

USGS Water Use

The Internet of Water and
National Hydrography

 **USGS** Infrastructure
science for a changing world

Background and setting:

Observations

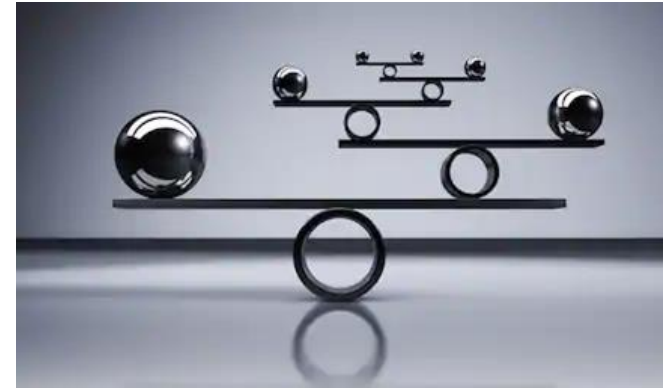
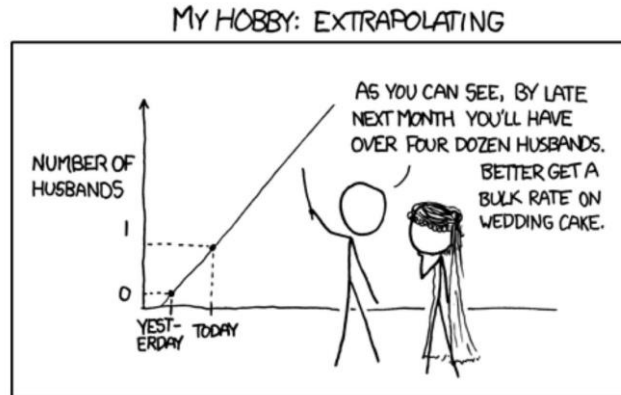
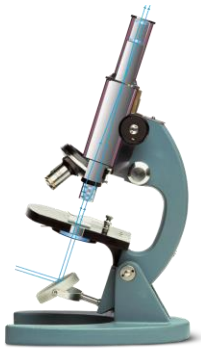
Sensors, remote sensing, field collection, laboratory, surveys, sharing, inference.

Predictions

Physical, empirical, and hybrid models.
Projections, forecasts, and hindcasts.

Assessments

Issues concerning availability due to quantity or quality for any stakeholder concerns.



Background and setting:

Observations

Predictions

Assessments

Catalog and index of subjects of observation and observational data.

Framework of prediction locations and available predictive products.

Tools to conduct studies and library of prior assessment outcomes.

Underpinning interconnected geospatial framework.

Supporting infrastructure for catalogs and dissemination.

Internet of Water

"The Concept"

"The Team"

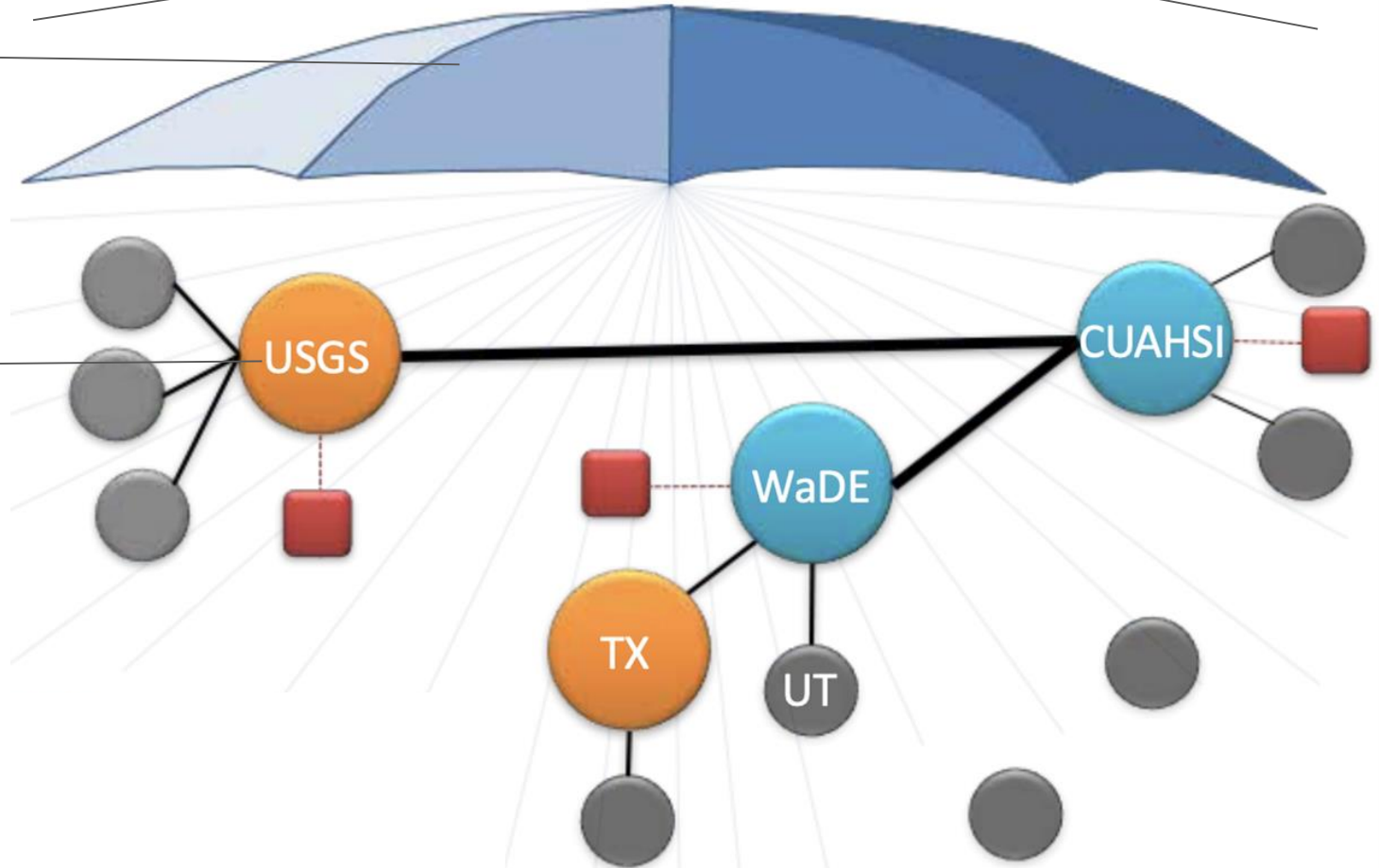
"The USGS Project"



The Concept

The Team

The USGS Project





THE INTERNET

A series of tubes.

The Internet - More like icing in a layer cake.

People who just want the answer.



Services to create, read update, and delete information.

People who just want the software.

Business rules, data transformation, value adding services

People who just want the data.

Base data using well known structures, terminology, and formats.

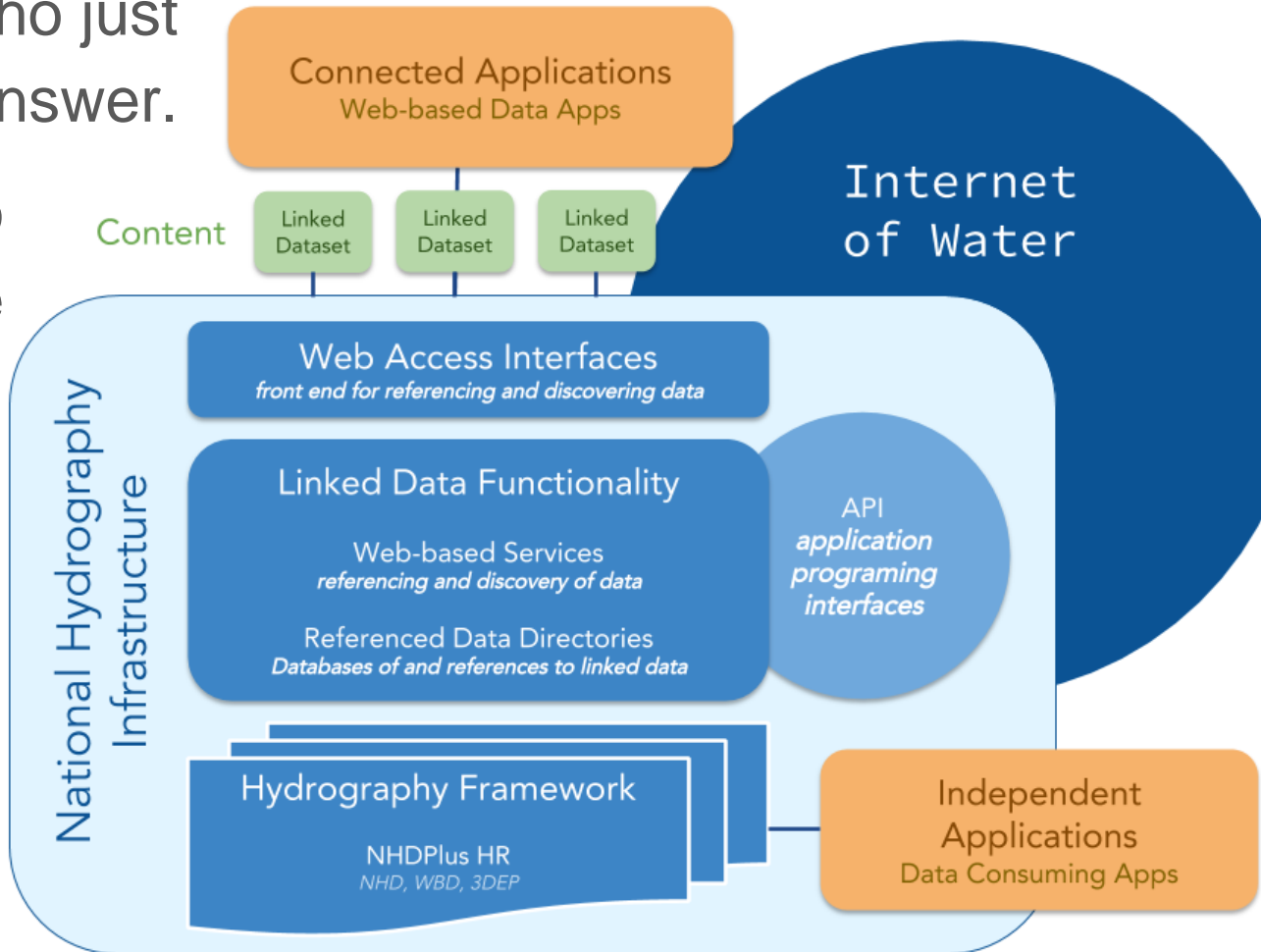
The Internet

People who just want the answer.

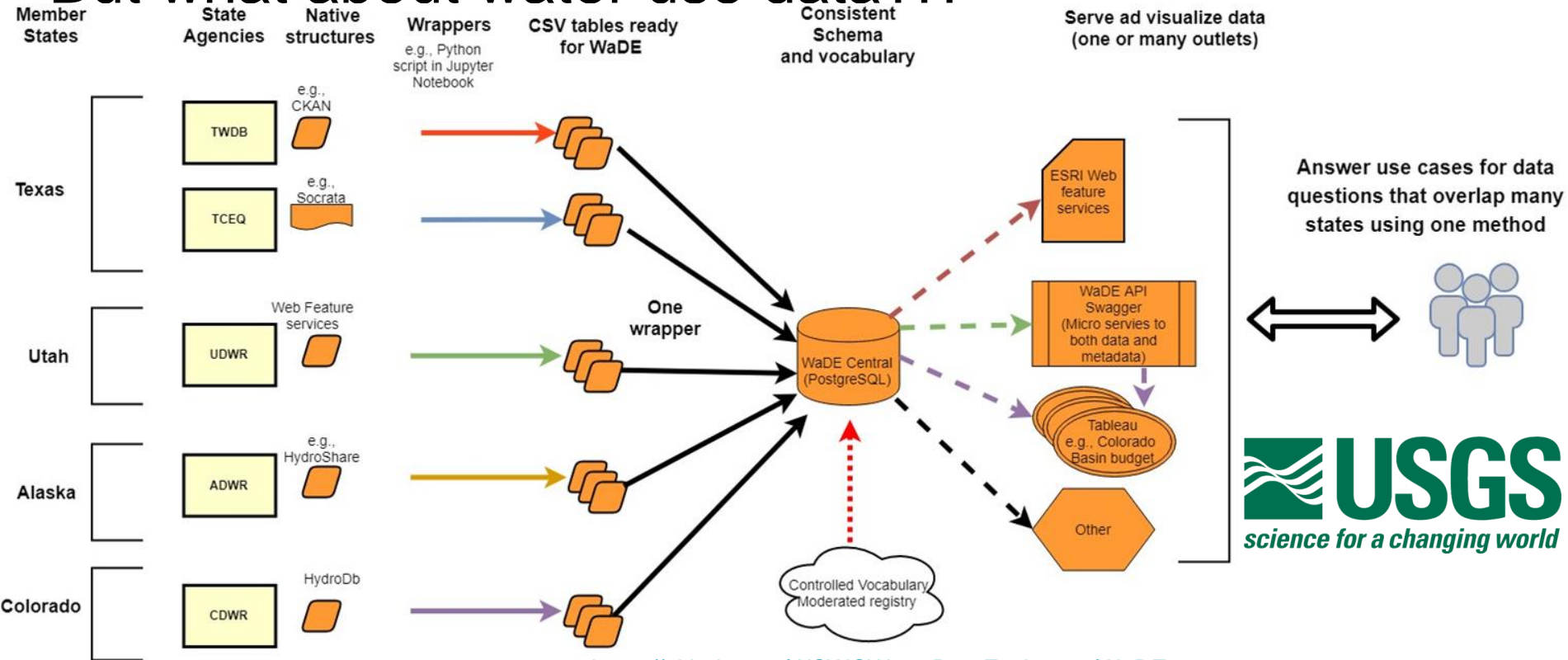
People who want to contribute

People who just want the software.

People who just want the data.



But what about water use data?!?



<https://github.com/WSWCWaterDataExchange/WaDE2.0>



Committed to interoperability for ease of use. Need to be careful not to introduce nationally synthesized information in the wrong way.

But what is USGS going to do?!?!?

Caveat: Stakeholder engagement for future products is under way. These are notional examples.

- 1) Draw on and contribute to information shared by the community.
- 2) National reference data of anthropogenic modifications to the water budget.
- 3) National model that synthesize a **closed water budget**:

Thermoelectric, irrigation, public supply in a water budget context

Water budgets for about 100k hydrologic units for the country (HU12)

Derived from nationally consistent and regionally specific projects.

