Defining a Roadmap for the WQIE

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WEATHER CLIMATE WATER

WWQA World Water Quality Alliance

WORLD METEOROLOGICAL ORGANIZATION

WMO HydroHub

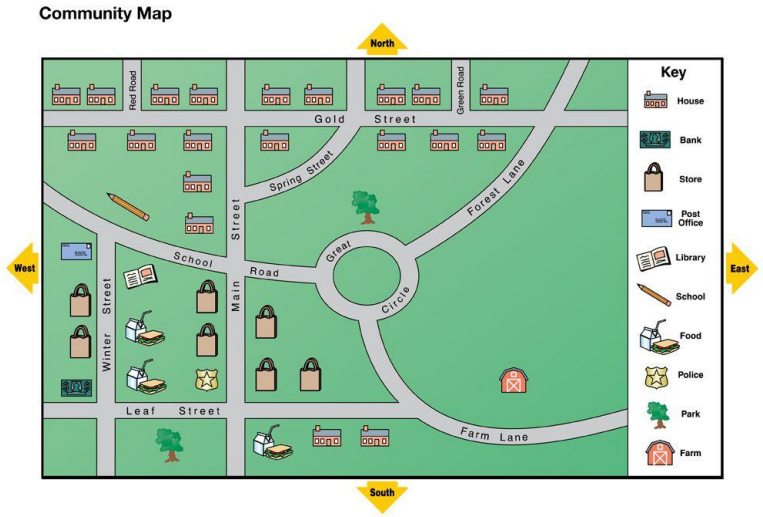
UN environment programme 50 1972-2022

UNESCO

World Health Organization

Open Geospatial Consortium

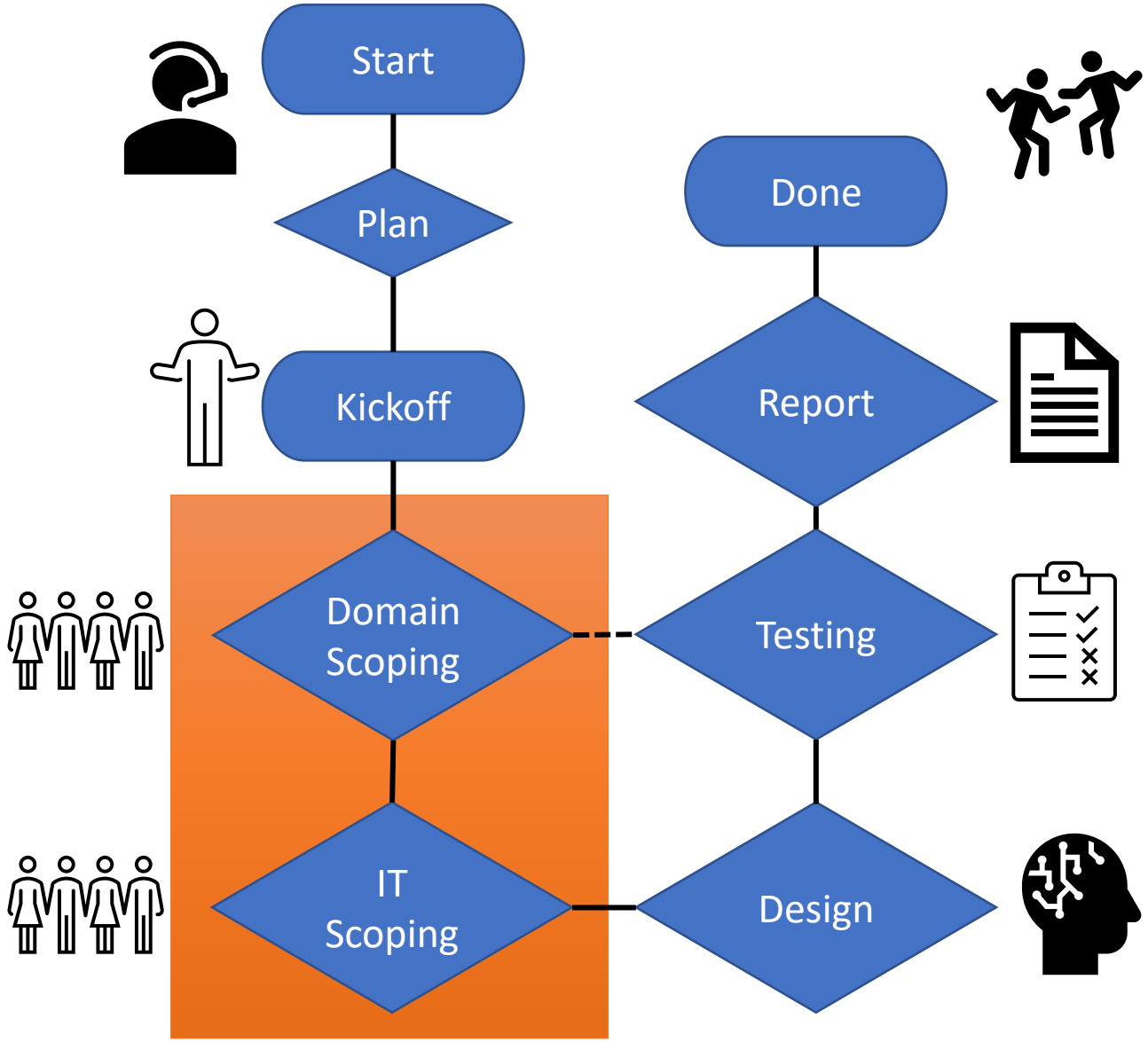
A Road Map?



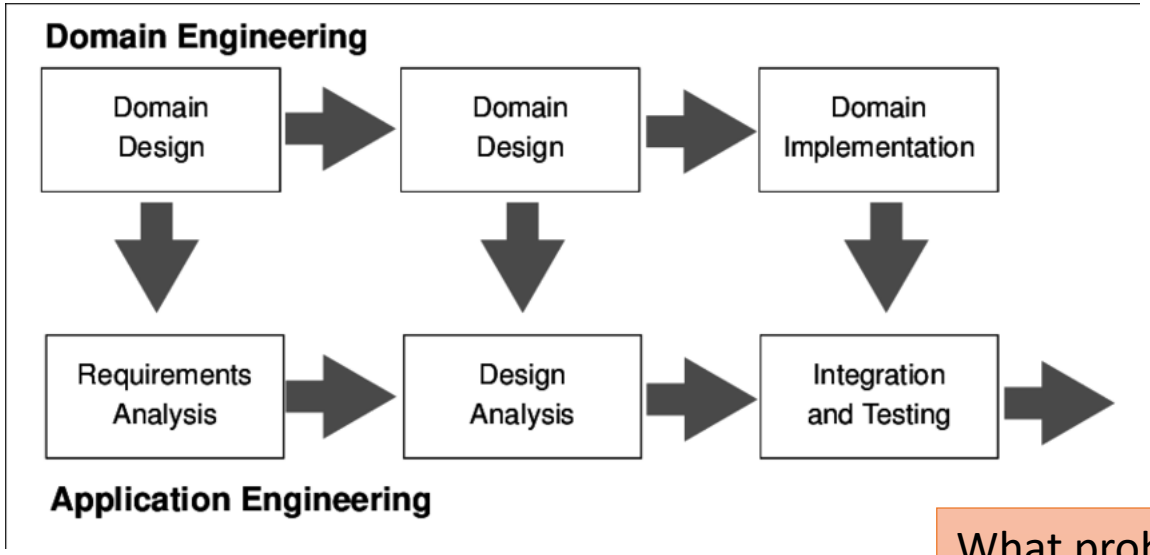
https://media.nationalgeographic.org/assets/photos/000/238/23896.jpg

A “real” road map says something about how **people** move through the landscape.

A project roadmap says something about how **people** move through activities of a project.

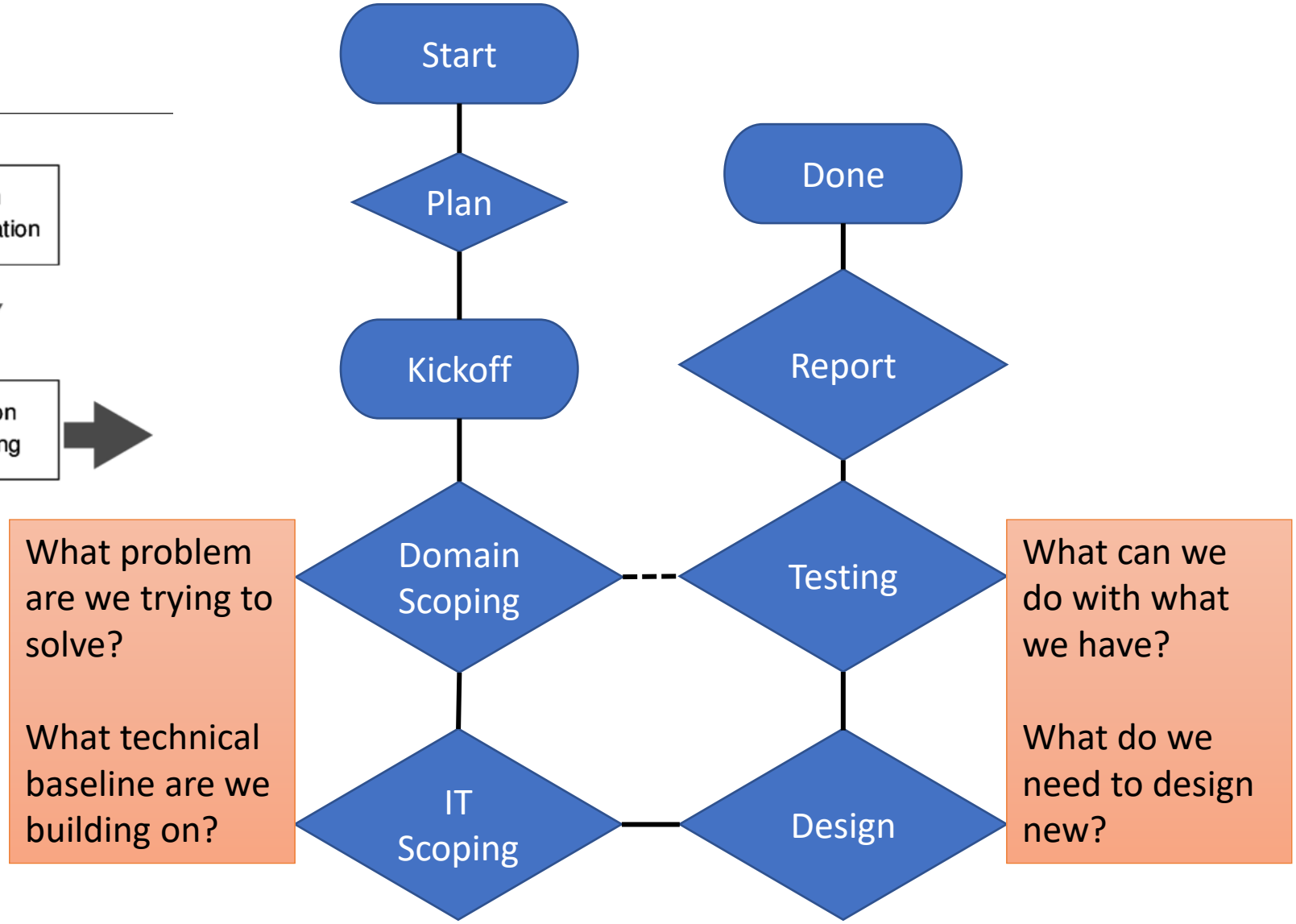


Domain Engineering



https://www.researchgate.net/publication/243764286_A_Case_Study_in_Successful_Product_Line_Development

How do we think about this with water quality domain data?



Water Quality Domain

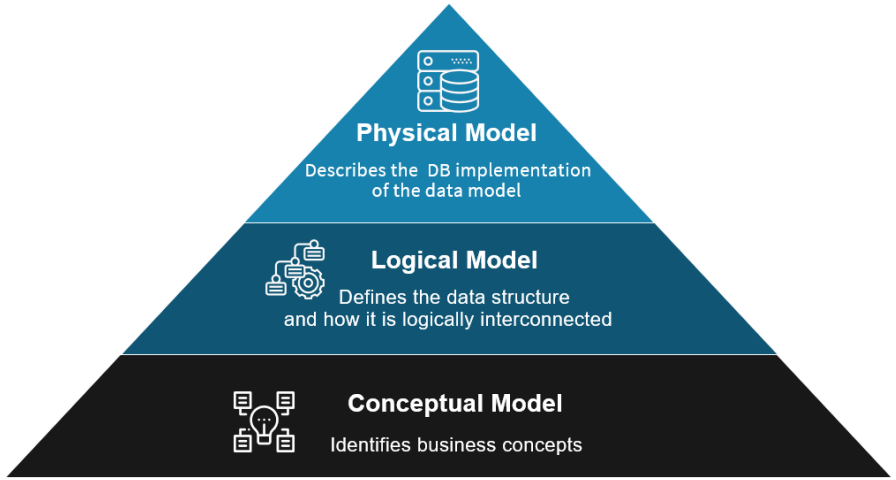
In general terms, water quality is assessed on the basis of a set of **physical, chemical and biological variables**, most of them **concentrations of chemical entities or organisms**, that are compared with criteria often a function of the type of water body and of its uses.

State-of-the-Art Report on Quality Assurance in modelling related to river basin management
http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.121.5260

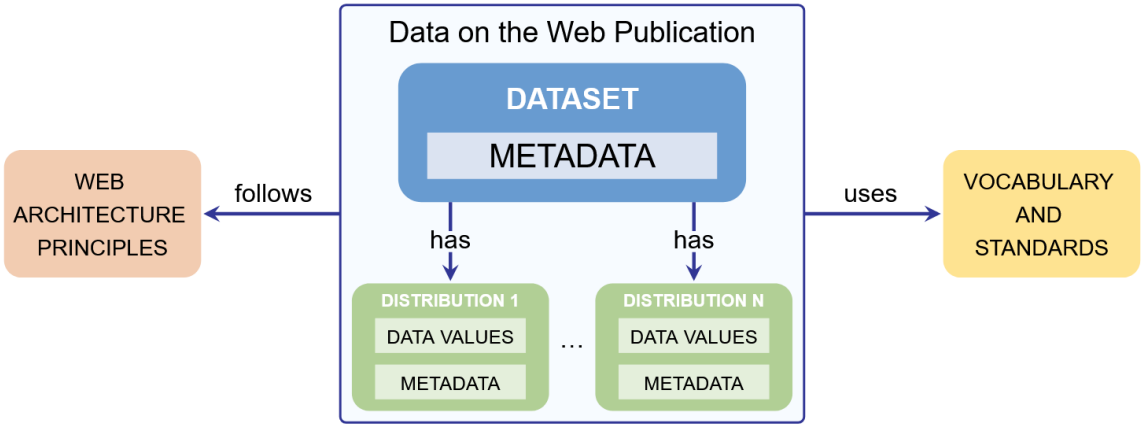
- Biogeochemistry
  - e.g., chemicals / salt intrusion in groundwater aquifers
- Food webs and ecosystem dynamics
  - e.g., biodiversity as bio-indicators of surface water pollution (hydrobiology, microbiology, …)
- Fate and transport of chemicals and water quality
  - e.g., nutrient (or other broader chemicals) flux sample data on surface water
- Real time WQ sensor data
  - e.g., temperature and salinity measurements in groundwater
- Sediment and soil erosion
- Other

Mentimeter Poll

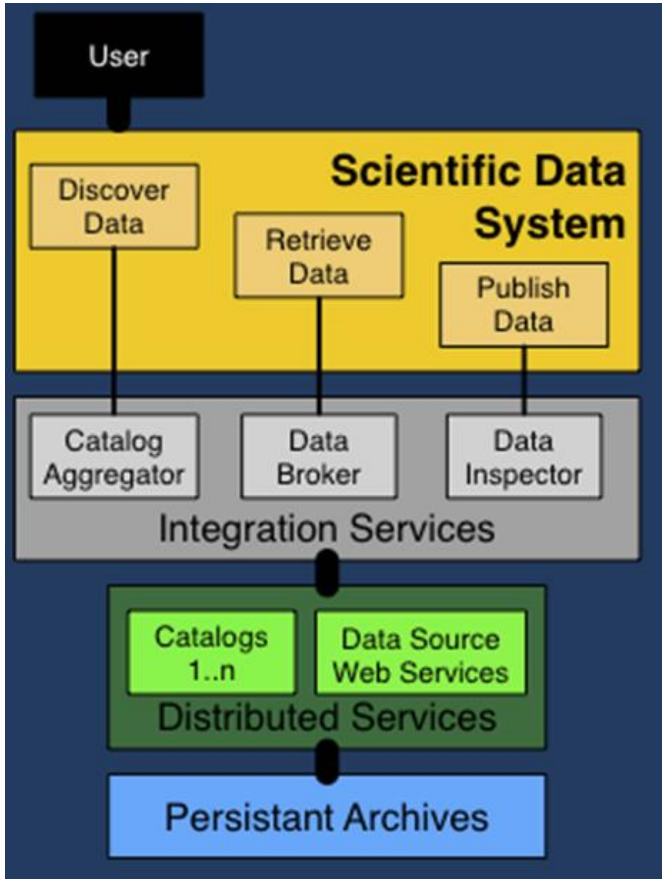
Informatics Patterns



https://docs.fintechos.com/Studio/20.1/UserGuide/Content/Evolutive%20Data%20Model/Evolutive%20Data%20Model.htm



https://www.w3.org/blog/2019/03/w3c-strategic-highlights-strengthening-the-core-of-the-web-web-of-data/



- Vocabularies, taxonomies, ontologies
- Interchange Mechanisms
- Tools and Environments
- Integration Patterns

Mentimeter Poll

I stole this from Igor earlier.

Layers of interoperability

Technological layer

Data are published, and made accessible through **standardized interfaces**

Data and format layers

(Meta)data are structured according to **standardized models and schemas**, and codified using standard **classifications and vocabularies**

Human layer

There is **common understanding** among data providers and users regarding the meaning of the terms used to describe its contents and its proper use

Institutional and organizational layers

Responsibility and accountability for data collection, processing, analyses and dissemination are effectively allocated

Discussion:

What problem are we trying to solve?

What technical baseline are we building on?

What can we do with what we have?

What do we need to design new?

Workshop Series on Water Quality Monitoring – Opening Workshop

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Thank you!

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