X-Gov
a framework for crossmedia government services
Lucia Filgueiras, Flavio Miyamaru, Leonardo Leite, Mauricio Cirelli
Agenda

• Objective of the research
• Progress made on the project until today
• Technologies and platforms employed
• Detours
• Next steps for this research
“... this research project intends to define a framework for developing crossmedia government services...”

(from the X-Gov project workstatement document)
PRECURSORS
<table>
<thead>
<tr>
<th>Percentage (%)</th>
<th>Television/Satellite Dish</th>
<th>Paid TV</th>
<th>Landline Phone</th>
<th>Mobile Phone</th>
<th>Computers</th>
<th>Internet access</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL</td>
<td>97</td>
<td>20</td>
<td>6</td>
<td>36</td>
<td>72</td>
<td>25</td>
</tr>
<tr>
<td>Social class</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>100</td>
<td>33</td>
<td>53</td>
<td>90</td>
<td>97</td>
<td>95</td>
</tr>
<tr>
<td>B</td>
<td>100</td>
<td>27</td>
<td>19</td>
<td>75</td>
<td>94</td>
<td>70</td>
</tr>
<tr>
<td>C</td>
<td>99</td>
<td>20</td>
<td>5</td>
<td>40</td>
<td>81</td>
<td>25</td>
</tr>
<tr>
<td>DE</td>
<td>92</td>
<td>18</td>
<td>1</td>
<td>13</td>
<td>51</td>
<td>3</td>
</tr>
</tbody>
</table>

Fonte (Source): NIC.br - set/nov (sep/nov) 2008
Is the desktop computer the right choice for e-gov interaction?
Crossmedia is the **orchestration** of different media and devices to deliver a story, in which each media contributes with its strengths.
Crossmedia ≠ Convergence
Ecology of devices
Multimodality

Photo by Jill Clardy: http://www.flickr.com/photos/jillclardy/
X-gov is defined as the delivery of public services across multiple media, in which G2C communication is supported by several media alternatives, each one directing the citizen to the next step in the interaction process and to the most suitable media for that step.
Benefits x Challenges
Research and development process

- Collection of open questions
- SWOT analysis
- X-Gov framework development
- Spot freezing
- POC evaluation
- Choice of questions
PHASE 1: SERVICES AS NARRATIVES
Crossmedia planning for government services

• What is the best combination of media to deploy a government service?

Danilo Correa, Master Dissertation (in progress, qualified)

1st POC: understanding e-gov services as narratives

Service for enrolling children in a school

Contributions:
- Choice of technologies
- Requirements for service definition tool

PHASE 2. DOMAIN ANALYSIS
E-government domain analysis: task patterns list

<table>
<thead>
<tr>
<th>Information</th>
<th>Document</th>
<th>Transaction</th>
<th>Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obtain pre-service information</td>
<td>Get digitally certified document</td>
<td>Authentication</td>
<td>Talk to the ombudsman</td>
</tr>
<tr>
<td>Submit information to government</td>
<td>Create an invoice</td>
<td>Get track id</td>
<td>Receive a message</td>
</tr>
<tr>
<td>Submit personal information</td>
<td>Verify document validity</td>
<td>Pay fee/tax</td>
<td>Track a process</td>
</tr>
<tr>
<td>Find public information</td>
<td>Print document</td>
<td>Schedule</td>
<td></td>
</tr>
<tr>
<td>Find information about entity</td>
<td>Save as file</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Find private information</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

User studies

Time-space: the act of looking for complementary information may not be immediate

Memory: users keep the context in their minds

User engagement: free to look for other sources

Crossmedia domain

2\textsuperscript{nd}. POC: reusable components

- Task pattern implementation for DTV, web and mobile
- Crossmedia transitions

Watch on Youtube:

PHASE 3: ARCHITECTURE
Framework

Compatibility with Brazilian e-government framework

67% compatible
Content format
Security issues

PRETI, J.P.D; NUNES, E.P.S; FILGUEIRAS, L.V.L. Arquitetura crossmedia para integração de serviços de governo eletrônico; (submitted to Brazilian e-gov conference) 2010

Tools for service description

X-Builder

CroMeL

GWSFindPrivateInformation='http://143.107.102.15/govside/GWSFindPrivateInformation'
ExamsListComponentName='My Exams List'
service 'Exams Schedule' {
  ...
  task ExamsList of FindPrivateInfo {
    mobile(componentName=$ExamsListComponentName,
      authenticationCompId=&Authentication.mobile,
      uriCalled='mobExamList',
      instructionText='Select an exam: ',
      listName='Exams Requested',
      dataUrl=$GWSFindPrivateInformation,
      getFullEntitiesListWebMethod='GWSGetPermittedExams',
      getEntityInformationWebMethod='GWSGetExamInformation' 
  }
  tv(componentName=$ExamsListComponentName,
      entityType='Exam',
      compAuthId=&Authentication.tv,
      compAuthId=&BasicInfoAboutSchedule.tv,
      uriCalled='tvExamList',
      dataUrl=$GWSFindPrivateInformation,
      getFullEntitiesListWebMethod='GWSGetPermittedExams',
      getEntityInformationWebMethod='GWSGetExamInformation' 
  }
  ...
}
Crossmedia transitions
Crossmedia transition mechanisms

Call to action  Synchronization
Need of engagement  Scheduling
Data transportation  Privacy

Flavio Miyamaru, Master Dissertation

MIYAMARU, F.; FILGUEIRAS, L. (submitted to a journal), 2010
Framework for crossmedia transitions

• Seamless push transitions
• Integration of transitions from voice portals, mobile, web and DTV
• X-Session
  – Data exchange between media
  – Navigation control & feedback
  – Navigation monitoring
• X-User
User testing

- Prototypes
- Observation of scenario simulation
- Structured interview

- Perception of usefulness and time saving
- Appropriation of technology is still needed
TECHNOLOGIES & PLATFORMS
Technologies & Platforms

- **Platforms**: framework .NET 3.5; SQL Server 2005.
- **Services architecture**: RESTful (JSON) and SOAP WebServices on .NET 3.5
- **Crossmedia framework**: C#; MSN Live services; Tribox/Asterisk Voice Platforms; Ginga-NCL; HAVI.
- **Mobile components**: C#; ASP.NET MVC; jQuery Javascript Library; DeviceAtlas API; Windows Mobile 6 SDK; Nokia Device Emulator.
- **DTV components**: Java; Ginga-NCL; HAVI; XleTView.
- **CroMeL**: ANTLRv3; ANTLRWorks: ANTLR GUI Development Environment; IronRuby 0.6 on .NET Dynamic Language Runtime; GraphViz
- **X-Builder**: Java, GMF of Eclipse Galileu; Acceleo.
- **IDEs and administrative tools**: MS Sharepoint, SubVersion, MS Project; Eclipse IDE; VMWare
DETOURS?
Requirements, instead of a real client
Usability tests with a real x-gov service
On-going research

Joao Soares de Oliveira Neto
Doctoral Thesis on crossmedia production processes
(in progress, qualified)

Joao Paulo Delgado Preti
Doctoral research on crossmedia e-democracy
(in progress)
Thank you!

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