



Dimensions and dynamics of citizen observatories: The case of online amateur weather networks

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EGU General Assembly 2016
17 – 22 April , Vienna, Austria



Different information about the environment can now be obtained from **non-traditional** sources such as **citizen scientists**.

Rapid diffusion of **ICTs** during past two decades has facilitated the process of data collection and sharing by the general public.

Amateur weather observations, using personal weather stations (PWSs) is one of the most widely practiced citizen science activities.



Source: <https://uofa.ualberta.ca/science/bawa-schindler>



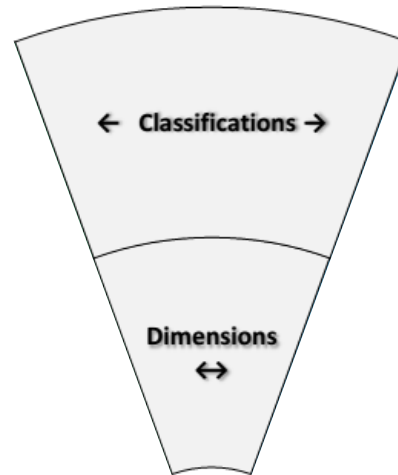
Source: <http://weatherstationexpert.com/>

Several online amateur weather networks aggregate and visualize citizen-contributed weather data

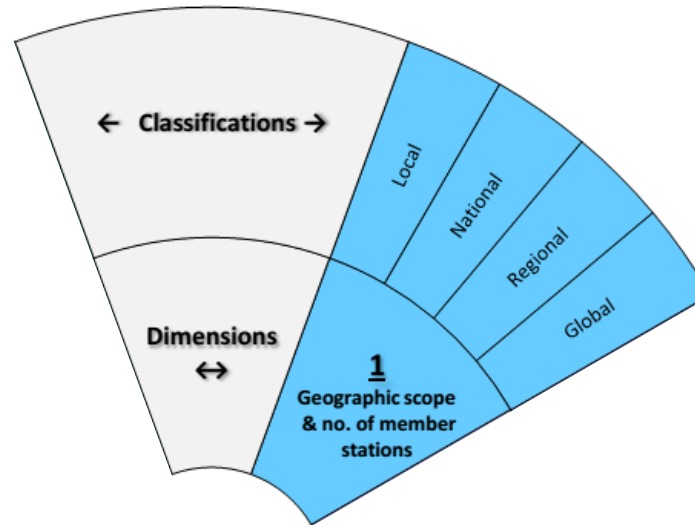


- *These initiatives are about **more than just data** ...*
- *An in-depth analysis of the networks will help understand various **dynamics such as**:*
 - *Interactions between different stakeholders*
 - *Motivations to run the networks*
 - *Sustainability of the networks*
 - *Data ownership*
 - *Level of transparency of each network*
- *Three critical questions regarding these networks:*
 - Who** is selected to participate?*
 - How** the network operates?*
 - What** is required, offered or produced by the network?*

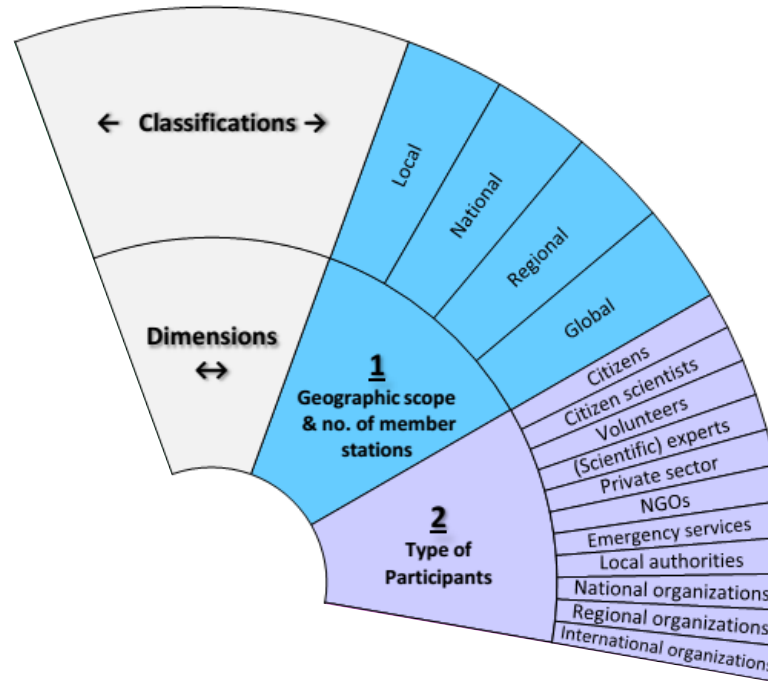
Framework for the research



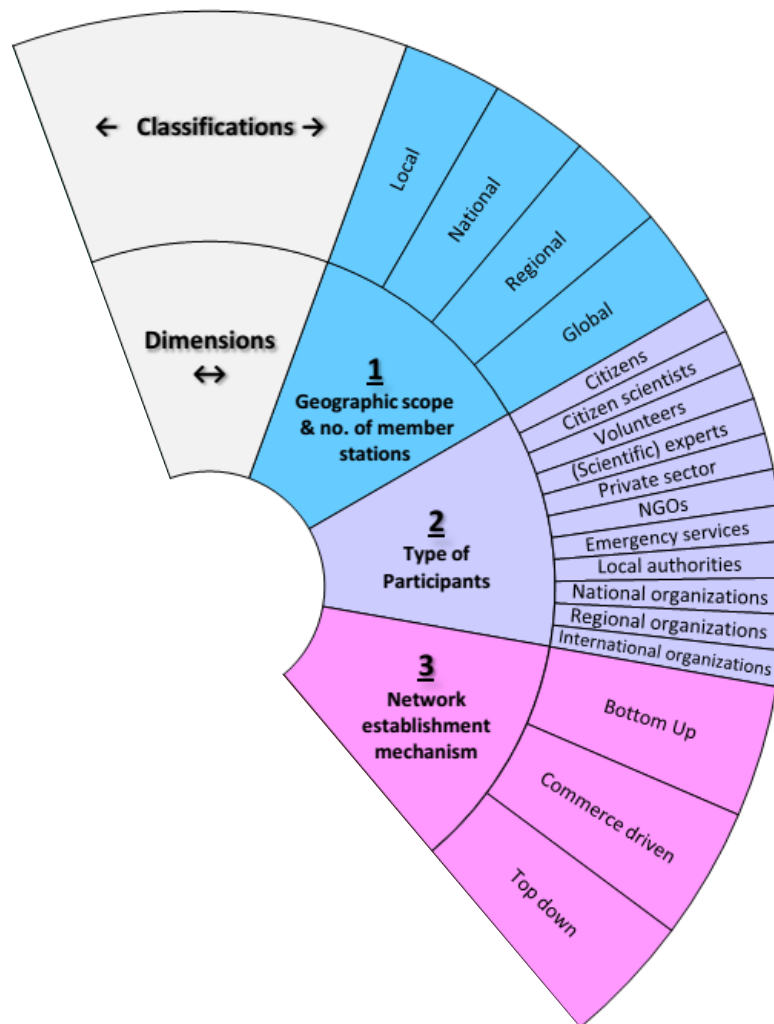
Framework for the research



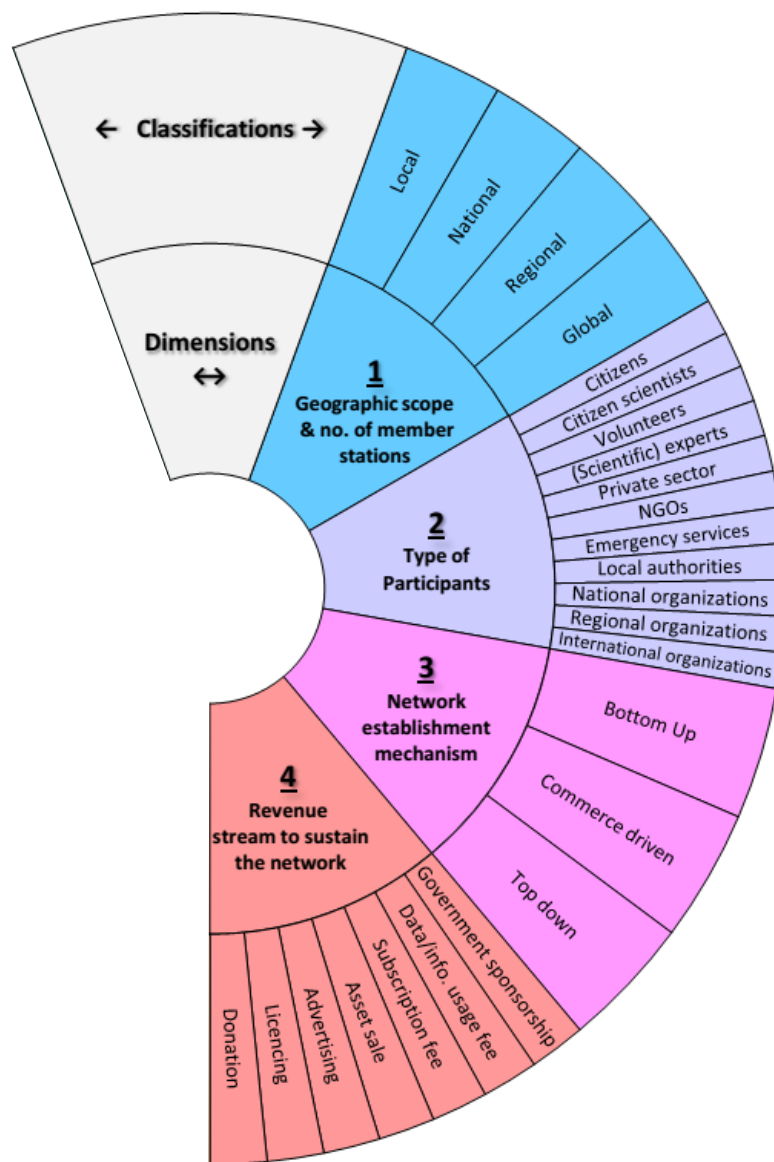
Framework for the research



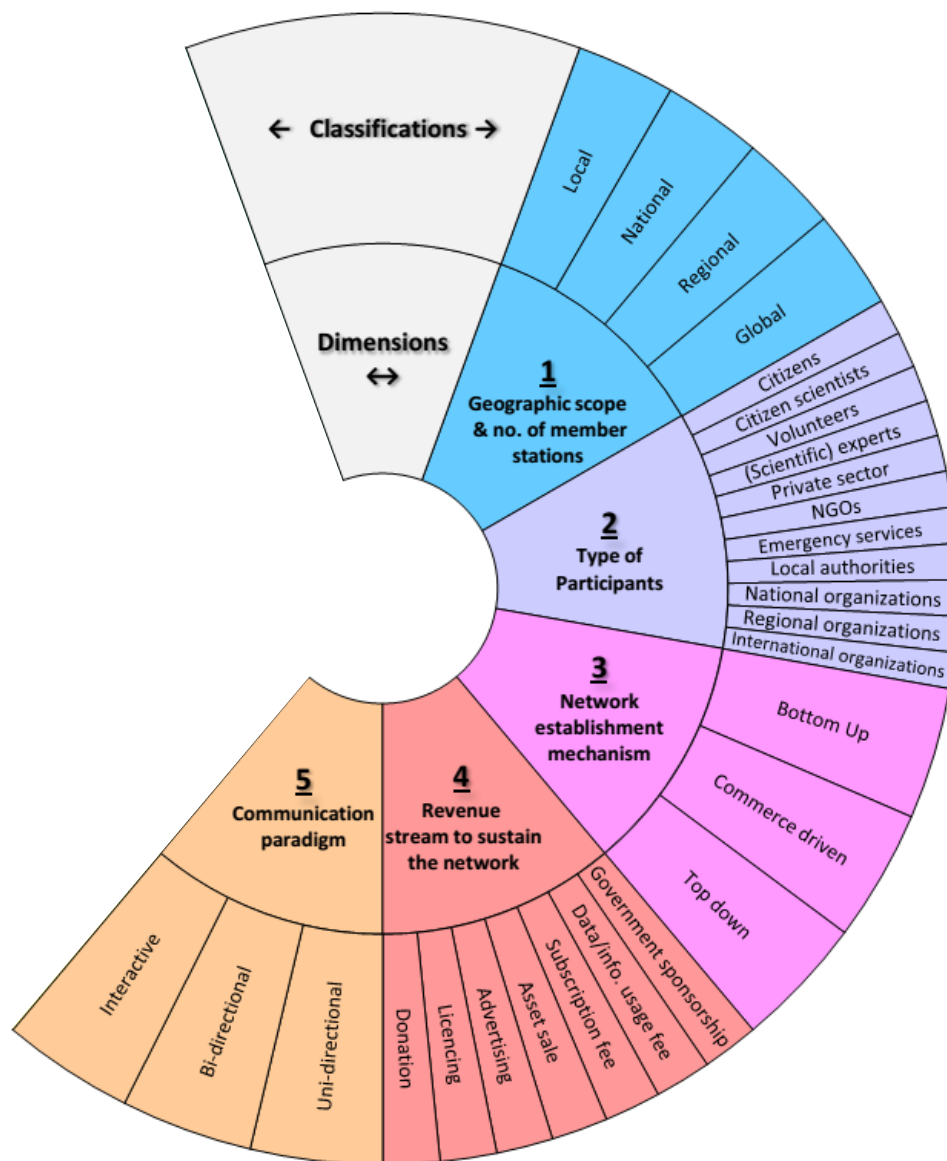
Framework for the research



Framework for the research



Framework for the research



Framework for the research

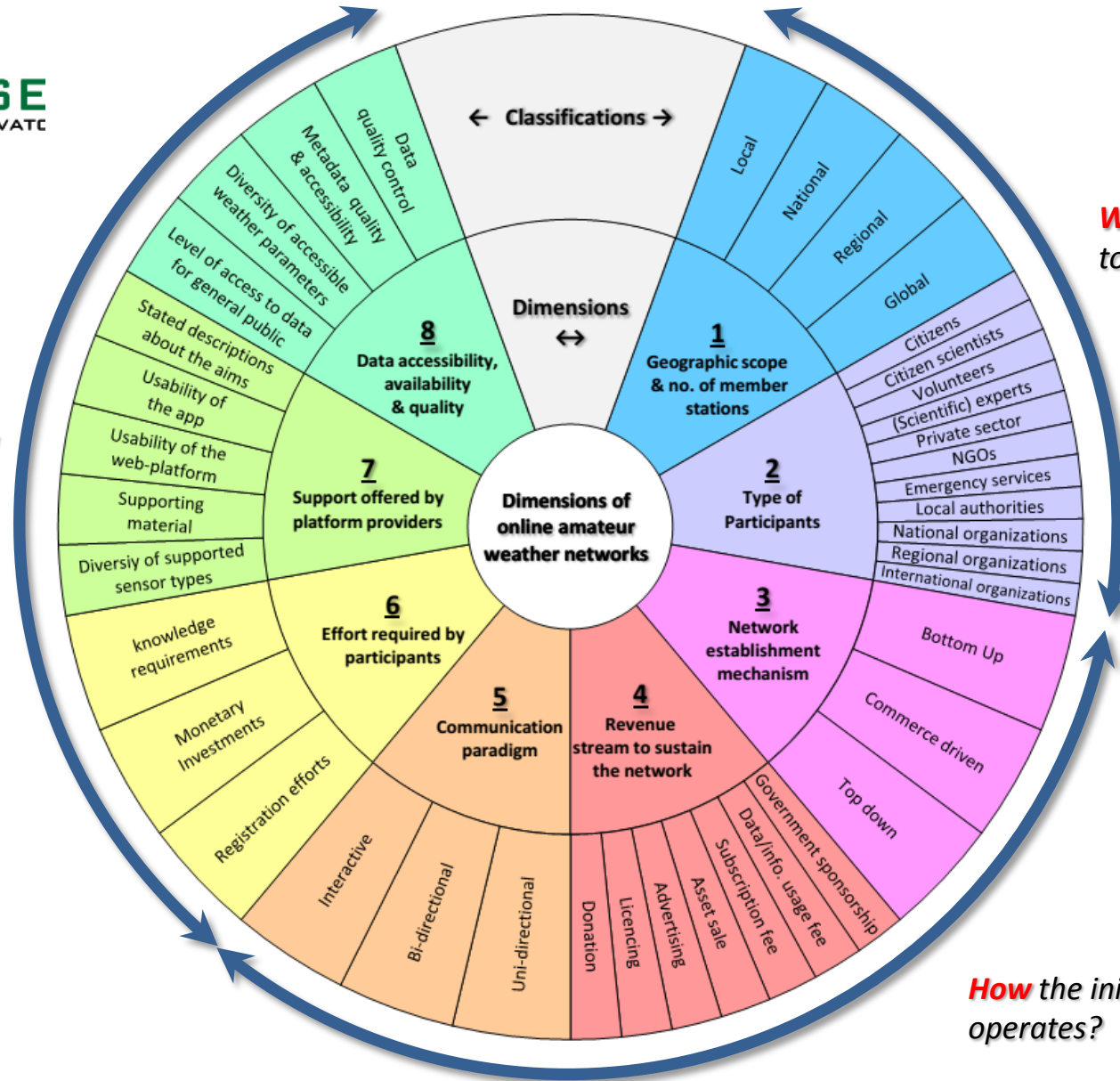


Framework for the research



Framework for the research

What is required,
offered or produced
by the network?



Who is selected
to participate?

How the initiative
operates?

*Review of **6** online amateur weather networks*



<https://www.wunderground.com/>



<http://www.weatherlink.com/>



<http://euweather.eu/>



<http://wxqa.com/>



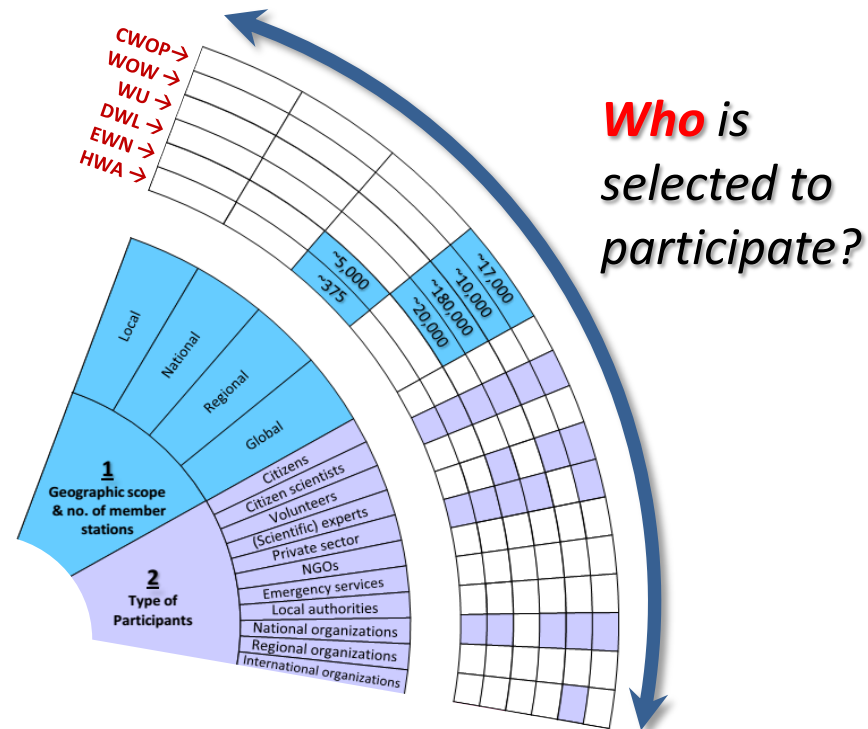
<http://wow.metoffice.gov.uk/>



<http://www.hetweeractueel.nl/>

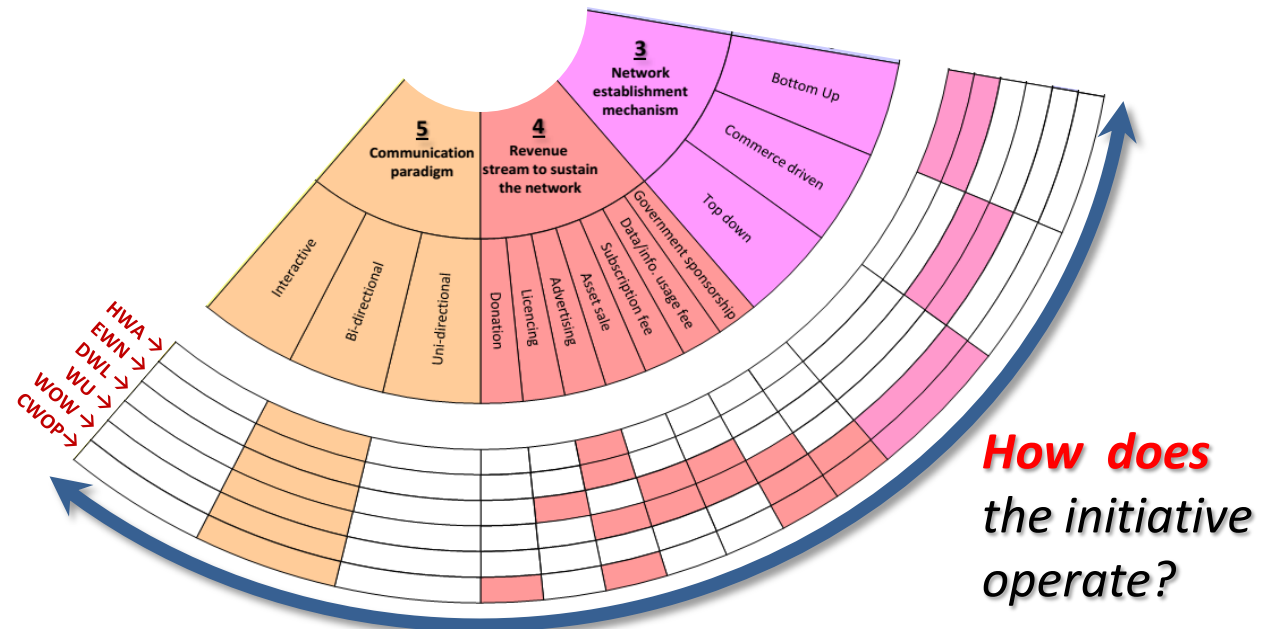
□ Key findings:

➤ Several key stakeholders are not (yet) well-engaged with the weather networks.



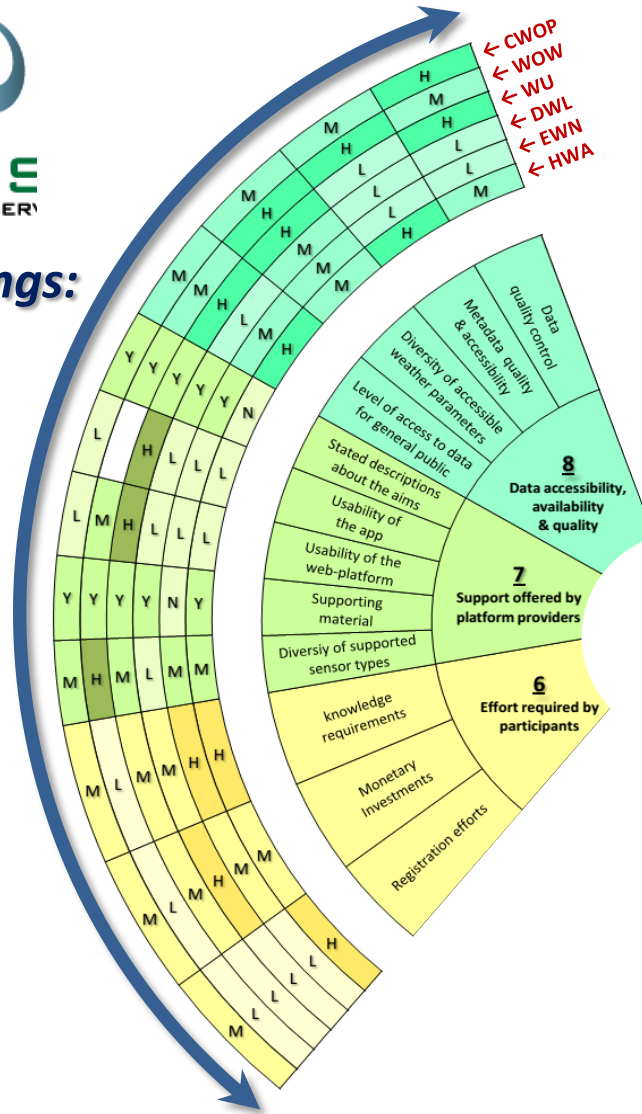
□ Key findings:

- *Link between the revenue stream and network establishment mechanism*
- *No sign (yet) of interactive information exchange*

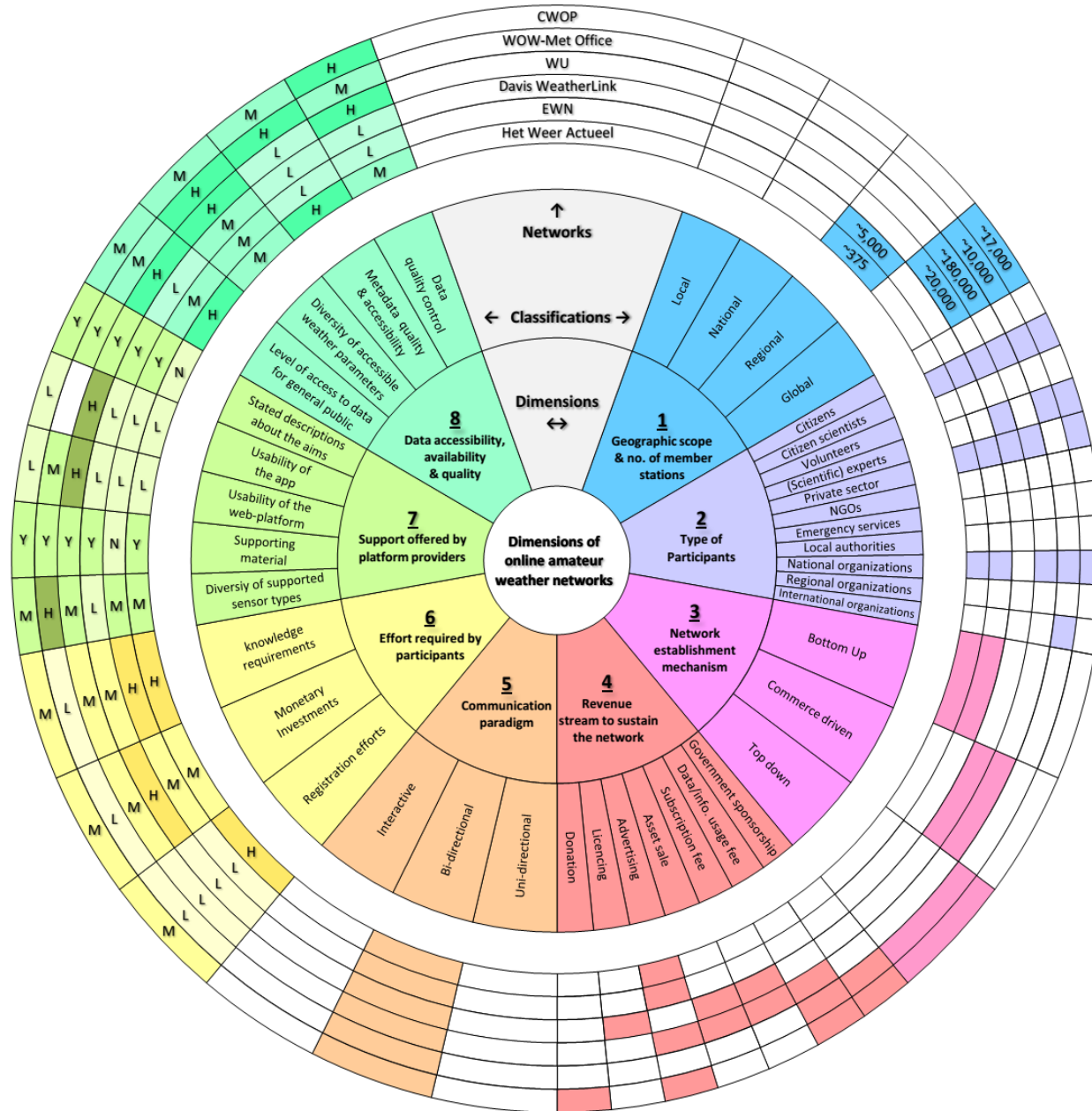


□ Key findings:

What is required, offered or produced by the network?



- Level of required effort by participants is high for many networks
- Usability of the web-platforms and mobile apps is still low for many networks
- Metadata integrity, availability and accessibility has a lot of room for improvement



Recommendations

- Networks must develop strategies to identifying and **better engage key stakeholders** who are not (yet) well-engaged in the networks
- **Diversifying revenue streams** is a recommended measure to enhance the financial sustainability of the networks
- *Networks must strive for more clear and concise collection and presentation of **metadata** and more importantly this information should be easily accessible for the general public*



Thank you for your attention

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