



Learning from the Crowd: The Role of Volunteered Geographic Information in Realising a Spatially Enabled Society

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Research project: Background

**Whole-of-Society
Producers** | **Users**

Spatial Data Infrastructures

Spatially
Enabled
Society
(SES)

?



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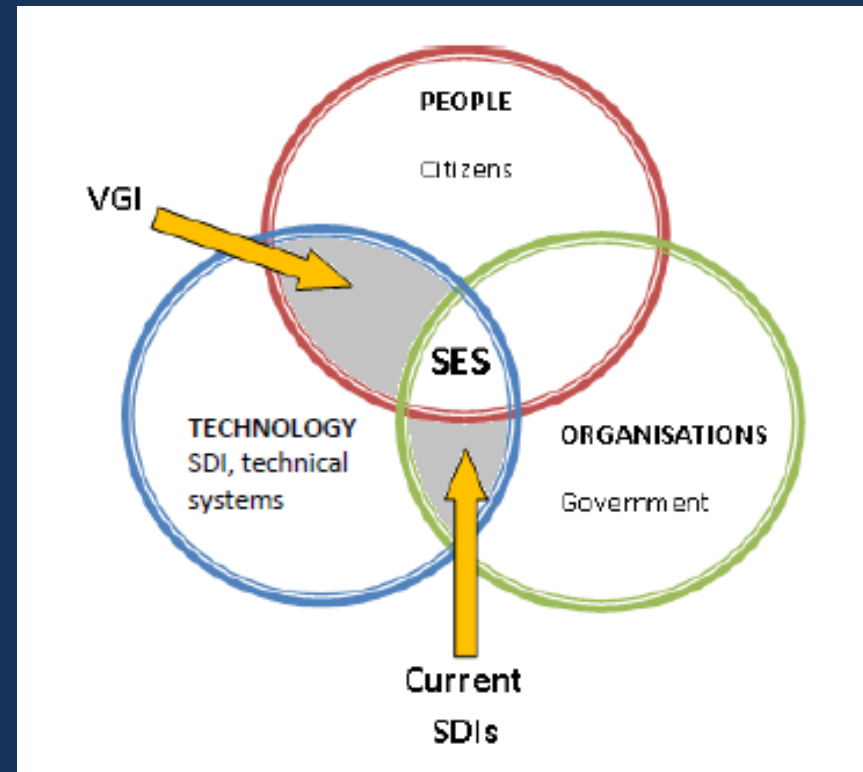
People and VGI: A role for society?

People:

- ▶ Local knowledge
- ▶ Bottom-up approach
- ▶ Local engagement key component in decision-making in democracies

VGI:

- ▶ Practice of observing, collecting and producing GI by people with no formal expertise in the area
- ▶ Taps into 'long tail' of web
- ▶ Facilitate citizen participation



*A vision for SES and the role for VGI
(adapted from Rajabifard, 2009a).*

Research predicated on VGI being a role for society.



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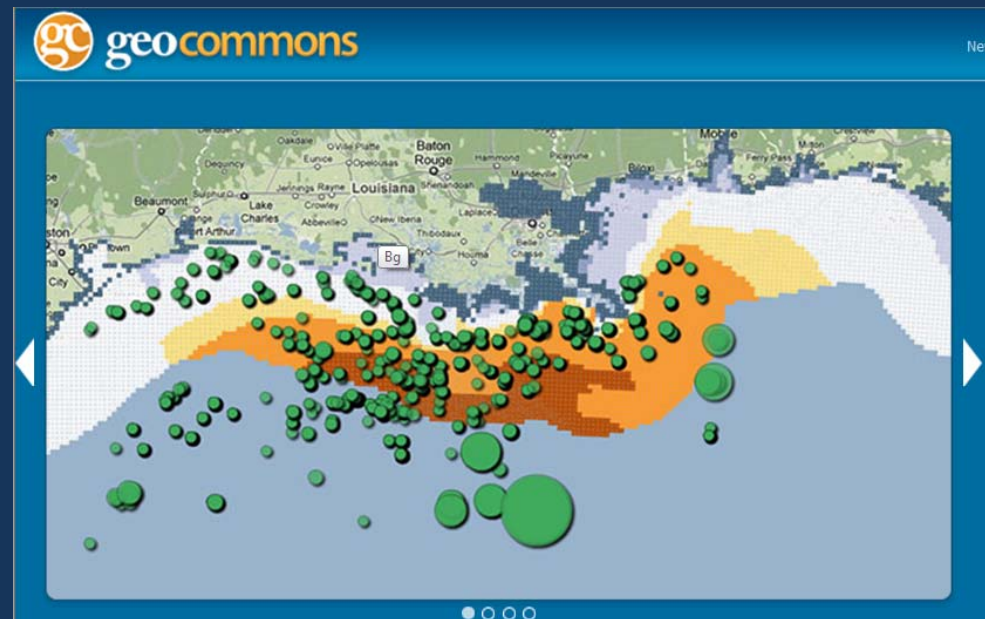
Research aim and questions

Aim:

Determine the feasibility of incorporating VGI into the SDI as a way of moving towards a more inclusive SDI model

Questions:

- 1 Can VGI play a tangible role in engaging society?
- 2 Can VGI be facilitated through the use of an enabling platform? What will this look like?



Geocommons, a platform for VGI



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Research methodology

1 Literature review

- Issues and challenges in engaging with VGI

2 Case studies

- BBC Berkshire flood map
- OpenStreetMap
- NSIDC Google Earth climate change tour

3 Comparative analysis

- 9C framework

4 Conceptual framework

- VGI enabling platform

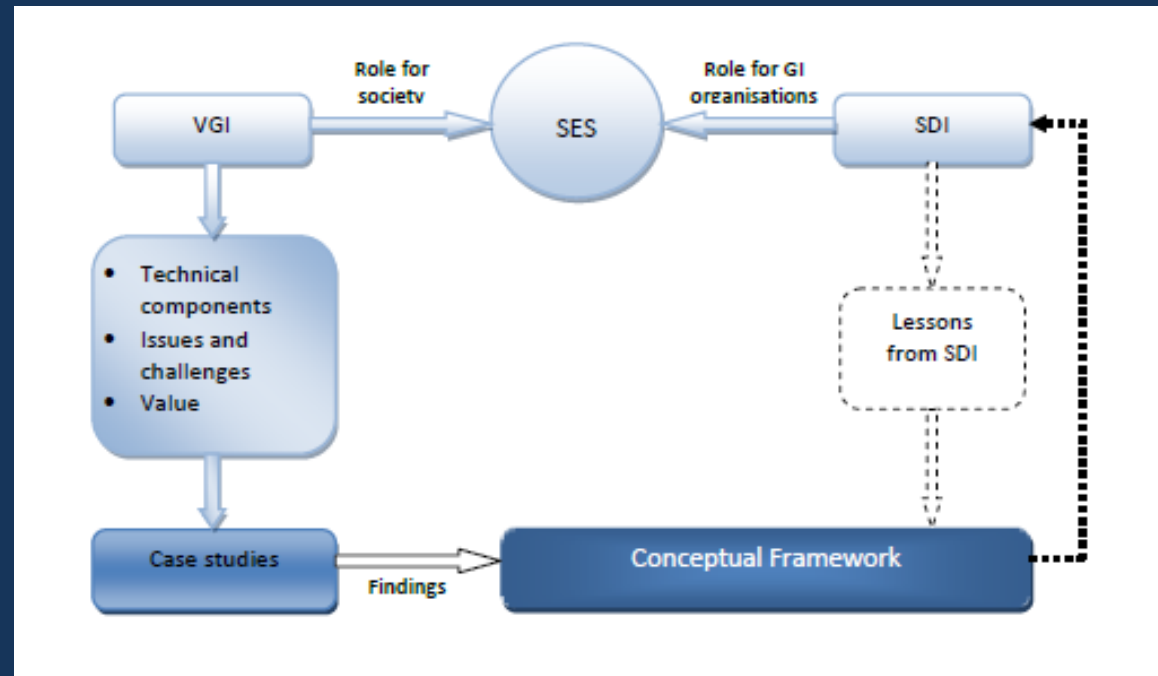


Diagram of research methodology



Research methodology: 9C framework

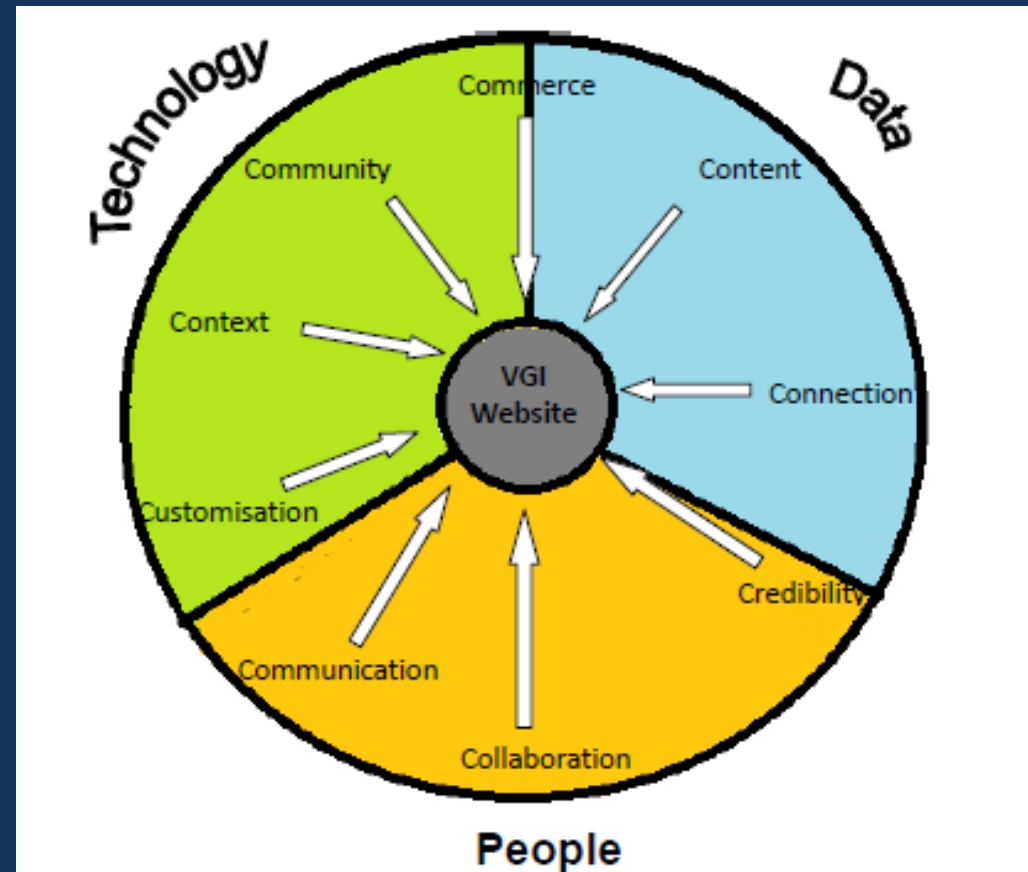
9C Framework

- 8C framework used to analyse Web 2.0 interfaces (Yang et al, 2008)

- 8C framework:

- context
- content
- community
- customisation
- connection
- collaboration
- commerce

- 8C model does not account for **credibility**, necessary for UGC.

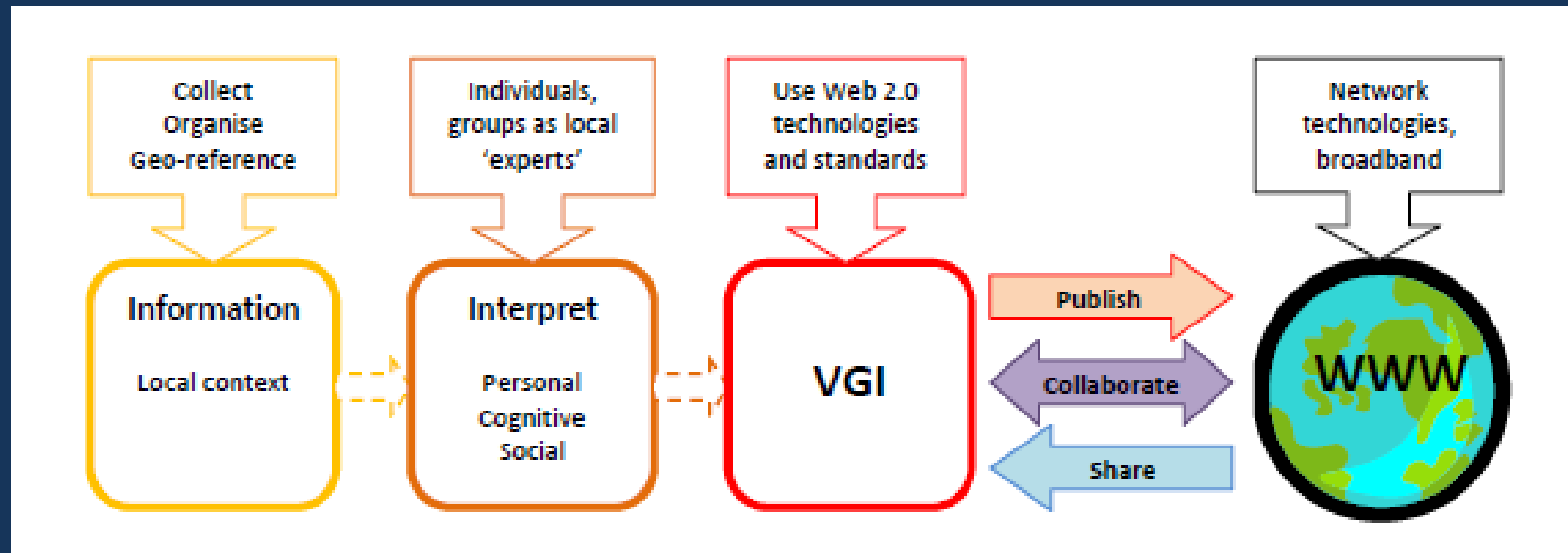


Elements of the 9C framework and how they relate to technology, data and people



Research outcomes: VGI

- Processes involved with producing VGI
- VGI key technological enablers: wikis, geospatial browsers, mashups
- Value of VGI: 2 primary functions (social or civic purpose)
 - ① value-add/augmentation
 - ② creation of new info around certain practices/events



Processes involved in producing VGI



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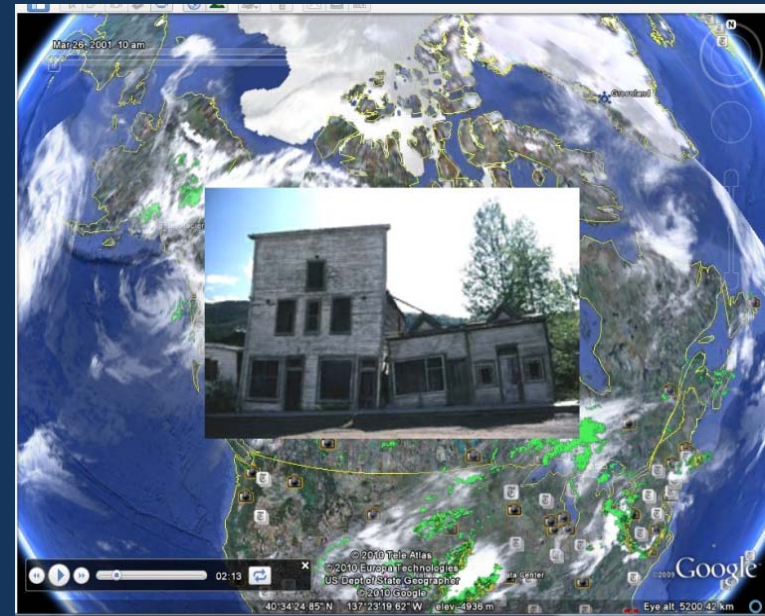
Research outcomes: VGI

Challenges/ Issues

- ▶ Social
- ▶ Technological
- ▶ Legal
- ▶ Institutional

3 types of VGI software:

- 1 users provide simple information
- 2 users provide technical content
- 3 users provide GI that they make available to others



*NSIDC Google Earth
Climate Change Tour*

Research outcomes: Case studies

Findings for an enabling platform:

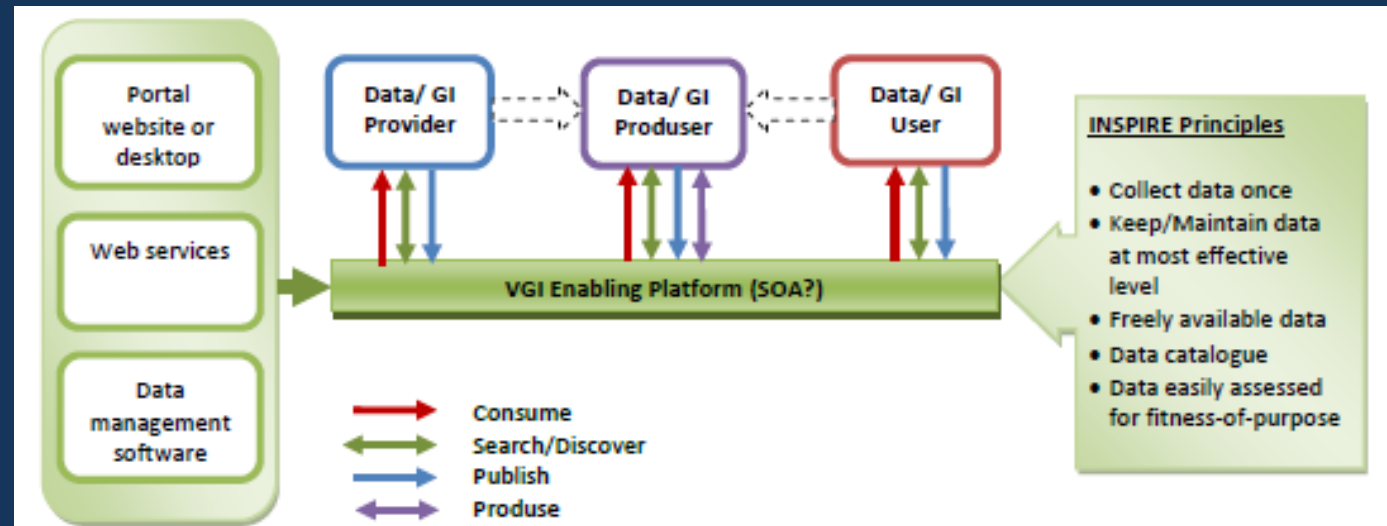
- Some elements of 9C framework not applicable to VGI
- Standards are important
- Software starting point for forming a community
- Collaboration facilitated by simple and straightforward interfaces
- Supporting documentation always immediately noticeable
- Licensing/protection of data
- Distinct characteristics of VGI will influence design – scale, specificity, source



Research outcomes: Conceptual framework

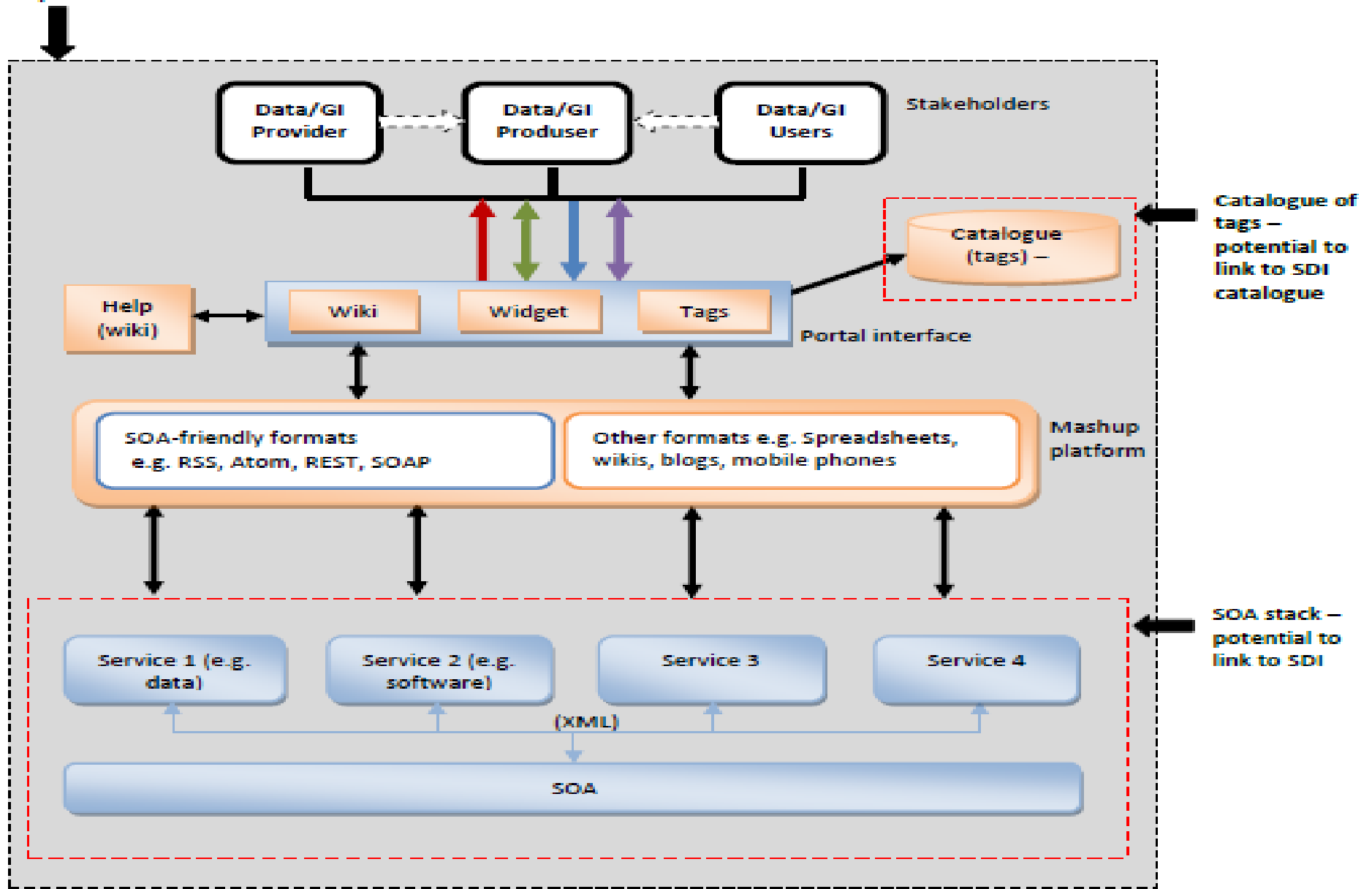
Factors from ICT/SDI practice:

- INSPIRE principles
- Service-oriented architecture (SOA)
- Access – desktop, web, etc
- Web 2.0 practices
- VGI practices



Moving towards the VGI conceptual model incorporating INSPIRE principles

Open Source License



- Red arrow: Consume
- Green double arrow: Search (HTTP)/ Return (XML)
- Blue arrow: Publish
- Orange box: VGI/Web 2.0 elements
- Blue box: SOA elements



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Future directions...future research?

http://www.nydailynews.com/lifestyle/health/2009/10/01/2009-10-01_children_who_eat_candy_and_chocolate_every_day_more_likely_to_be_violent_adults.html



Thanks for listening.

Questions?