eGovernment Use Case

Application of SLA@SOI Framework to human based services

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eGovernment: Business Motivations

SLAs in Public Administration (PA) Services

• PA has to guarantee QoS to citizens

National and central regulations impose a certain level of quality to be provided to citizens.

• PA requires QoS from 3rd parties

The number of service outsourced to third party providers continuously grows, so more control is needed.
Current limitations

- **SLAs limited to single services**
  
  Often citizens use more services at the same time, but no SLA regulates the aggregated service.

- **Poor automation & standard support for monitoring, reporting, resource management, negotiation.**
eGovernment: Scenarios

Current Situation

Public Services for Health Care and Mobility
Integrated Service Mobility / Treatment

- Treatment prescription
  - Citizen contact
  - Treatment booking
  - Mobility booking

- Booking
- Provisioning
  - Treatment provisioning
  - Mobility provisioning
- Evaluation
  - Treatment feedback
  - Mobility feedback

Evaluation result
eGovernment: Scenarios

Involved SLAs

- Governance
- SLA
- Health + Mobility Service
- Mobility Service
- Health Treatment Service
- Booking Service
- Internal answering machines and human operators
- Citizen Unique Contact Point
- Call Center Providers
- Mobility Service Providers
- Health Care Structures
eGovernment: Scenario 1

Monitoring

Citizen Service Center

- Internal answering machines and human operators

Health + Mobility Service

- Monitoring

Health Treatment Service

- Treatment booking
- Medical Treatment

Booking Service

- Monitoring

Health Care Structures

- Call Center Providers

Mobility Service

- Mobility booking
- Mobility Service Providers

Citizen Unique Contact Point

SLA

Governance

reporting
eGovernment: Scenario2

Dynamic Binding

Governance

SLA

Health + Mobility Service

Health Treatment Service

Mobility Service

SLA based selection

Citizen Unique Contact Point

Call Center Providers

Internal answering machines and human operators

Citizen Service Center

SLA based selection

Health Care Structures

SLA based selection

Booking Service

SLA based selection

Medical Treatment

Treatment booking

Health Care Structures

Booking Service

SLA based selection

SLA based selection

SLA based selection

SLA based selection

SLA based selection

SLA based selection

SLA based selection

SLA based selection
eGovernment: Scenario3

Negotiation & Adjustment

Governance

SLA

negotiation

SLA

Health + Mobility Service

Mobility Service

Mobility booking

Mobility Service Providers

Citizen Unique Contact Point

Citizen Service Center

Booking Service

Internal answering machines and human operators

Health Treatment Service

Health Care Structures

Treatment booking

Medical Treatment

SLA

Call Center Providers

Providers

Health + Mobility Service

SLA
eGovernment: Framework Adoption

**Configured**
- Call Center Prediction Model
  - Customer
  - Business Manager
  - SLA Manager
  - Software Manager
  - Service Manager
- Human Resource Management & 3rd Party Config
  - SLA Manager
  - Business SLAM
- Custom
  - Human Resources SM
  - Service Evaluation
  - HR Evaluation
  - Software SM
- SLA@SOI
  - Framework
  - Dynamic BPEL Engine

**Custom**
- sensors are installed at providers
  - Call Center
  - Health Treatment
  - Service Orchestration

**Custom**
- negotiation protocol

**Custom**
- adjustment strategy

**3rd Party Call Center Provider**

**SLA@SOI**
- Extended Active BPEL
eGovernment: Framework Adoption

Adopted Features

- **SLA definition**: Formal syntax of SLA and SLA template;
- **Service Design**: static prediction of (QoS) performance
- **Service Offering**: Discovery of appropriate service; bundling into products;
- **Service Negotiation**: Negotiation of price & capabilities; hierarchical negotiation for composed services; manual SLA registration.
- **Service Provisioning**: Provisioning of services and monitoring; dynamic BPEL binding; provisioning coordination
- **Servicer Monitoring & Reporting**: Monitoring; runtime prediction; SLA violations and warnings; notifications and reports.
- **SLA Enforcement**: automatic BPEL binding; changing subservice provider; renegotiation; penalties and bonuses.
- **Framework deployment and management**: Reusable modules; extendibility; customization;
### eGovernment: Evaluation indicators

- Baseline assessed by reported experience and educated guesses

<table>
<thead>
<tr>
<th>Actor</th>
<th>Objective</th>
<th>Indicator</th>
<th>Baseline</th>
<th>New</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citizen</td>
<td>User Preference Matching</td>
<td>Average number of calls a user needs to complete a mobility reservation</td>
<td>2 calls</td>
<td>1</td>
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<tr>
<td>Integrated offer of services</td>
<td></td>
<td>Average duration of the booking operation for the combined service health + mobility</td>
<td>360 sec</td>
<td>300 sec</td>
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<tr>
<td>Governance &amp; Citizen Service Center</td>
<td>SLA compliance and performance awareness</td>
<td>Average number of SLA violations in 1 month</td>
<td>7</td>
<td>4</td>
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<tr>
<td>Citizen Service Center</td>
<td>SLA compliance and performance awareness</td>
<td>Average number of warnings of probable SLA violations predicted in 1 month</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Resources allocation efficiency and optimization</td>
<td>Average percentage of busy resources in 1 month</td>
<td>0,7</td>
<td>0,85</td>
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<tr>
<td></td>
<td></td>
<td>Average percentage of idle operators in 1 month</td>
<td>0,3</td>
<td>0,15</td>
</tr>
</tbody>
</table>
Thank you!