Communication With Citizens in the First EU Citizen Observatories Experiences

ECGD – 17th European Conference on Digital Government

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The concept
Citizen Observatories 101

+ Citizen Observatories (COs) are essentially citizen-enabled observatories of the environment and natural resources through the use of information and communication technologies (ICT);

+ It implies:

  • i) the existence of a somehow open and shared information system, for the collection of data on the environment and natural resources, using ICT;
  • ii) the volunteer participation and involvement of individuals in data collection.

+ EU adopted a more specific concept, relating it directly to earth observation systems (the Copernicus satellite program, in the European case).
The concept
Some background and related concepts

+ Community-Based Environmental Monitoring (CBM), developing around 2000;

+ Later, with Volunteered Geographic information (VGI), allowing private individuals to participate directly in the collection of geographic information, using equipment and sensors (as opposed to a task carried exclusively by public agencies).
The concept
Meaning

+ But this means…

???
The concept
*Personae*
The concept
EU rationale

+ Copernicus satellite program

+ In situ components

+ “in-situ monitoring systems are very costly and Citizens Observatories have the potential of providing complementary information by thousands of mobile sensors at a much lower cost” (European Commission, 2014: 11).

First EU experiences
Pilot projects, 2012 - 2016

+ 4 EU pilot projects, held between 2012 and 2016:

- Citclops (Citizens' Observatory for Coast and Ocean Optical Monitoring), led by the Barcelona Digital Technology Centre;
- Omniscientis (Odour MoNitoring and Information System based on CITizens EN and Technology Innovative Sensors), led by Spacebel;
- CITI-SENSE (dedicated to outdoor air quality monitoring), led by NILU - The Norwegian Institute for Air Research;
- WeSenseIt (dedicated to water level and flood monitoring), led by The University of Sheffield;
- COBWEB (Citizen OBservatory WEB), led by EDINA (University of Edinburgh).
# First experiences

## Communication and information flows

<table>
<thead>
<tr>
<th>Service</th>
<th>Objective evaluation</th>
<th>Subjective evaluation</th>
<th>Collection of information (input)</th>
<th>Dissemination of information (output)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citclos</td>
<td>Yes</td>
<td>Yes</td>
<td>Website -</td>
<td>Yes</td>
</tr>
<tr>
<td>(Natural waters monitoring)</td>
<td>(Water colour: Automatic FI index)</td>
<td>(Water colour: Subjective FI index)</td>
<td>Android app: Yes EyeOnWater</td>
<td>IOS app: Yes EyeOnWater</td>
</tr>
<tr>
<td>OMNISCIENTIS</td>
<td>-</td>
<td>Yes</td>
<td>Yes (FR) OdoMap</td>
<td>Yes, limited</td>
</tr>
<tr>
<td>(Odour monitoring)</td>
<td>(Centralized: &quot;electronic noses&quot; in selected facilities)</td>
<td></td>
<td>OdoMap</td>
<td>(Registered users only, history of own subjective observations)</td>
</tr>
<tr>
<td>CITI-SENSE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes Online air quality perception questionnaire</td>
<td>Yes (Objective and subjective)</td>
</tr>
<tr>
<td>(Air quality monitoring)</td>
<td>(Personal Air Monitoring Toolkit - PAMT)</td>
<td></td>
<td>Online air quality perception questionnaire (&quot;Extensive&quot; questionnaire)</td>
<td>(Subjective: CityAir)</td>
</tr>
<tr>
<td>WeSenseIt</td>
<td>Yes</td>
<td>-</td>
<td>-</td>
<td>Yes WeSenseIt Italia and WeSenseIt UK</td>
</tr>
<tr>
<td>(Flood risk management)</td>
<td>(Sensor observations and human observations)</td>
<td></td>
<td>-</td>
<td>(&quot;Share information about&quot; and &quot;Sensors&quot; options, on menu)</td>
</tr>
<tr>
<td>COBWEB</td>
<td>Depending on survey</td>
<td>Depending on survey</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>
First experiences
Some insights

+ As we can confirm through the table, all COs imply the observation of objective variables by citizens (with the exception of OMNISCIENTIS, dedicated to odour nuisance, where objective measurements are managed centrally)…

+ … and all COs dedicated to monitoring activities (Citclops, OMNISCIENTIS and CITI-SENSE) involve evaluation of perceptions by users.
First experiences
Some insights

+ All-inclusive communication strategies vs more focused communication strategies

+ WeSenseIt adopts a rather specialized and focused strategy, heavily based on mobile apps, since no CO information is collected or shared through the website: the only way to collect and disseminate information is through a mobile app (Android, in this case);

+ CITI-SENSE, has a rather all-inclusive strategy, using the website, Android and IOS apps, both to collect and disseminate information.
### First experiences

**Citizen envolvement**

<table>
<thead>
<tr>
<th>Product</th>
<th>Android app (Downloads)</th>
<th>Facebook (Page likes)</th>
<th>Twitter (Followers)</th>
<th>YouTube (Likes)</th>
<th>Slideshare (Followers)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citclops</td>
<td>500 or +</td>
<td>79</td>
<td>195</td>
<td>67</td>
<td>-</td>
</tr>
<tr>
<td>OMNISCIENTIS</td>
<td>10 or +</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>CITI-SENSE</td>
<td>500 or +</td>
<td>344</td>
<td>92</td>
<td>56</td>
<td>163,6</td>
</tr>
<tr>
<td>CITI-SENSE (Barcelona)</td>
<td>-</td>
<td>100</td>
<td>454</td>
<td>966</td>
<td>69</td>
</tr>
<tr>
<td>CITI-SENSE (Belgrad)</td>
<td>-</td>
<td>40</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>CITI-SENSE (Ljubljana)</td>
<td>-</td>
<td>116</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>CITI-SENSE (Oslo)</td>
<td>-</td>
<td>152</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>CITI-SENSE (Ostrava)</td>
<td>-</td>
<td>52</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>WeSenseIt</td>
<td>UK: 50 or +</td>
<td>72</td>
<td>264</td>
<td>6</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>IT: 100 or +</td>
<td></td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>COBWEB</td>
<td>NA</td>
<td>-</td>
<td>373</td>
<td>403</td>
<td>184,8</td>
</tr>
</tbody>
</table>

Values as of July 30, 2016. No publicly available information on ICS apps number of downloads was found. NA: not available (download exclusively through website).

Table 2. Android app downloads and SNS usage by European COs, 2012-2016
First experiences
Citizen envolvement

+ Although 4 of the 5 projects made extensive use of SNS, it cannot yet be considered that COs reach a vast number of citizens;

+ Considering these are multi-annual projects with large consortiums and multi-million budgets, aiming to demonstrate the concept and contributing to its dissemination, these numbers still show a very limited impact;

+ One possible reason for this might be that these first generation projects were still very concerned with technical challenges;

+ But societal challenges will probably assume a more relevant role in the following stages.
First experiences
Assessment

+ We propose to consider three dimensions, when discussing the potential drivers for reach and citizen engagement in CO projects:

  • The return the project offers to its potential users. An air quality monitoring CO, for instance, will probably offer a more relevant return to a citizen suffering from allergies, asthma or other breathing problems, than to a citizen with no breathing problems;

  • Relevance of barriers to engagement;

  • Public awareness of the project.
The next generation of COs to be developed between 2016 and 2020 with European funding represents an opportunity to tackle these issues.

The 4 new COs will represent a total investment of around 20 million euros, and have already been announced: GROW, coordinated by the University of Dundee (UK); LANDSENSE, coordinated by IIASA, the International Institute for Applied Systems Analysis (Austria); SCENT, coordinated by the National Technical University of Athens (Greece) and Ground Truth 2.0, coordinated by UNESCO-IHE Institute for Water Education (Netherlands).
Seizing the opportunities

+ Taking advantage of the opportunities arising from the development of Citizen Observatories can be done in several ways:

- Take advantage of the first European funded COs;
- Follow the implementation of the next generation of EU funded COs, in the 2016-2020 period;
- Get in touch with the vast community of experiences that relate to this area (including CBM and MCS);
- Following or contacting directly the European Commission Executive Agency managing CO projects: EASME - Executive Agency for Small and Medium-sized Enterprise.
Seizing the opportunities

+ In a few years from now we can look at citizen observatories and contemplate a flourishing area…

+ … Or we can see it as an obsolete concept, as so many others in ICT, and look back at our efforts to develop and demonstrate the concept as rather naïve.

+ We believe this depends largely on the way we are able to involve, besides the European Commission and the academic community (already working in the concept demonstration), also government and public administrations, as well as citizens, grassroot movements, associations and NGOs.
Thank you!

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