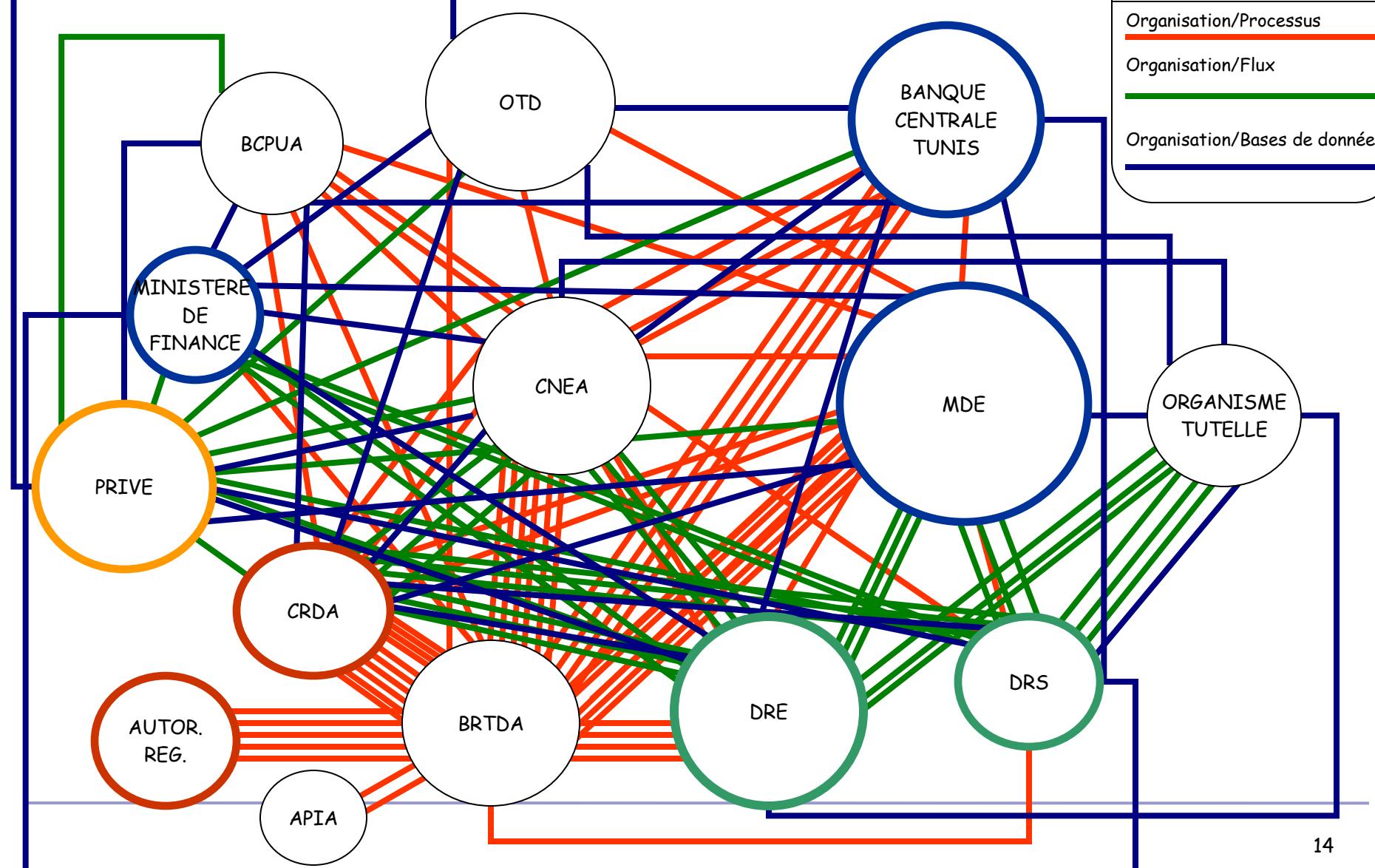


Les matrices

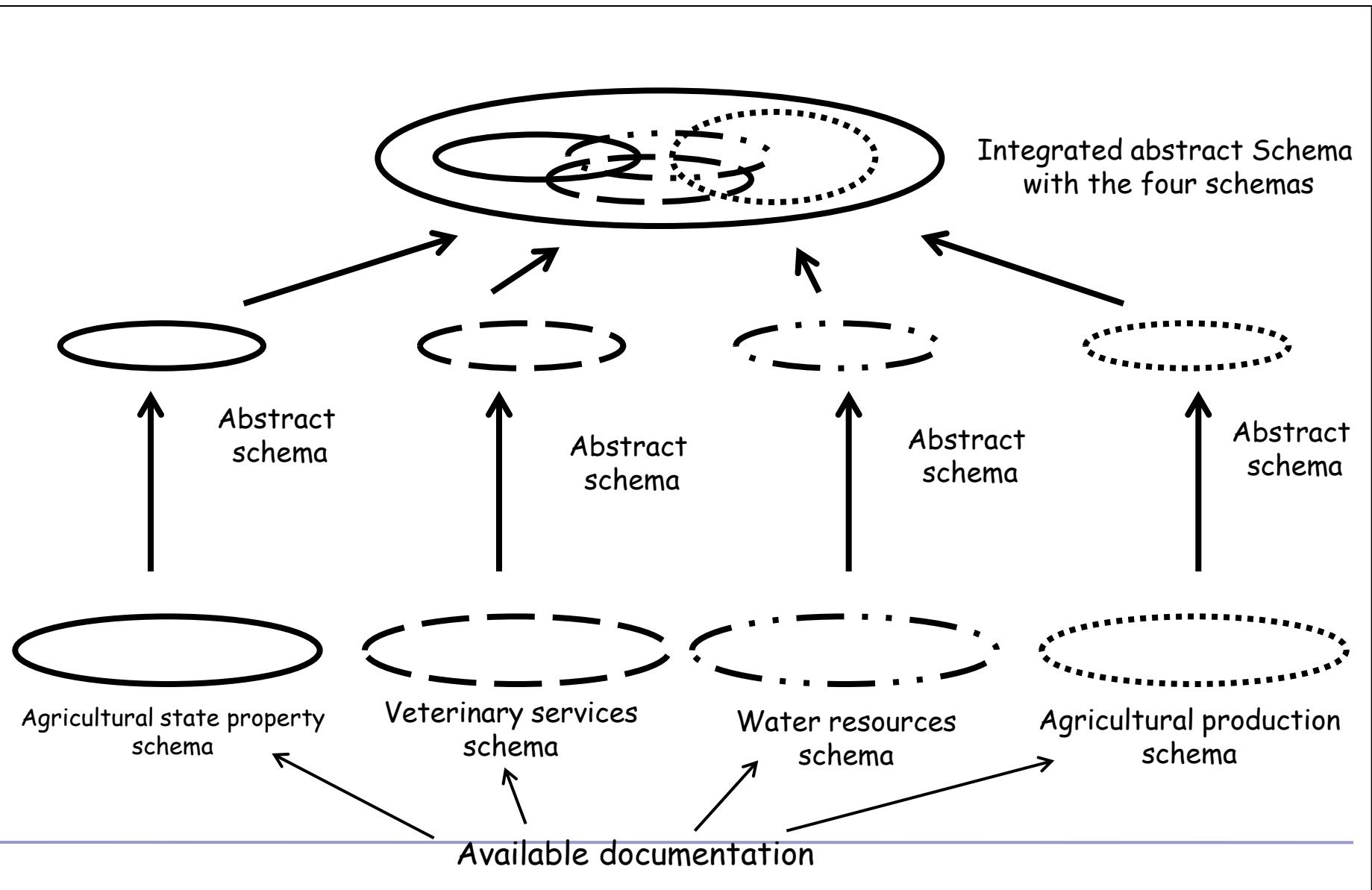
(BUREAU DE RESTRUCTURATION DES TERRES DOMANIALES)

Legenda

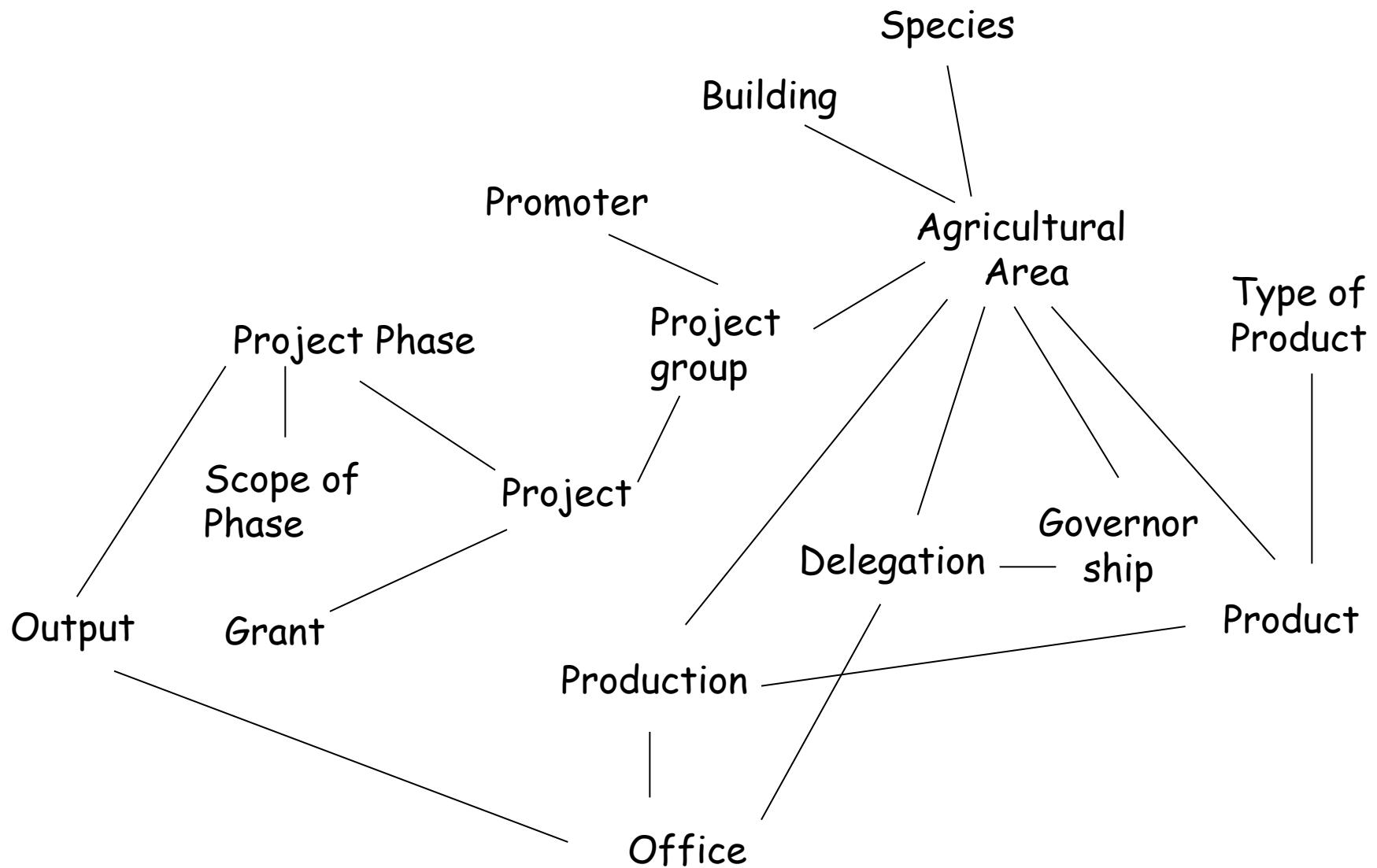
- Organisation/Processus
- Organisation/Flux
- Organisation/Bases de données



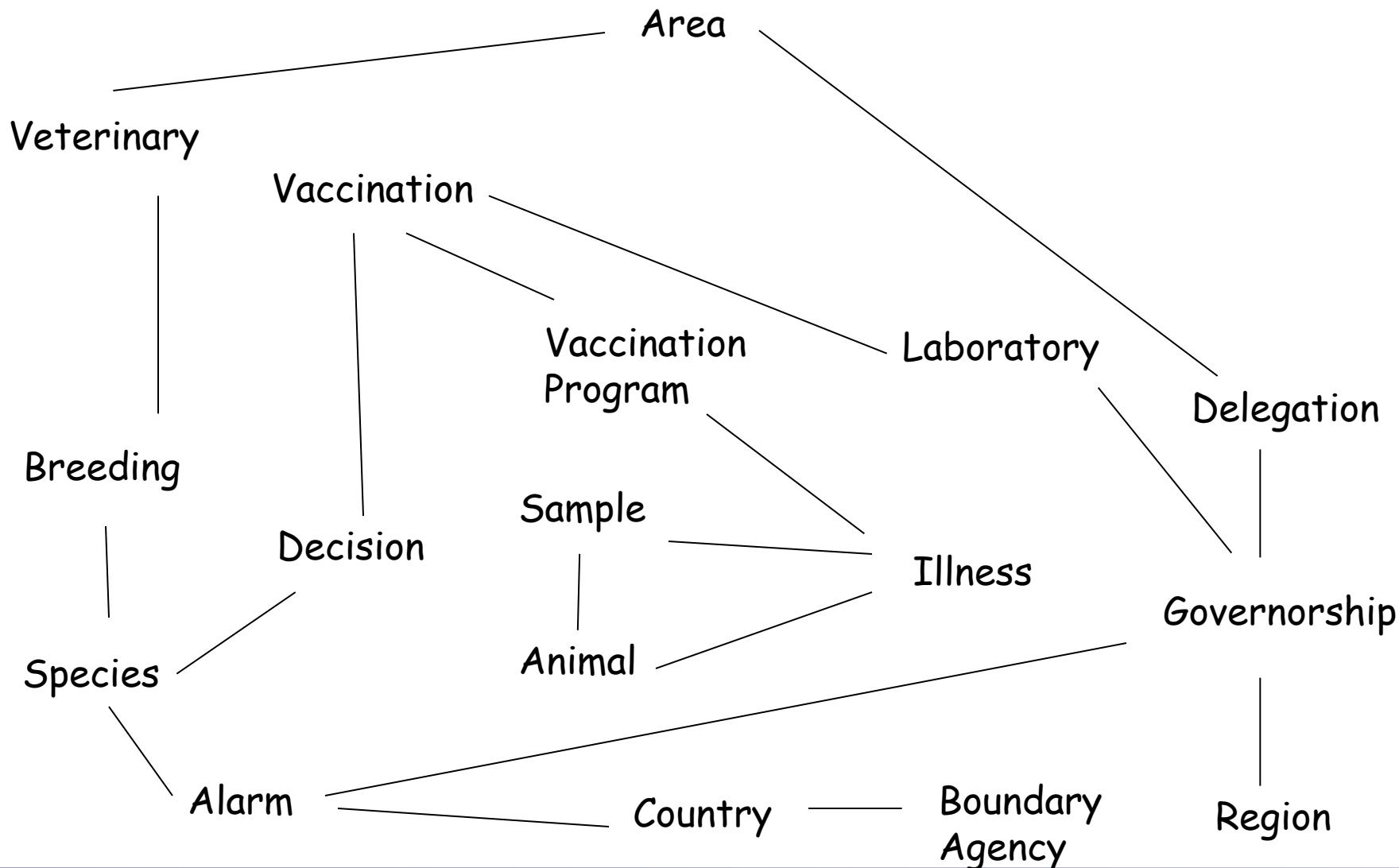
The abstraction integration tree of the four schemas



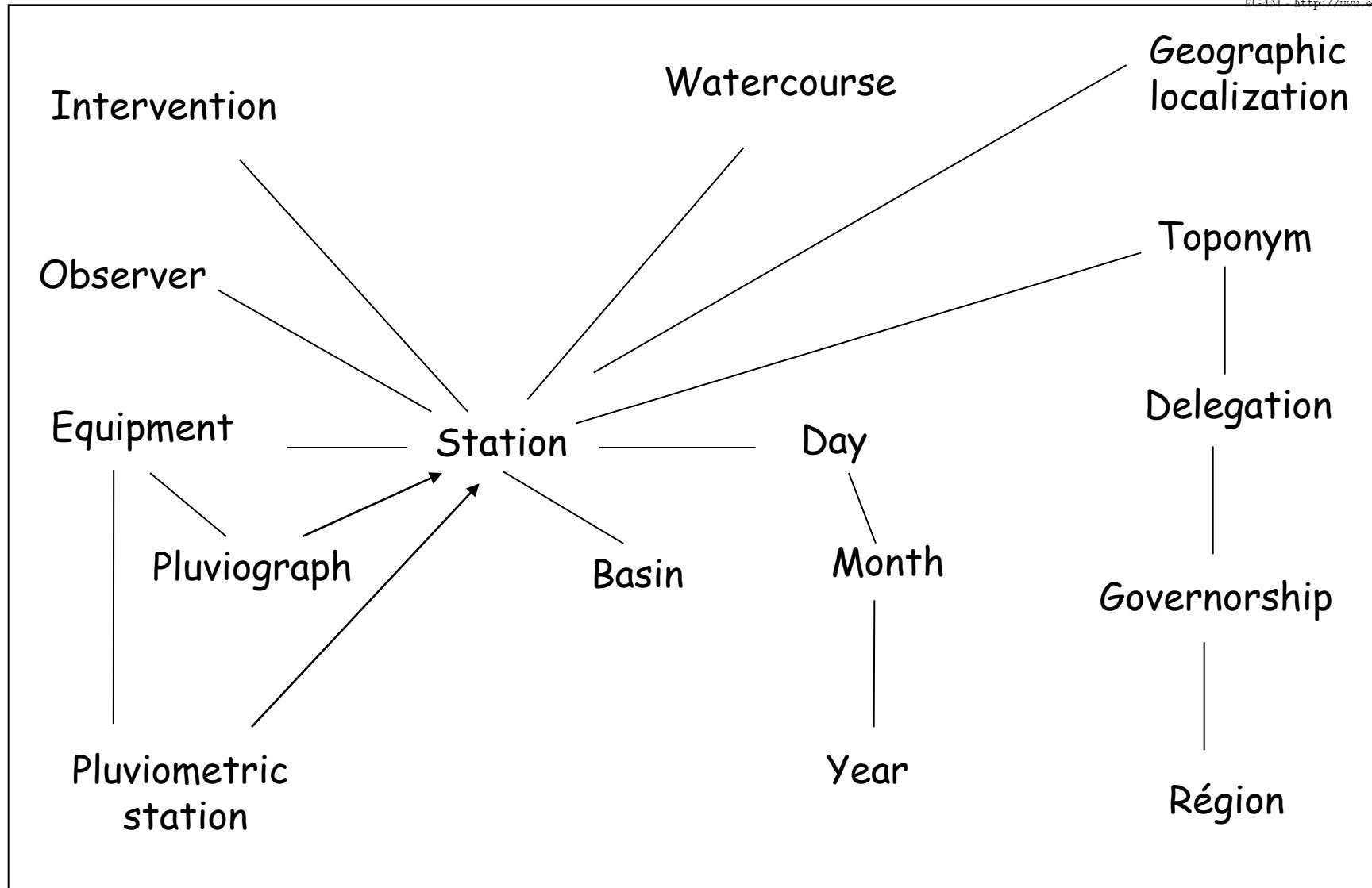
Agricultural state property schema



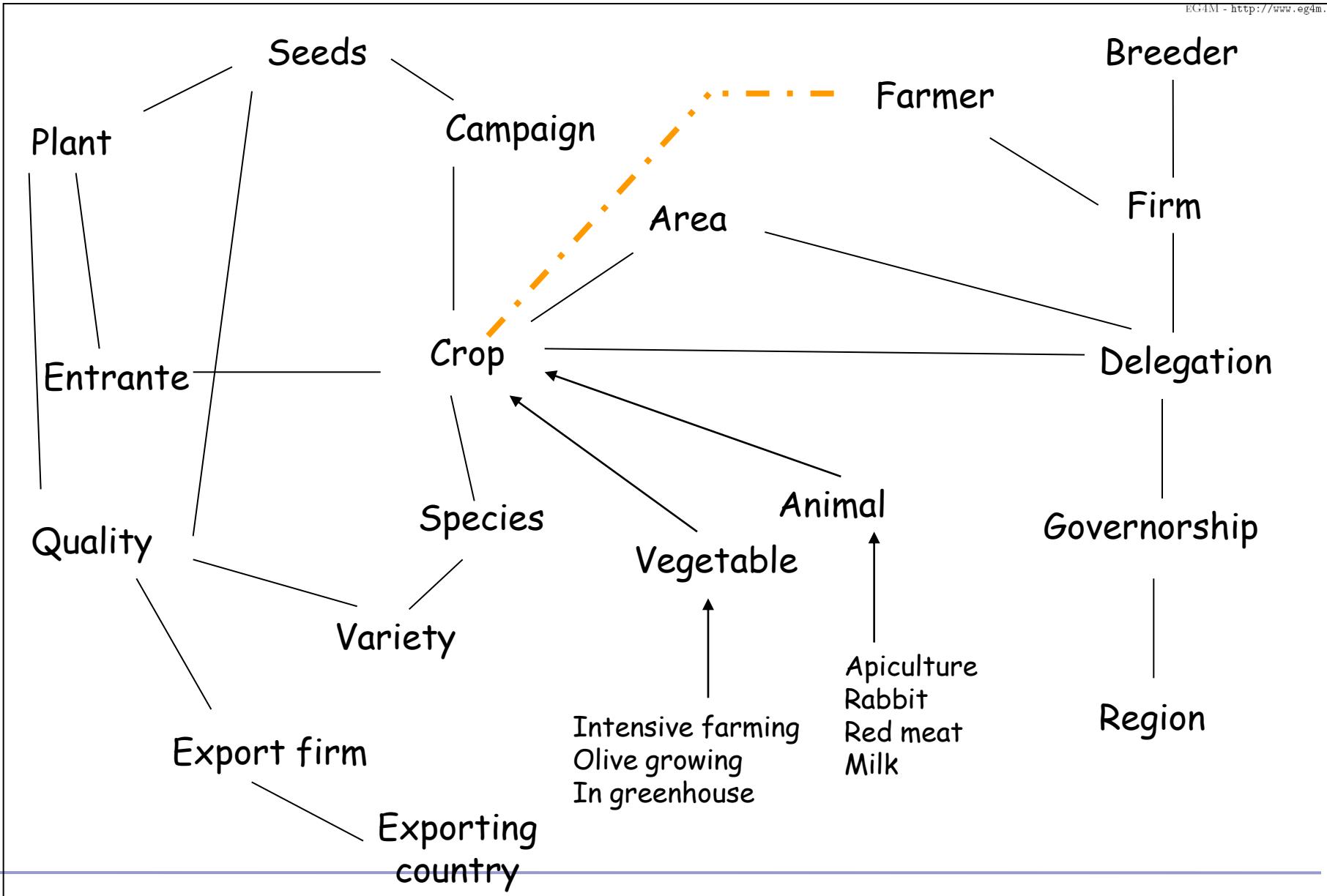
Veterinary services schema



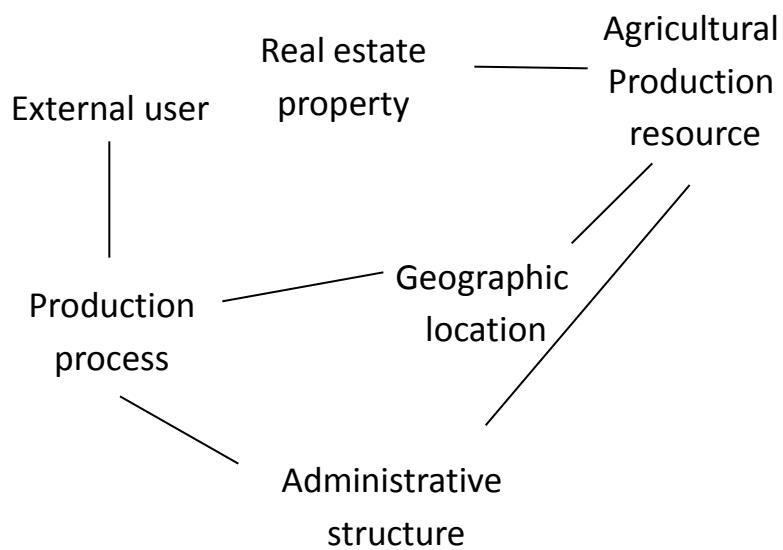
Water resources schema



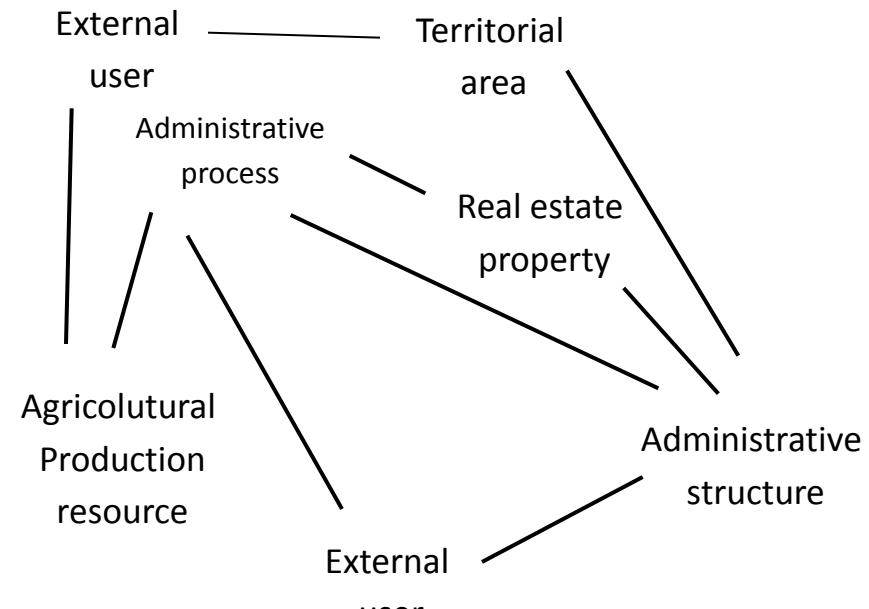
Production schema



Abstract Agricultural state property and veterinary services schemas

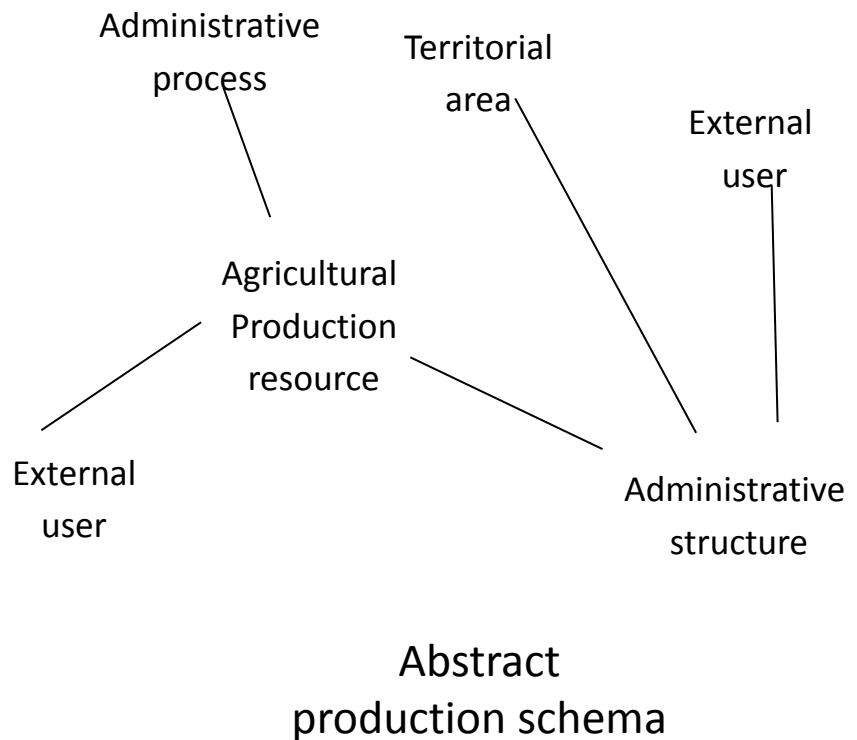
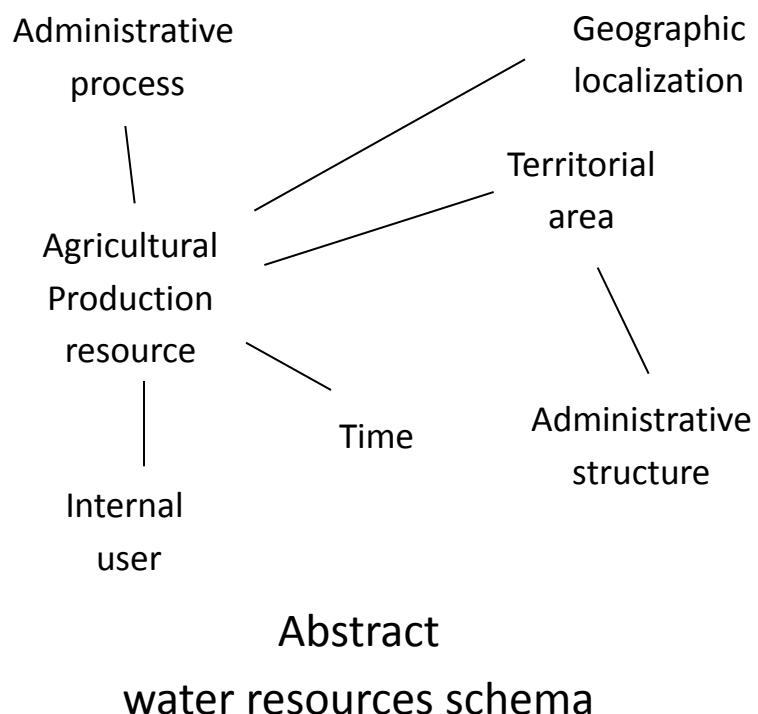


Abstract Agricultural state property schema



Abstract veterinary services schema

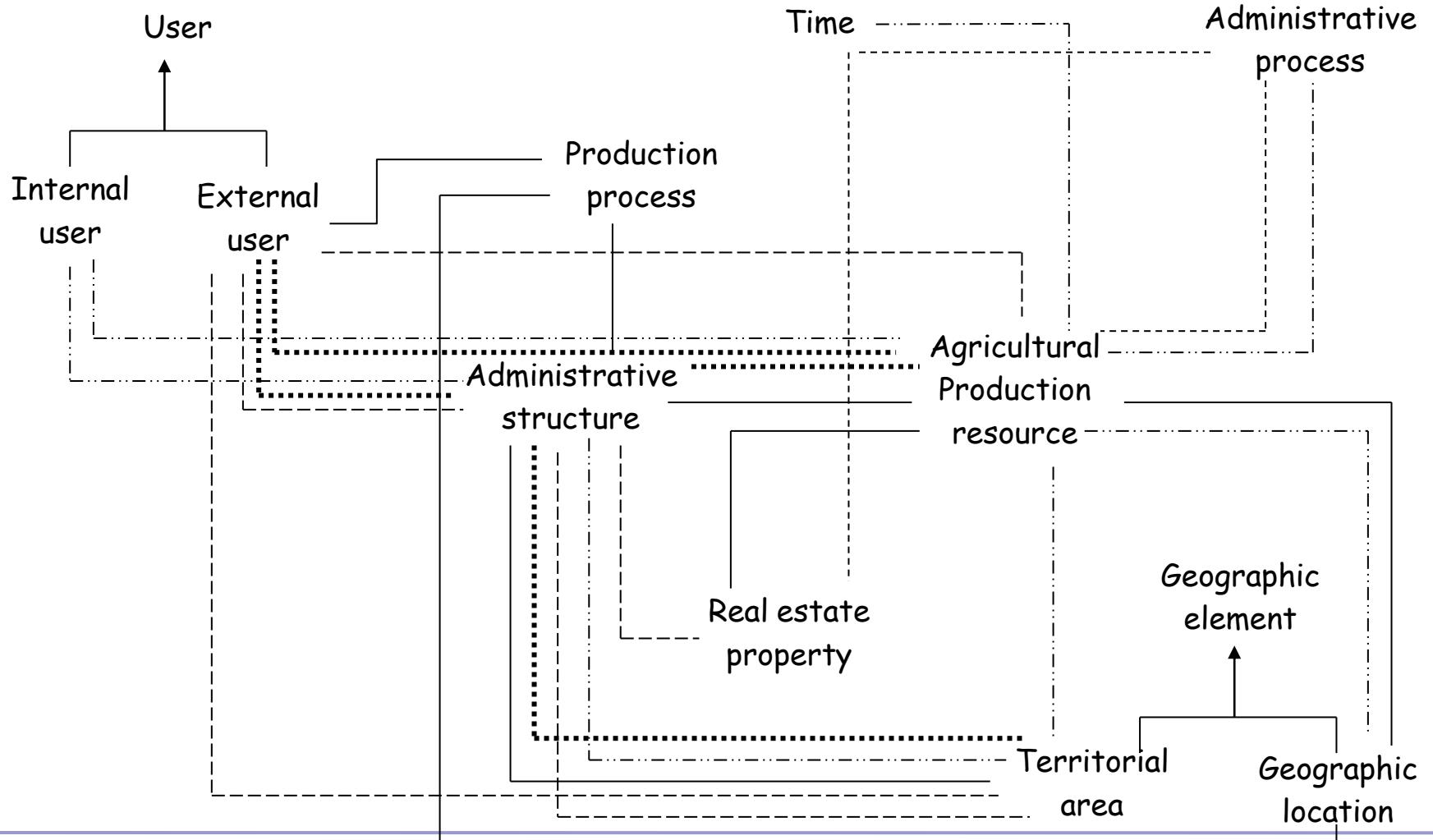
Abstract water and production schemas





—————	Agricultural state property schema
— — —	Veterinary services schema
— · · —	Water resources schema
········	Agricultural production schema

Abstract Integrated schema



Decision table

Decision criteria									Suggested solution
Autonomy	Relevance of historical data	Query complexity	Relevance of currency in queries	Economic value of integration	Relevance of queries wrt transactions	Volatility of queries	Management complexity	Costs of heterogeneities	Preferred solution
-	High	-	-	-	-	-	-	-	Data Warehouse
High	-	-	Low	High	-	-	-	-	Publish & Subscribe
Low	-	-	-	High	-	-	High	High	Consolidation
Low	-	-	-	High	-	-	High	High	Consolidation
Low	-	-	-	High	-	-	High	High	Consolidation
High	-	-	High	High	High	High	-	High	Data integration
High	-	-	-	-	High	-	-	-	Data integration
High	-	High	-	High	-	-	-	-	Data Warehouse

Decision table for the participatory choice of suitable technologies

Condition of use (advantage)	Condition of use (inconvenience)	Department	Technology
<ul style="list-style-type: none"> ■ HIGH AUTONOMY OF MANAGEMENT ■ HIGH ECONOMIC VALUE OF THE INTEGRATION ■ LOW RELATIVE IMPORTANCE OF THE QUERYING WITH RESPECT TO THE UPDATE 	<ul style="list-style-type: none"> ■ LOW OVERLAPPING OF THE DATA BETWEEN THE DIFFERENT DATABASES 	<ul style="list-style-type: none"> 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 	Enterprise Application Integration/Publish & Subscribe
<ul style="list-style-type: none"> ■ LOW AUTONOMY OF MANAGEMENT ■ HIGH COST OF HETEROGENEITY ■ HIGH ECONOMIC VALUE OF THE INTEGRATION ■ HIGH COMPLEXITY OF MANAGEMENT 	<ul style="list-style-type: none"> ■ HIGH AUTONOMY OF MANAGEMENT 	-	Central Database
<ul style="list-style-type: none"> ■ LOW AUTONOMY OF MANAGEMENT 	<ul style="list-style-type: none"> ■ HIGH NUMBER OF LOCAL QUERIES 	-	Distributed Database
<ul style="list-style-type: none"> ■ HIGH AUTONOMY OF MANAGEMENT ■ LOW VOLATILITY OF SOURCES ■ HIGH IMPORTANCE FOR THE ACCESS TO HISTORICAL DATA ■ HIGH RELATIVE IMPORTANCE OF THE QUERYING WITH RESPECT TO THE UPDATE ■ HIGH ECONOMICAL VALUE OF THE INTEGRATION ■ HIGH COMPLEXITY OF THE QUERYING 	<ul style="list-style-type: none"> ■ LOW RELATIVE IMPORTANCE OF THE QUERYING WITH RESPECT TO THE UPDATE ■ HIGH VOLATILITY OF SOURCES 	<ul style="list-style-type: none"> 1) The department of animal production; 2) The department of the restructuring of agricultural state-owned domains; 3) The department of veterinary services 	Datawarehouse
<ul style="list-style-type: none"> ■ HIGH AUTONOMY OF MANAGEMENT ■ HIGH VOLATILITY OF THE QUERYING ■ HIGH RELATIVE IMPORTANCE OF THE QUERYING WITH RESPECT TO THE UPDATE ■ HIGH COST OF HETEROGENEITY ■ HIGH ECONOMIC VALUE OF THE INTEGRATION 	<ul style="list-style-type: none"> ■ LOW RELATIVE IMPORTANCE OF THE QUERYING WITH RESPECT TO THE UPDATE ■ HIGH VOLATILITY OF SOURCES 	-	Enterprise Information Integration

A model of governance

Ministry

eGov Unit

Market

Planning

Definition of the quality of
the system

Feasibility study

Analysis

Deployment

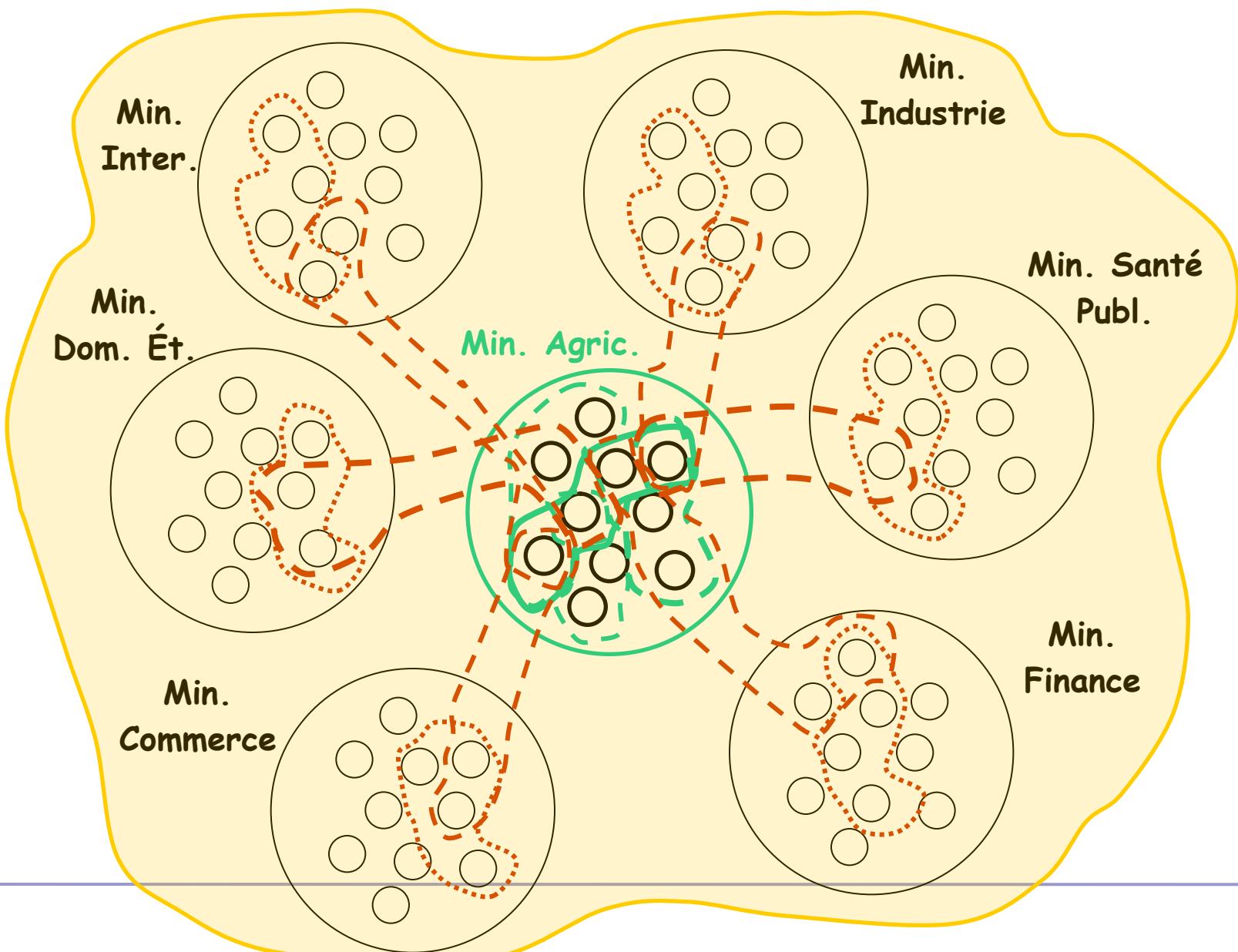
Testing

Exploitation

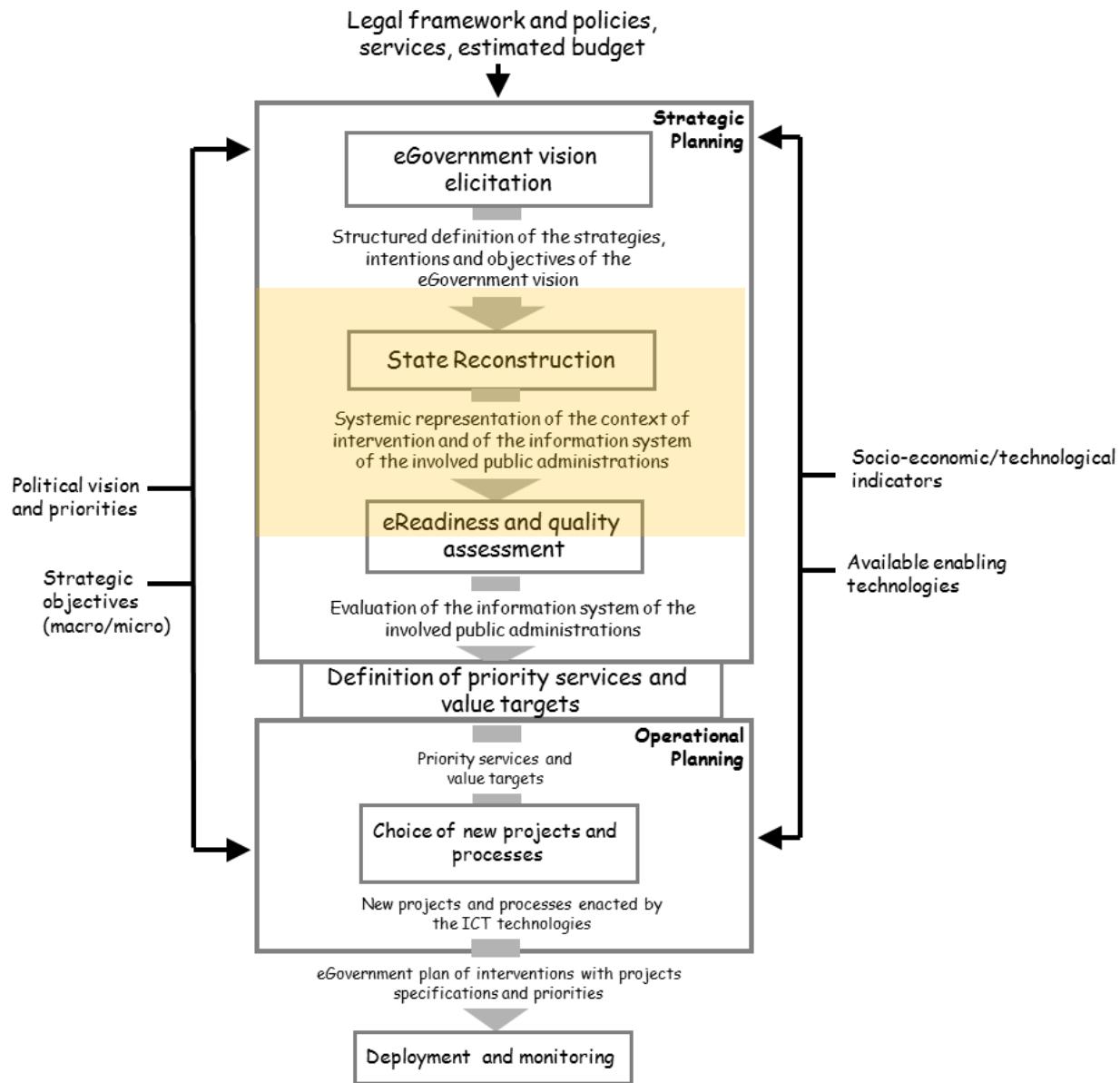
Maintenance

Monitoring

Hypothesis of development



The methodology in Tangier

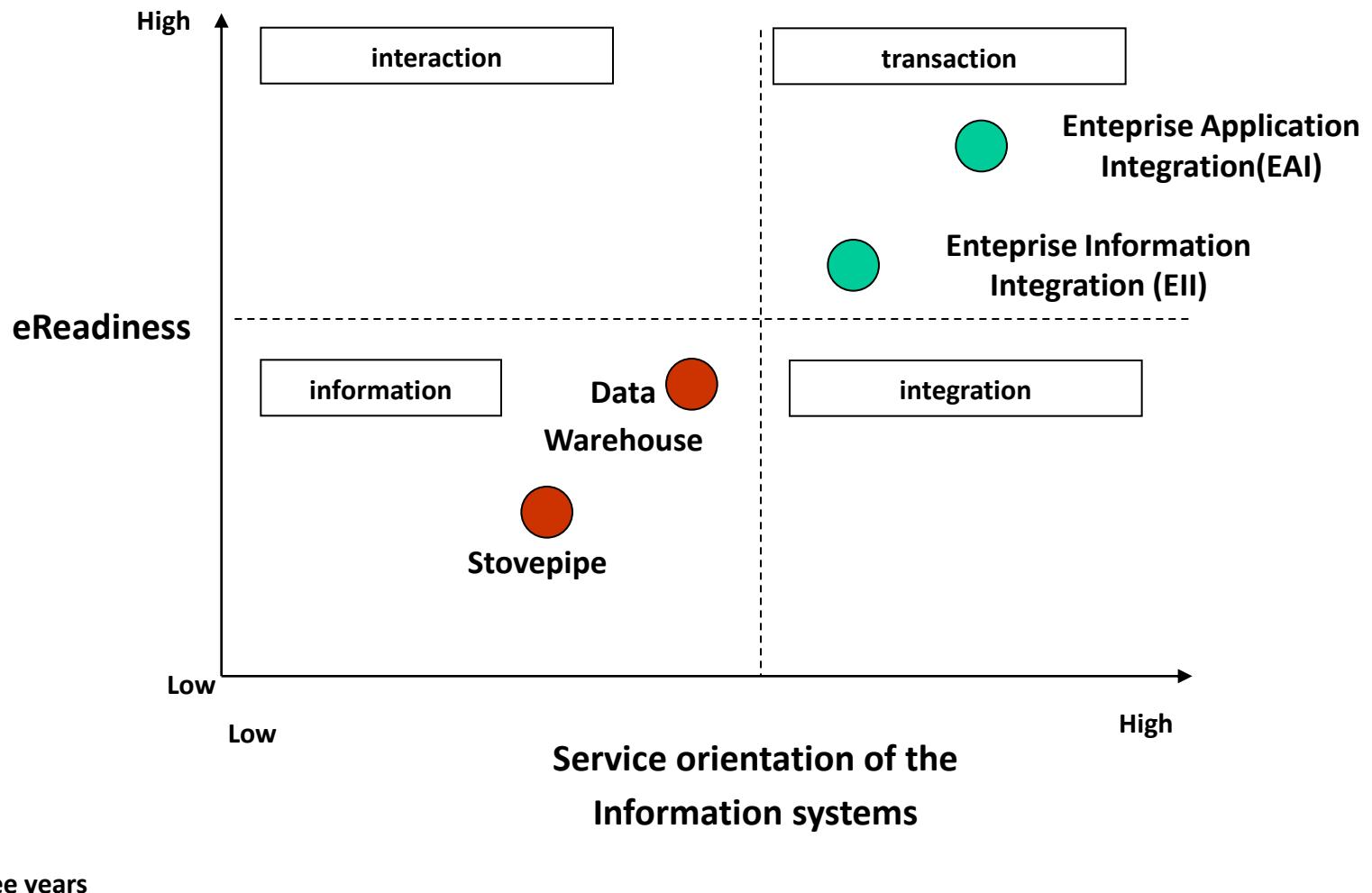


The GovQual application at municipality of Tangier

eG4M - <http://www.eg4m.net>

- 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



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

eG4M - <http://www.eg4m.net>

■ The questions concerned:

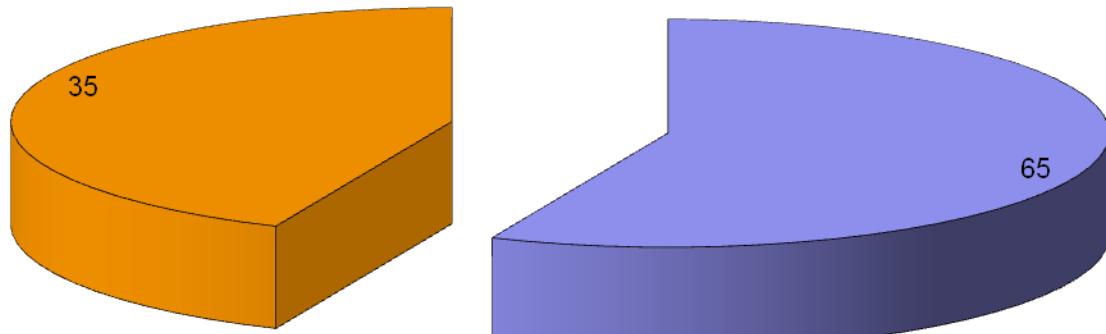
- Infrastructural and technological resources
- Knowledge resources and capabilities of employees
- Organizational Resources
- Accessibility to digital resources by citizens

Infrastructural and technological resources

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

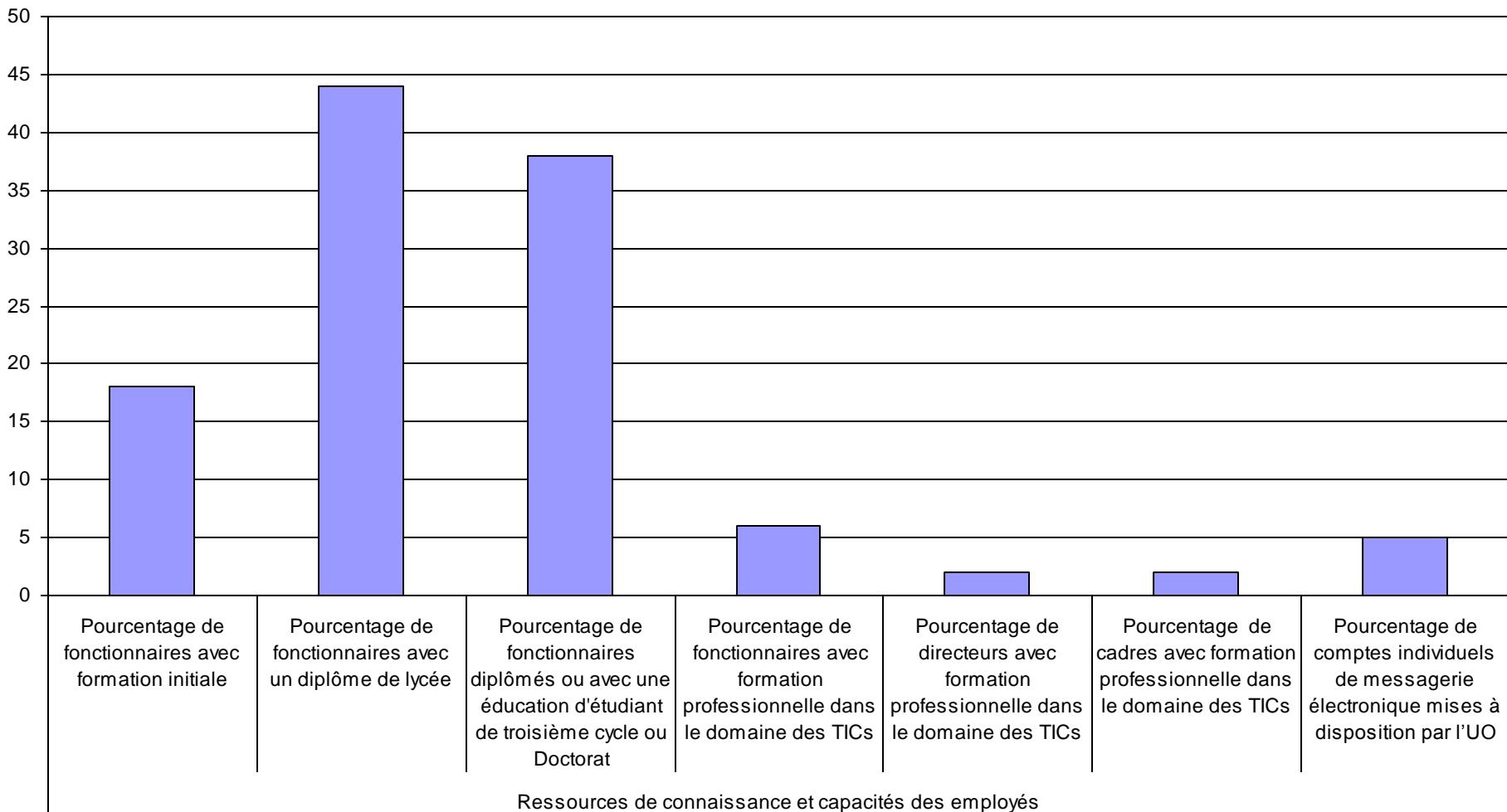


Goal: Back office integration (80-90%)



- Ressources infrastructureles et technologiques Fonctionnaires qui ont un ordinateur pour travailler
- Ressources infrastructureles et technologiques Internet connected PCs (56 kbps or less)

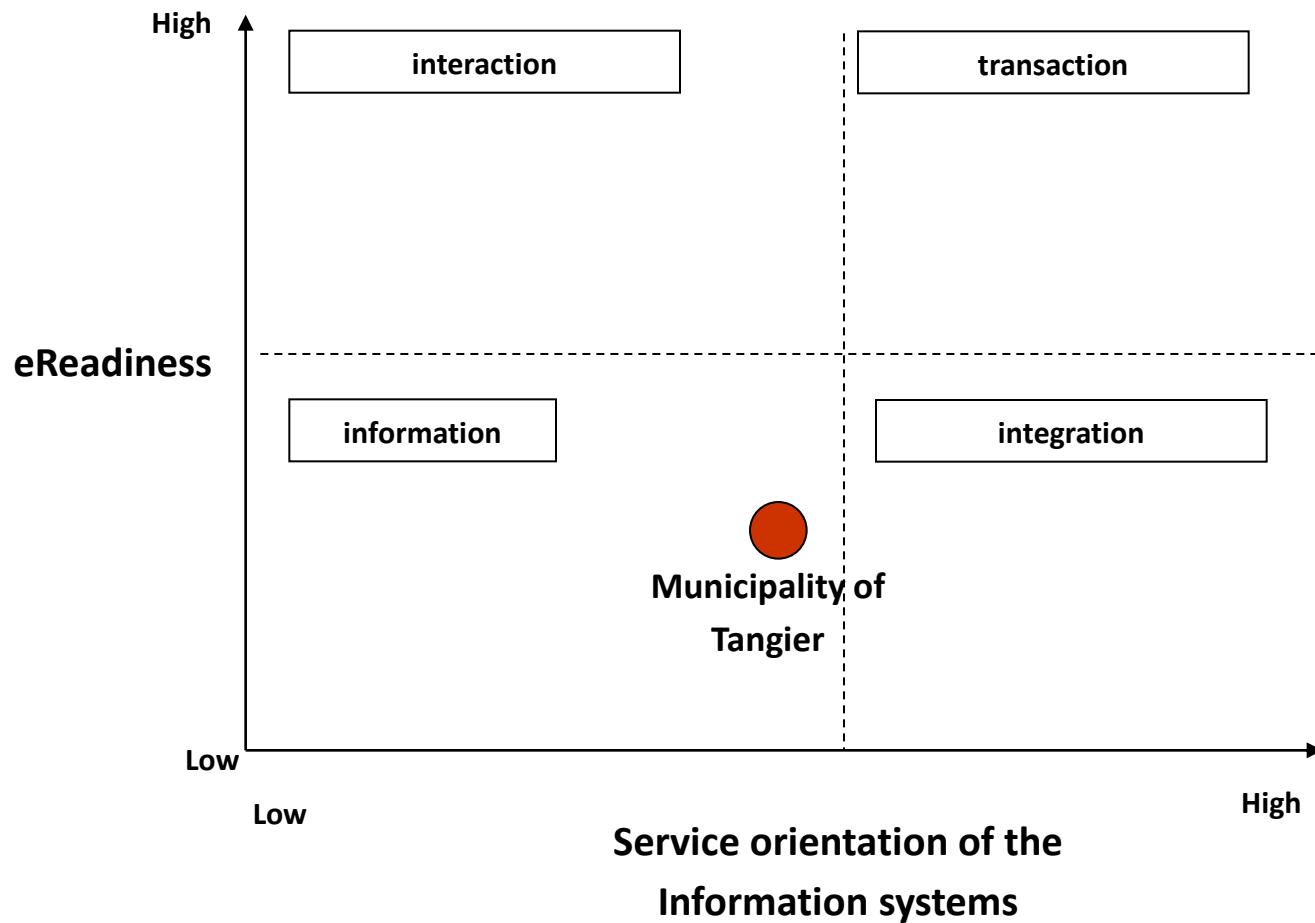
Knowledge resources and capabilities of employees



Organizational resources

Question	%
Pourcentage de budget de l'UO consacré à des investissements dans le domaine des TICs et pour la gestion des TICs	2
Critères d'avancement de carrière (Seulement par ancienneté)	70
Critères d'avancement de carrière (Un mélange des deux, c'est-à-dire par ancienneté et performance)	30
Est-ce que l'administration publique dans son ensemble a déclaré des objectifs clairs à remplir pendant l'année? (Vision confuse et non-réaliste)	20
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)	80
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)	80
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)	20
Niveaux hiérarchiques dans la structure organisationnelle (3 ou moins)	100
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)	80
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)	20
Si oui, ces projets se focalisent sur: L'arrière-guichet (sans contact avec les citoyens)	65
Si oui, ces projets se focalisent sur(Les tâches de guichet et d'arrière-guichet de manière égale)	35
Quel genre de services ces projets ont-ils mis en œuvre/mis à jour ? (Accès à l'information en-ligne)	65
Quel genre de services ces projets ont-ils mis en œuvre/mis à jour ? (Téléchargement de formulaires - 1ère étape de transaction)	35
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)	80
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)	20
Si oui, combien? (3-5)	100
Quels aspects sont-ils impliqués? (Organisationnels)	80
Quels aspects sont-ils impliqués? (Humains)	20

The positioning



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.

Recomendations : 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?**