Open Data for Open Science

Advance Data Interoperability

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Working with Environmental Data

Grand Challenge: vast amount of heterogeneous data

- Data from difference sources
- Lack of easy to use tool and incentive to share data
- Lack of tools for easy adoption of (existing) standards

Unique Challenge: it doesn't end with papers

- Compelling presentation of knowledge is critical
  - Influence policy makers and the general public
  - Enable citizen science to scale the effort.

ODOS: Open Data for Open Science

Inspiration:

- The Fourth Paradigm: *make scientific discoveries in big data*
- OData: *unlock data from silos of applications*

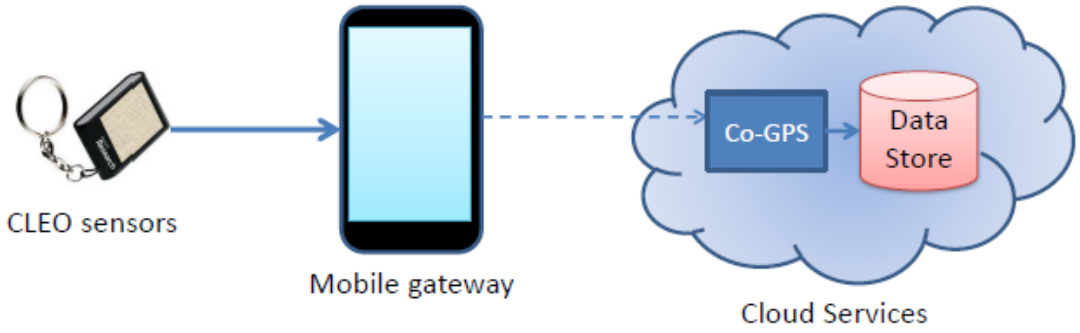
Implementation:

- Collaborate with environmental researchers to explore new ways of using software to enable scientific discoveries.
- Take advantage of the OData compliant technologies to create solutions for data- and information-intensive problems and challenges.
  - Separate service model from data model.
  - Open up your data, not your database.

ODOS: Open Data for Open Science (cont.)

Example:

- Project CLEO: *Cultivating the Longtail Environmental Observatory*
  - From Sensing and Energy Research at Microsoft Research
  - A mobile sensing platform
    - ultra-portable,
    - low-power sensors,
    - phone-based data upload software
    - a location resolution and data management web service in the cloud.
    - cloud-offloaded GPS (CO-GPS) for location sensing.
    - audioport-based connector.
    - OData compliant (directly accessible to OData tools, .e.g WWT)



An example of
Seamless Transformation
from data to information to Knowledge