Smart cities and communities: standardisation to meet citizen and consumer requirements

Presentation of the Stakeholder Survey

Presented by: Emmanuel Darmois For: STF 561 Awareness Meeting #1

16.05.2019
Outline

The survey

Understanding requirements

The perceived role and place of standards

Measuring Smart Cities Strategies

Preliminary conclusions
The survey
The Survey

Objectives
✓ Cover diverse views
✓ Involve all interested stakeholders
✓ Identify major requirements
✓ Early outline the place of standards

Answers
✓ 35 answers
  ✓ 100% answered fully
  ✓ Well informed
✓ Diversity of points of views
✓ Citizens well represented
Understanding requirements
Most important issues to help citizens

Top 3 (rank 1)
- CAPEX
- RoI
- Time-to-Market

Top 3 (ranks 1-3)
- RoI
- CAPEX
- Regulation

Less important
- OPEX
- Business agility

Ranked from highest (1) to lowest (6)
Other priorities to consider

General requirements
- Accessibility of the services
- Contribution of smart communities to social cohesion.
- Reduce complexity of citizens' lives
- Prevention and safety
  - Illness danger, air pollution, etc.
  - Changes in mobility (automated cars, etc.)
- Facilitating positive carers experiences.

Citizens involvement
- Design / accessibility of devices that enable citizens to access / use smart services;
- Teaching citizens how to use the technologies
  - Support learning / digital literacy / citizenship for all;

Solutions design
- Co-design of valued based solutions
- Ease of use of devices
- Opportunities for community sources solutions to be taken just as serious as multinational commercial entities proposal
- Inclusive design, transparency,

Infrastructure
- Integration in current and future infrastructure
- Access to Internet.
  - A smart city should provide it freely or at reduced fee. Otherwise, less-favoured citizens miss the boat
The perceived place and role of standards
Involvement in smart city standardisation

- **Involved in smart city standardisation?**
  - Yes: 31%
  - No: 69%

- **Aware of current smart city standardization efforts?**
  - Yes: 31%
  - No: 29%
  - Skip: 40%

- **If not involved, use applicable standards from other domains?**
  - Yes: 9%
  - No: 20%
  - Skip: 71%

**Standards cited**
- ISO/IEC TS 20071-21, 23, 11; TS 30071-1
- ISO 10002, Complaints handling
- ISO 26000, Guidance on corporate social responsibility
- Open data standards
What standards issues need to be considered in the citizen context?

Top keywords: users, privacy, data

**User**
- User experience
- The human interface and usability of smart cities services. The communication language used by public services is often written from a public servant vision, not from a citizen's vision, who does not understand "administrative language"
- To take care of the role of users and of the quality of the services
- Success in smart cities services is only there when you use "plain language"
- Easy access, user-friendly. Developed in co-creation only!
- Transparency, signage, guidance and Information, usability, Access for all
- CITIZENS PARTICIPATION IN LOCAL PLANNING
- That no one is left behind (elderly people vs online admin)
- Take into account people's needs
- service accessibility

**TLC, ICT**
- Those that are fundamental to health, wellbeing, security, inclusion and sustainability. They must relate to the design (and ethos) of products and services. Matters relating to the meaning of (and promotion of) good citizenship also need addressing ... but not in a nanny state 'we know what's good for you' kind of way!
- Tax reduction
- QoE
- Methodology to allow coordination and cooperation for building Smart Cities

**Privacy, data**
- Accessibility/Design for All, Data protection and privacy
- Security/privacy
- Privacy and opt out capabilities for individuals.
- Privacy, personal data security, accessibility
- Access to services, physical and cyber security, privacy, consumer redress
- Easy access, understandable language, ethically responsible services and respect for privacy
- Data protection and privacy considerations
- Data quality and transparency
- Data standards, for exchange, versatility in services, export
- Data management, Governance
- Mydata, how citizen can share MyData in safe and regulated way.
- Ensuring data collected related to a citizen is transferable as that citizen moves between cities, as well as ensuring that cities can easily deploy services developed in other cities that benefit their citizens

**Service level standards**
- The presence of 3 different international standards bodies, whose standards are endorsed and required by the World Trade Organisation; ISO, IEC and ITU-T:
- inter-operability and cultural relevance
- Monitoring of sustainability efficiency; Access & feedback on smart communities information
- Large scale communication with end users is a huge issue in order to reach out to the majority of citizens, not only already engaged ones.
Are you involved in standards for any of the following services?

Top three: health, telecommunications, transport

<table>
<thead>
<tr>
<th>Service</th>
<th>Yes</th>
<th>No</th>
<th>Partially</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial management and economic growth</td>
<td>11%</td>
<td>66%</td>
<td>23%</td>
</tr>
<tr>
<td>Environmental services</td>
<td>20%</td>
<td>66%</td>
<td>14%</td>
</tr>
<tr>
<td>Housing</td>
<td>17%</td>
<td>66%</td>
<td>17%</td>
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<tr>
<td>Social Services</td>
<td>14%</td>
<td>57%</td>
<td>29%</td>
</tr>
<tr>
<td>Health</td>
<td>31%</td>
<td>49%</td>
<td>20%</td>
</tr>
<tr>
<td>Transport</td>
<td>23%</td>
<td>66%</td>
<td>11%</td>
</tr>
<tr>
<td>Education and training</td>
<td>20%</td>
<td>51%</td>
<td>29%</td>
</tr>
<tr>
<td>Emergency service provision</td>
<td>17%</td>
<td>69%</td>
<td>14%</td>
</tr>
<tr>
<td>Policing</td>
<td>11%</td>
<td>71%</td>
<td>17%</td>
</tr>
<tr>
<td>Telecommunications</td>
<td>26%</td>
<td>43%</td>
<td>31%</td>
</tr>
<tr>
<td>Waste</td>
<td>20%</td>
<td>71%</td>
<td>9%</td>
</tr>
<tr>
<td>Water</td>
<td>17%</td>
<td>77%</td>
<td>6%</td>
</tr>
<tr>
<td>Energy</td>
<td>17%</td>
<td>77%</td>
<td>6%</td>
</tr>
</tbody>
</table>

Do you know whether citizen requirements have been considered specifically?

- Yes: 74%
- No: 26%

If yes, how have they been dealt with?
- Citizen participation in service development
- Expert advice engaged
- Citizen survey
- Citizen consultation
- Other

Others:
- Rural communities involvement
- (not clear question)
Known smart city standard usage for citizens

Standards cited

- Smart Cities Reference Architecture
- Smart Cities Reference Architecture Methodology
- ETSI TS 103 463 Series
- ETSI TS 305 174 Series
- ETSI TS 305 200 Series
- ETSI TS 110 174 Series

Landscape not well known (very small number of answers)
Accessibility is a key requirement

- Handled generically
- With very few standards cited

Standards cited:
- ISO/IEC TS 24786, 20071-31
- ITU-T FSTP-AM, FSTP.ACC-RemPart
- ITU-T F.791
- Web Content Accessibility Guidelines
- AAL

Other requirements to consider:
- WACAG 2.0
Smart city strategies
How will citizens communicate with their local authorities in future smart communities?

- Mobile access to all services: 94%
- Online access to all services: 77%
- Call centre with dedicated/knowledgeable staff: 66%
- Physical dedicated building: 46%
- Other (please specify): 23%

Other:
- Multilanguage multimodal chatbot
- Kiosks in areas that the citizens already are, with trained staff to support their use (transit stations, rec centers, libraries)
- Via postal services
- Voice assistant
- It will be needed to maintain physical contacts
- Encrypted email and protected privacy
- You cannot do everything online. You must still be able to speak to somebody with "knowledge". Otherwise, you run into a wall
- Have community based non-governmental volunteer organizations
Measuring service improvement

- More services are delivered following the citizens' needs.
- More bottom-up initiatives are taken into account.
- Because when you involve the end-users everything improves.
- We are working in European projects, and we can see that some projects start dealing with this issue from papers, media.
- Monitoring of Global & Technical KPIs.
- From various reports, e.g., SMART CITIES: DIGITAL SOLUTIONS FOR A MORE LIVABLE FUTURE by McKinsey.

How do you know outcomes for city services are improving?

- By measuring KPIs for each service, and consulting with citizens impacted by those services.
- Outcome from transport reduce travel time.
- Global satisfaction from citizens/users + rise of users pool for these services.
- If their uses are increased.
- Citizen surveys.
- Input from own city.

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Using standards to measure improvement of smart community outcomes

**Examples**
- Prague ... Framework established that is exploring key measures
- Manchester
- ISO/FDIS 37122 Sustainable cities and communities -- Indicators for smart cities
- CITYkeys project (ETSI TS 103 463)
- Rotterdam dashboard
- Improvement by Increases for People, Planet, and Prosperity
- Improvement by Reductions for People, Planet, and Prosperity
- 72 Technical KPIs on People, Planet, and Prosperity
Some preliminary conclusions
What additional topics does our team need to examine

Other:
- User's roles and capacity to be involved in the process
- Common methodology
- Smart City ranking
- Smart City monitoring by global/technical KPIs for auto-certification
- (suggest we do not call them Smart Cities)
Considerations for further work

A solid initial set of findings, unknowns and questions

The requirements

✓ Major points of notice: CAPEX, RoI and Regulation
✓ But a lot of priorities identified:
  ✓ General requirements, citizen involvement, solution shaping, infrastructure
  ✓ Accessibility is considered as a major one

The role and place of standards will be significant

✓ Top keywords: users, privacy, data
✓ Smart city standards landscape not well known (and very few references)

A number of key topics will be addressed

✓ Based on the team preliminary analysis: Smart city guidance material, codes of practice, regulation
✓ Based on the survey feedback: methodologies, KPIs

Your input to the next steps of the work will be key

✓ The survey is still open and can bring us more insights
✓ Another “awareness meeting” will take place in September
Thank you for your attention!

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