

BPR CASES

Business Process Reengineering

by

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BPR IN THE PUBLIC SECTOR: THE CASE OF THE HOUSING DEVELOPMENT BOARD IN SINGAPORE

Source: James Y.L. Thong, Chee-Sing Yap, Kin-Lee Se, Business Process Reengineering in the Public Sector: The Case of the Housing Development Board in Singapore, in Journal of Management Information Systems / Summer 2000, Vol. 17, No. 1, pp. 245–270

House Development Board Profile

- The House Development Board was established in 1960 as the public housing authority of Singapore under the charge of the Ministry of National Development
- Its mission is to provide affordable housing of a high quality and to help build communities. It now focuses on improving the quality of public housing through better planning and design, efficient estate management, and the upgrading of older HDB estates.
- In 1960, only 9 percent of Singapore's population lived in public housing, and many people lived in overcrowded and unsanitary conditions. By 1998, 86 percent of Singapore's three million people lived in HDB flats.
- The HDB builds 30,000 flats a year and manages more than 730,000 units of residential properties, about 50,000 commercial and industrial properties, and over 500,000 parking lots.
- Services provided to the residents of HDB flats include: (1) financial services, such as administration of mortgage loans and collection of rent, monthly parking charges, and conservancy charges; (2) lease and tenancy services, such as transfer of ownership, surrender of flats, and renewal of tenancy; and (3) maintenance services, such as rectification of defects and approval of renovation works.
- Service points in the form of 21 branch offices are strategically located around the island-nation for convenient delivery of these services.

BPR Project Outline

- The Management Services (MS) team was based at the Model Branch Office for a one-year intensive hands-on study.
- Every step and procedure in the existing processes was scrutinized. Redundant steps and procedures were removed, and others were collapsed or streamlined from the customer's perspective.
- The MS team met with staff from the Model Branch Office, relevant headquarters departments, and Information Services Department regularly to examine the proposed new business processes and identify new information systems requirements.
- A new organizational structure was also proposed to support the new job responsibilities and facilitate the new workflow.
- The Model Branch Office concept was successfully piloted before an 18-month rollout plan was drawn up to implement the new systems and procedures throughout the remaining 20 branch offices.
- 1 year later, the revamp of all branch office operations was successfully completed, six months ahead of schedule.

BPR Results

Activities	Before BPR	After BPR	Improvement
Customer Service			
Average waiting time			
Finance Counter	40 minutes	1.1 minutes	97%
Estates Counter	17.2 minutes	3.6 minutes	79%
Percentage of unanswered calls	26%	4%	85%
Lease & Tenancy Services			
Average processing time			
Surrender of flats	8.4 months	3.7 months	56%
Transfer of ownership	8.8 months	3.9 months	56%
Sale of recess area	3.4 months	1.9 months	44%
Shops submissions	6.3 months	2.9 months	54%
Renewal of fixed-term tenancy	3.7 months	1.1 months	70%
Termination of tenancy	2.5 months	1.4 months	44%
Number of cases awaiting attention	4665	693	85%
Financial Services			
Average processing time			
Loan redemption	4.2 months	0.8 months	81%
Loan extension	14 days	5 days	64%
Lump sum payment	2.4 months	1.4 months	42%
Accounts requiring manual adjustments			
GIRO accounts	518/month	105/month	80%
Sales accounts	787/month	66/month	92%
Rental accounts	51/month	30/month	41%
Vouchers prepared			
Journal vouchers	85/month	13/month	85%
Payment vouchers	39/month	22/month	44%
Maintenance/Renovation Services			
Average processing time			
Renovation permit	1.4 months	0.5 month	57%
Electrical upgrading (mains)	8.0 months	4.0 months	50%
Average time to attend to maintenance requests	2.3 months	0.5 month	78%
General Administration			
File retrieval time	10 minutes	5.4 minutes	46%
Daily volume of file movement	923 files	603 files	35%
Number of forms/standard letters	369	291	21%

Lessons learnt - I

- L1: Public organizations are highly resistant to change. Social and political changes are the main pressures on them to reengineer their processes.
- L2: Publicity in the press is a powerful way for public organizations to draw the full attention of staff to the BPR effort and to convince them of its importance.
- L3: Public organizations locating the reengineering team at the pilot site for the duration of the project can develop close working relationships to overcome user resistance to change.
- L4: Public organizations should bear in mind that staff who are familiar with the functions of various departments and are trained in management science and operations research are very useful resources for BPR.
- L5: The use of a group of neutral staff officers to form the core reengineering team that draws on the expertise of other departments is an attractive arrangement for structuring a reengineering team in public organizations.
- L6: Public organizations should note that it is critical to validate the documented work process with operational staff to ensure its accuracy.
- L7: Public organizations that adopt a one-site pilot study method must exercise sufficient care in site selection to ensure that the site is representative of other sites.

Lessons learnt - II

- L8: In the absence of traditional market indicators, public organizations need to adapt performance indicators from the private sector to set benchmarks for improving the current processes.
- L9: The steering committee is an essential mechanism in gaining approval of redesigned procedures in public organizations.
- L10: The primary criterion in selecting a new IT architecture in public organizations is the ability to support the redesigned processes without undue risks.
- L11: Public organizations that apply the casework concept should review staff training needs for the reengineered jobs.
- L12: Performance measures in public organizations should be simple and highly focused on the end result.
- L13: A revised incentive structure to support the redesigned processes is critical to the public organization's success in reengineering.
- L14: A pilot implementation will help to refine the redesigned processes.
- L15: Results from a successful pilot implementation will help to obtain approval for the main funding.

Lessons learnt - II

- L16: Public organizations undertaking BPR should commit sufficient time and resources to retraining of staff.
- L17: Public organizations need to plan the rollout of redesigned processes throughout the organization carefully.
- L18: Public organizations undertaking BPR need to educate and prepare all staff for the forthcoming changes through an intensive communication program, possibly including news articles and site visits.
- L19: Public organizations should view reengineering and IT as an integrated strategy.



CITIZENS COLLABORATION
& CO-CREATION in PUBLIC
SERVICE DELIVERY



COCKPIT (ICT 2009 FP7- 248222)

Source: <http://www.cockpit-project.eu/>

At a glance

- **COCKPIT** – Citizens Collaboration and Co-Creation in Public Service Delivery
- **STREP project** co-funded by the European Union FP7 ICT for governance and Policy Modelling
- **Project start:** January 2010 for 36 months
- **Overall budget:** ~ 4M €
- **Project Coordinator:** INTRASOFT International S.A.
- **Technical Coordinator:** IBM Research India
- **12 different organisations** from 8 countries form the COCKPIT consortium

Vision

To conceive, design and implement public services that:

- Respond to citizens' needs and wishes, as increasingly expressed in Web 2.0 social media.
- Introduce achievements in the services industry to the public sector, as offered by the Service Science, Management and Engineering academic and research discipline.
- Enable citizens informed judgment before actual public service delivery.

Public Service Engineering

- Provide communication channels to engage stakeholders in public service creation:
 - Citizens, businesses, community
 - Public Administrations
 - Delivery Organisations
- Integrate multi-disciplinary models and simulation methods into a rigorous service engineering process.
 - Consider policy and legislative constraints
 - Consider budgetary constraints

Gathering Requirements

- Citizens' Requirements - opinions and needs will be increasingly expressed in Web 2.0 social media.
 - Opinion mining can be employed to gather citizens' requirements:
 - *Content Collection* from publicly available data sources (blogs, fora, newsgroups, msn, excluding sites requiring membership)
 - *Content Analysis* on policy and public service of interest
- Public Administrations/Delivery Organisations Requirements
 - Use of MISs to gather statistical data on volume, frequency, processing time, delivery time, accumulated cost, etc
 - Evaluate and transform into constraints in the service engineering process

Public Service Modelling

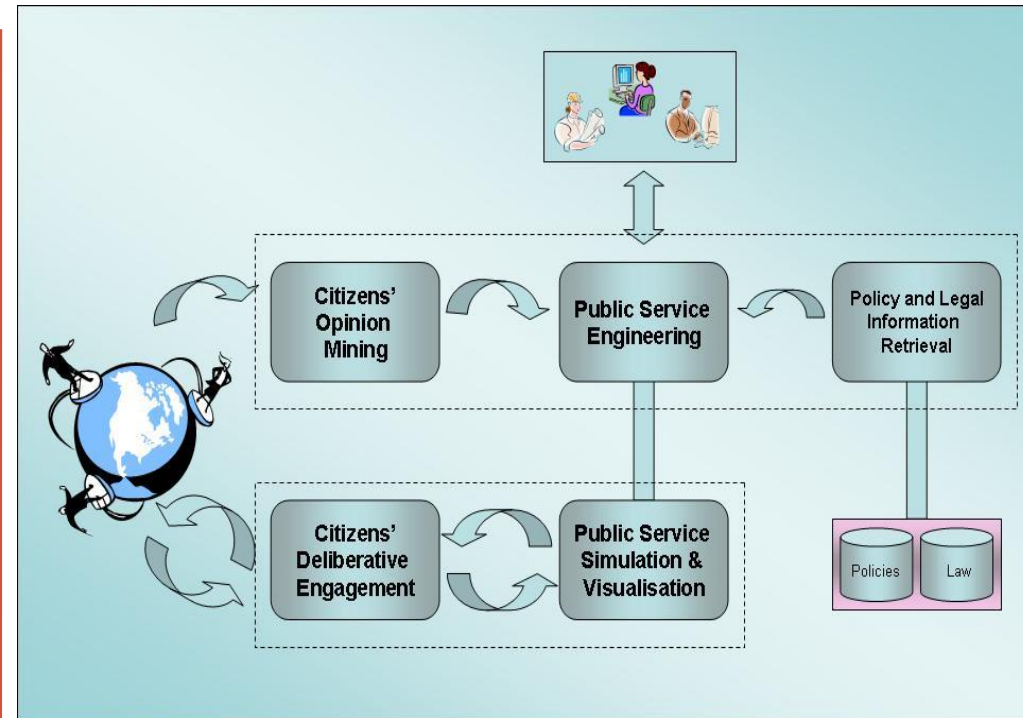
- Combine social and technical dimensions in an engineering approach by means of *Public Service Blueprints*
- Public Service Blueprints integrate:
 - *Service models*, defining interfaces and service collaborations
 - *Process maps*, defining abstract models of standard public service processes,
 - *Performance models*, defining process-, service- and resource performance indicators (KPIs, QoS),
 - *Value models*, defining costs and benefits associated to public services, and
 - *Lifecycle models*, defining deployment descriptions and monitoring reqs

Public Service Simulation

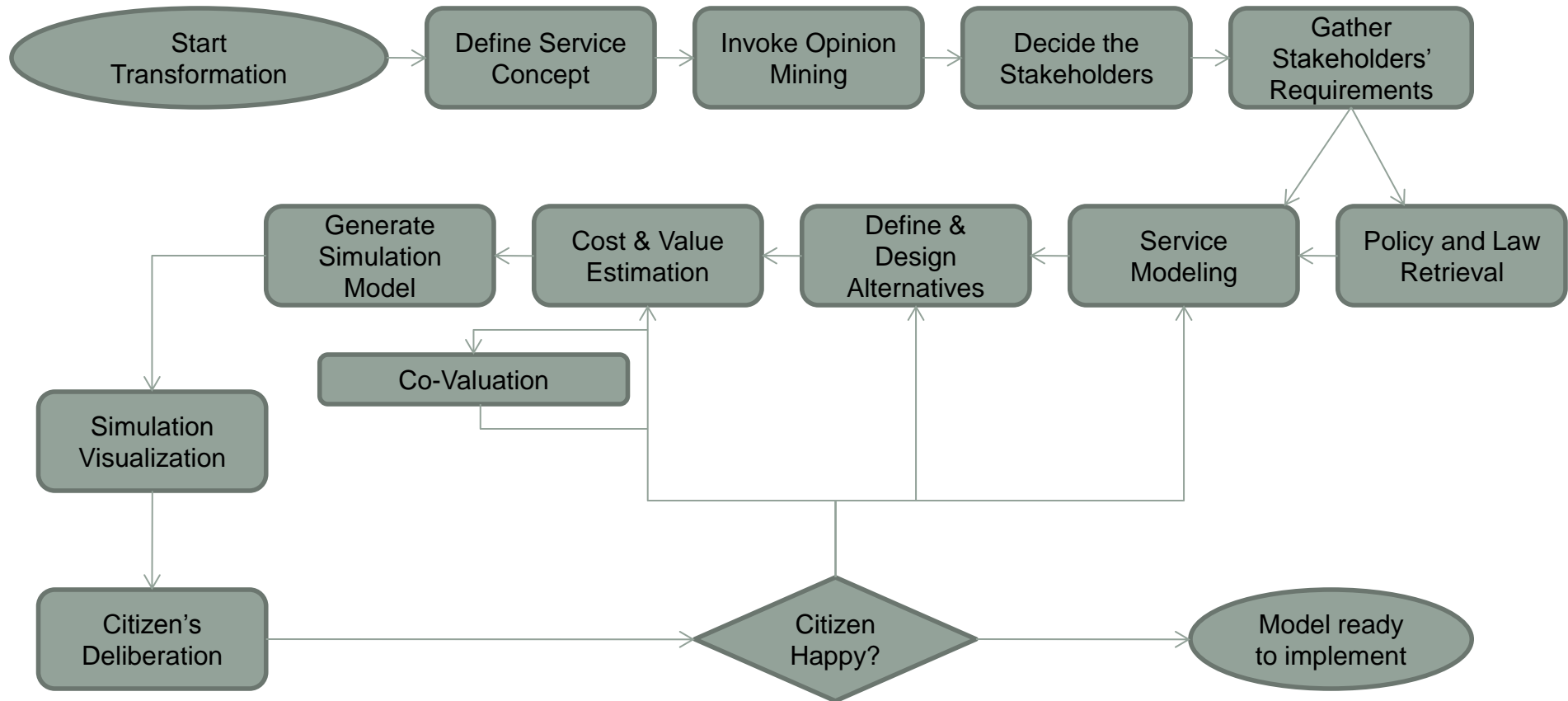
- Simulation models provide an ideal way for all stakeholders to obtain an appreciation of the proposed public service.
- Minimum set of input:
 - List of all service request together with the distribution function of their arrival time.
 - A set of service processes/task for handling each service request
 - A set of capabilities required to perform each task
 - A function for estimating the task time, cost of execution, etc
 - A time dependent resource availability function
 - A dispatcher algorithm to handle requests and allocate resources.

Envisioned approach

- **Citizens' Opinion Mining Tool**
Extracting citizens' needs on public services delivery from Web 2.0 applications
- **Public Service Engineering Tool**
Service modeling methodology for the public sector
- **Policy and Law Retrieval Tool**
Support by standing legal framework
- **Public Service Simulation & Visualisation tool**
Adjustments/Fine tuning
- **Deliberate Citizens' Engagement Platform**
Web based dialogue between decision makers and citizens



COCKPIT Methodology



Basic Features of COCKPIT Integrated Toolkit - I

- **The prototype toolkit derives its functionality and features from seven individual components, namely:**
 - ▶ **Service Engineering Tool (SE)**
 - Define basic public service metadata (basic details).
 - Define extended information of a public service.
 - Provide public service design elements.
 - Export public service documents-artifacts.
 - ▶ **Opinion Mining (OM)**
 - Crawl publicly available opinions.
 - Polarize opinions based on sentimental analysis.
 - ▶ **Service Simulation & Visualization Tool (SV)**
 - Create visual simulations of public services.
 - Interact with visual simulation on the Deliberation Platform.

Basic Features of COCKPIT Integrated Toolkit - II

- ▶ **Service Policy and Law Retrieval Tool (PL)**
 - Search and retrieve policy and law documents from related domains.
 - Attach documents to the public service design process.

- ▶ **Citizens' Deliberative Engagement Platform (DP)**
 - Browse basic public service design metadata and generated simulations related to these services.
 - Allow end-users to provide comments and participate in forums.
 - Participate in related polls of a public service generated during the design process.

- ▶ **Cost & Valuation Tool (CV)**
 - Define cost variability aspects of the public service model.
 - Create and publish polls for assessing alternative variability modeling aspects.
 - Evaluate polls' outcome for optimizing/adjusting the designed models.

COCKPIT Methodology: Define Service Concept Screenshots - I

The screenshot displays the 'Services' application window. The main pane shows the configuration for the service 'Authorization and charging for the occupation of public spaces'. The configuration includes:

- Identifier: IT02
- Date Modified: 02/05/2010
- Title: Authorization and charging for the occupation of public spaces
- Category: Government-to-Citizens
- Service Nature: other (please specify) with a sub-field containing 'licence/payment'
- Importance: Medium (selected)
- Source of Info: <http://www.egov.comune.venezia.it/cosap/index.jsp>

Two callout boxes provide additional context:

- Category Callout:**
 - Government-to-Citizens
 - Government-to-Businesses
 - Government-to-Institutions(Organizations)
 - Government-to-Government
- Service Nature Callout:**
 - license
 - certificate
 - registration
 - request
 - objection
 - payment
 - return
 - other (please specify)

The interface includes a menu bar (File, Edit, View, Toolkit, Help), a toolbar with various icons, and a left-hand navigation tree. The bottom of the window features buttons for 'Save...', 'Delete...', and 'Reload from database...'. The status bar at the very bottom indicates 'Cockpit'.

COCKPIT Methodology: Define Service Concept Screenshots - II

The screenshot displays the Cockpit software interface for defining service concepts. The window title is "Services". The menu bar includes "File", "Edit", "View", "Toolkit", and "Help". The toolbar contains icons for file operations and specific tools: "Opinion Mining Tool", "Poilicy Law Tool", and "Engineering Tool".

The left sidebar shows a tree view of services:

- Services
 - IT02 - Authorization and charging for the occupation of public spaces
 - Service Information
 - Concept
 - Stakeholders
 - Requirements
 - Design
 - New

Authorization and charging for the occupation of public spaces

Overview Goals Keywords

List of Desired Outcomes

Outcome	Date
▶ Reduce time to obtain a response	31/12/2012
Increase use of on-line services	31/12/2012
*	

Metrics of Selected Outcome

Metric	Current	Desired
▶ Number of on-line payment transaction	2-3 per year	100% per ...
Time from request submission to respo...	60 days	30 days

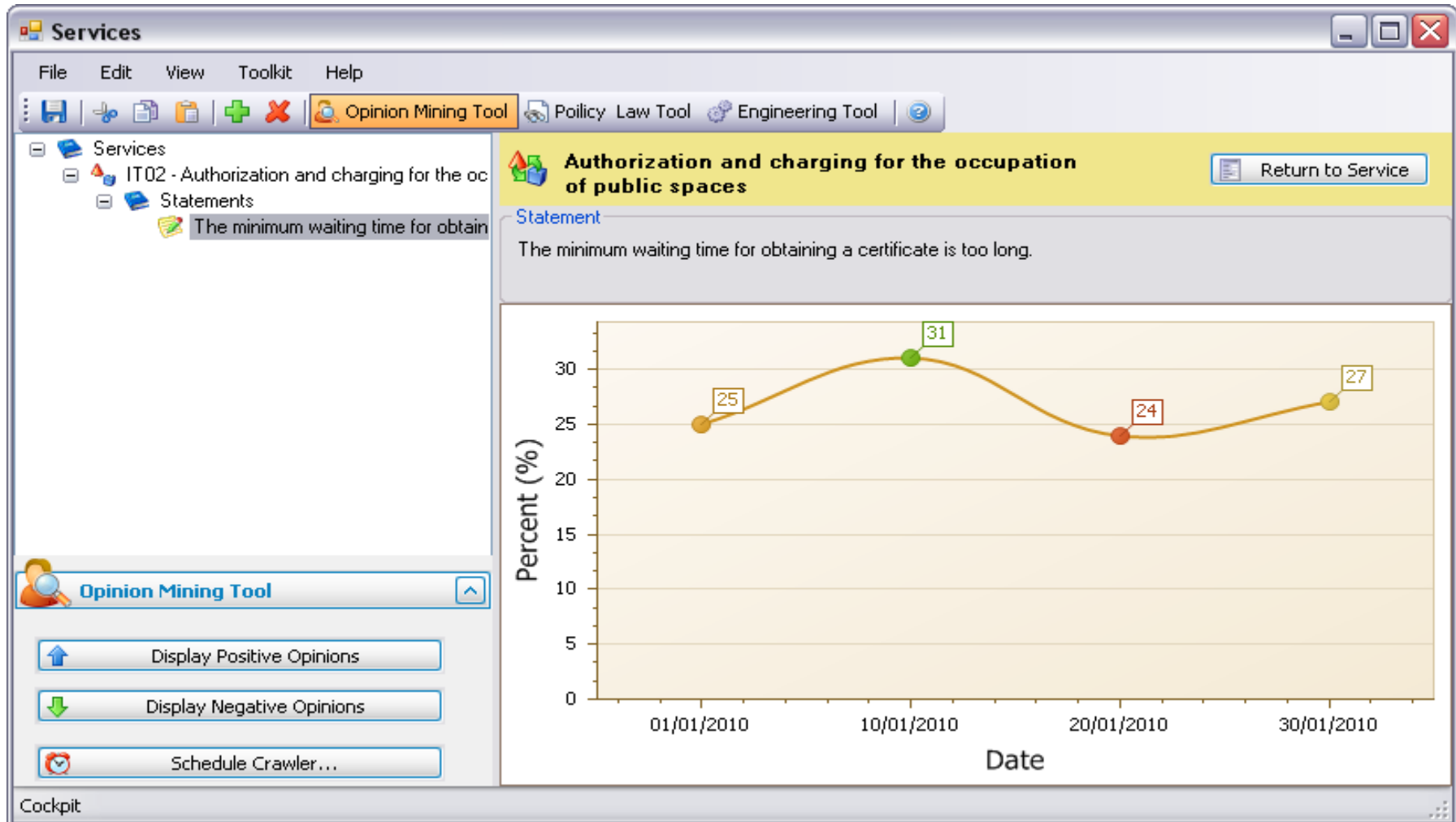
Add Delete...

Add Delete...

Save... Delete...

Reload from database...

COCKPIT Methodology: Invoking Opinion Mining Tool - Screenshots



COCKPIT Methodology: Gather Stakeholder's Requirements - Screenshots

The screenshot displays the Cockpit software interface, which is used for gathering stakeholder requirements. The window title is "Services" and it features a menu bar (File, Edit, View, Toolkit, Help) and a toolbar with various icons. The main workspace is titled "Authorization and charging for the occupation of public spaces" and is divided into several sections.

Requirements Table:

No.	Service Req. Name	Origina...	Frequency	Presense Required	Volume
1	Request of consent for occupa...	Citizen	656 per year	None	
*					

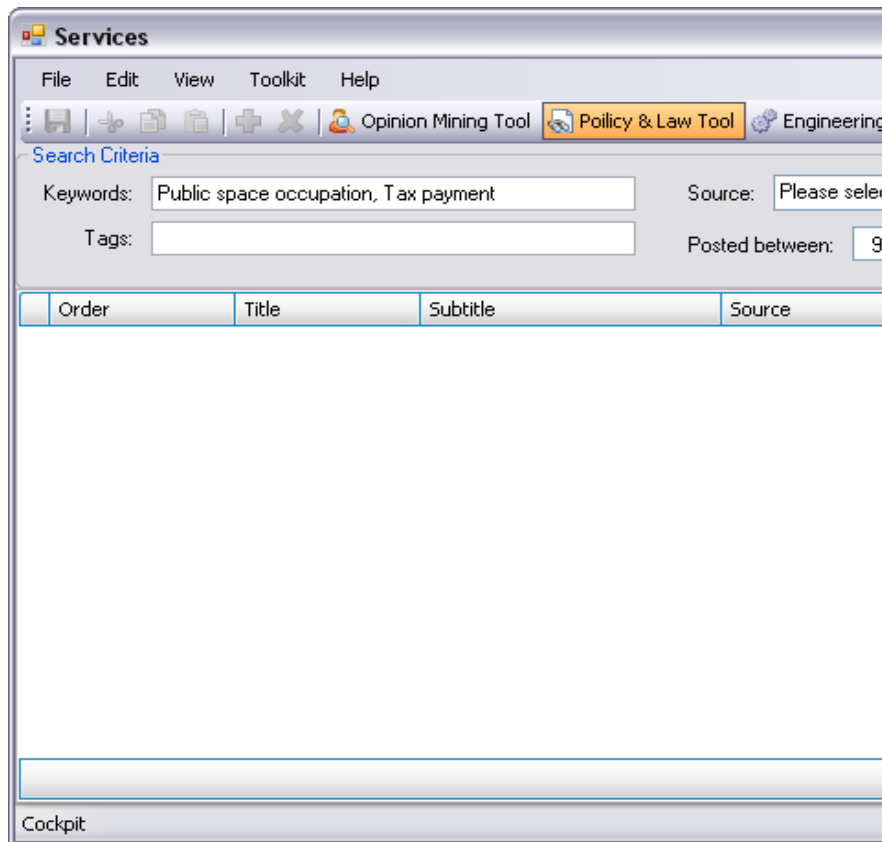
Service Request Name: Request of consent for occupation of public space

Functional Reqs. Table:

No	Req. Name	Metric	Current V...	Desired V...	Importance
1	Fast communication with ...	Time for obtain r...	>30 days	10 days	Low Mec High
*					Low Mec High

The interface also includes a left-hand navigation pane with a tree view showing "Services", "IT02 - Authorization and charging for the occupation...", "Service Information", "Concept", "Stakeholders", "Requirements", "Design", and "New". At the bottom, there are buttons for "Save...", "Delete...", and "Reload from database...".

COCKPIT Methodology: Policy and Law Retrieval - Screenshots



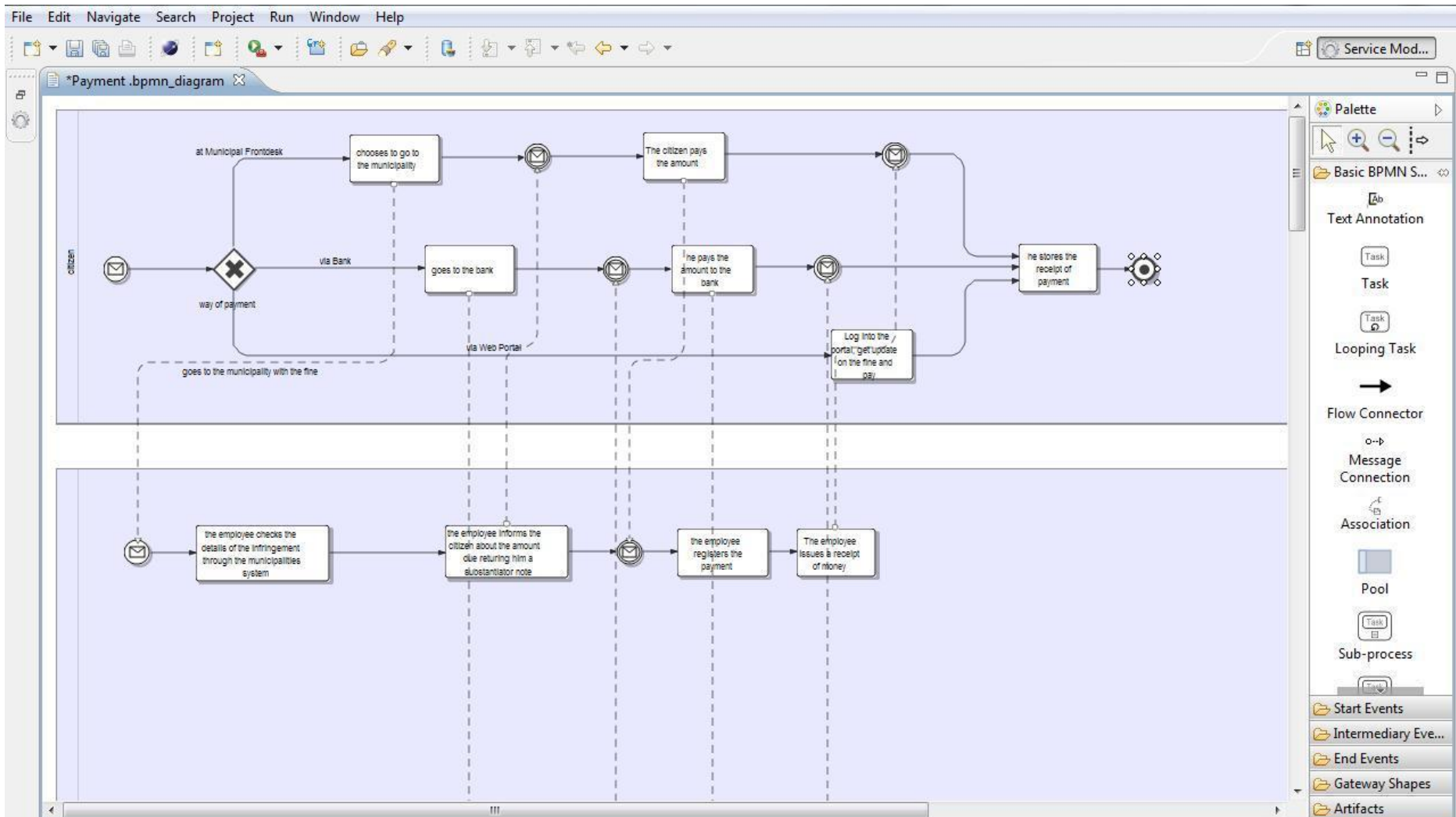
The screenshot shows the 'Policy and Law - Search Documents' window. The search criteria are:

- Keywords: municipal tax
- Tags: (empty)

The search results are displayed on Page 1 of 10. The results are as follows:

- 1. C2005/093/03** eur-lex Updated 16/04/2005
Official Journal C 093 , 16/04/2005 P. 0002 - 0002
[Court of Justice of the European Communities](#)
Judgment of the Court (Third Chamber) of 17 February 2005 in Case C-134/03:
(reference for a preliminary ruling from the Giudice di pace di Genova-Voltri) Viacom Outdoor Srl v Giotto Immobilier SARL (Freedom to provide services — Competition — Bill-posting services — Domestic legislation imposing a **municipal tax** on advertising — Supply by municipalities of a public bill-posting service — Power of the municipalities to regulate the supply of bill-posting services — Internal taxation not discriminatory)
- 2. 62003J0134** eur-lex Updated 17/2/2005
European Court reports 2005 Page I-01167
[Court of Justice of the European Communities](#)
Judgment of the Court (Third Chamber) of 17 February 2005.
Viacom Outdoor Srl v Giotto Immobilier SARL.
Reference for a preliminary ruling: Giudice di pace di Genova-Voltri - Italy.
Freedom to provide services - Competition - Bill-posting services - Domestic legislation imposing a **municipal tax** on advertising - Supply by municipalities of a public bill-posting service - Power of the municipalities to regulate the supply of bill-posting services - Internal taxation not discriminatory. Case C-134/03.

COCKPIT Methodology: Service Modelling - Screenshots



COCKPIT Methodology: Citizens' Deliberation - Screenshots

Cockpit CITIZENS COLLABORATION & CO-CREATION in PUBLIC SERVICE DELIVERY

Policy & Law | **Simulation** | Deliberation | Polls | Kostas Gian

Emergency Department | 1 Jan 2006 3:59:55 pm

Legend:

- doctor
- tech
- UG tech
- patient
- PA
- GAT tech
- x-ray tech
- spec
- EMS
- transport
- nurse
- US tech
- triage nurse
- Room: empty, occupied, utilization

Animation | Run: 0 | Paused | Time: 239.92

Cockpit CITIZENS COLLABORATION & CO-CREATION in PUBLIC SERVICE DELIVERY

Policy & Law | Simulation | Deliberation | **Polls**

1. What do you think of the Citizens' deliberation platform?

It is very good! (1) 33%

It is promising, but needs more work. (2) 67%

A major redesign is needed. (0) 0%

It is useless. (0) 0%

Cockpit CITIZENS COLLABORATION & CO-CREATION in PUBLIC SERVICE DELIVERY

Policy & Law | Simulation | **Deliberation** | Polls | Kostas Giannakakis | Log out

Forum | View latest 6, 12, 24, 48 hours | View unread threads

Forums	Threads	Posts	Last Post
Cockpit Project Discussions about the Cockpit project in general	0	0	None
Cockpit Pilots Discussions about the Cockpit pilots Subforums: Athens pilot, Tilburg Pilot, Venice Pilot	0	0	The Athens pilo... Today @ 10:50 AM by admin
Events Discussions about Cockpit Events	0	0	None

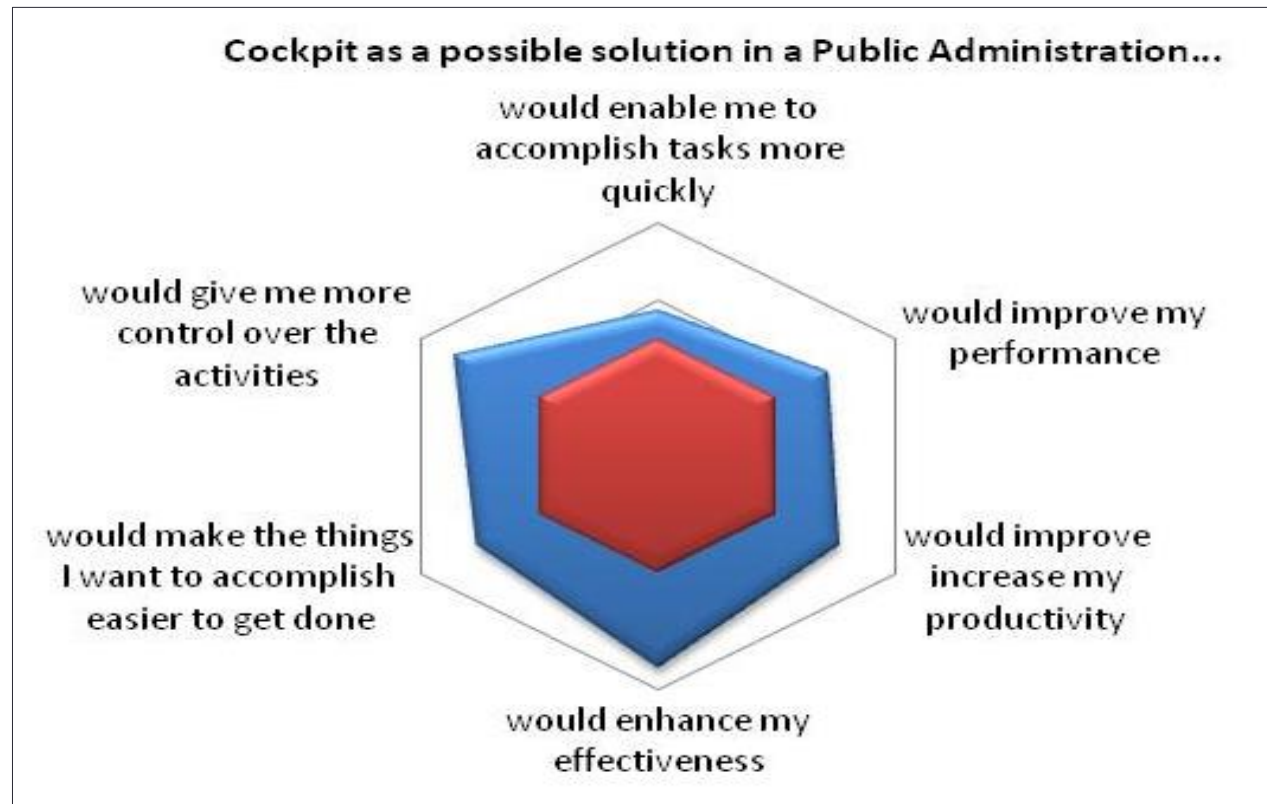
6 Forums in 1 Groups

Piloting in Public Organizations

- Greek Ministry of Interior (YPES) – GR
 - Social Insurance Record Access
 - Citizen's Card -> Deliberation-based
 - Payment of Municipal Parking Ticket
- City of Tilburg - NL
- City of Venice - IT

Expected Impact

- **Web 2.0 as the emerging collaboration platform** for Co-Creation in Public Service Delivery
- **Improving empowerment and engagement** of citizens for Public Service Co-Creation
- **Efficient collection of feedback** to continuously improve governance of Public Service Co-Creation
- **Increasing Trust of Citizens** through transparency and feedback of their contributions
- **Improving impact prediction** of policy measures
- **Strengthening competitive position** of European Industry and EU added value
- **Improved Public Service design & delivery**



QUESTIONS?

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