

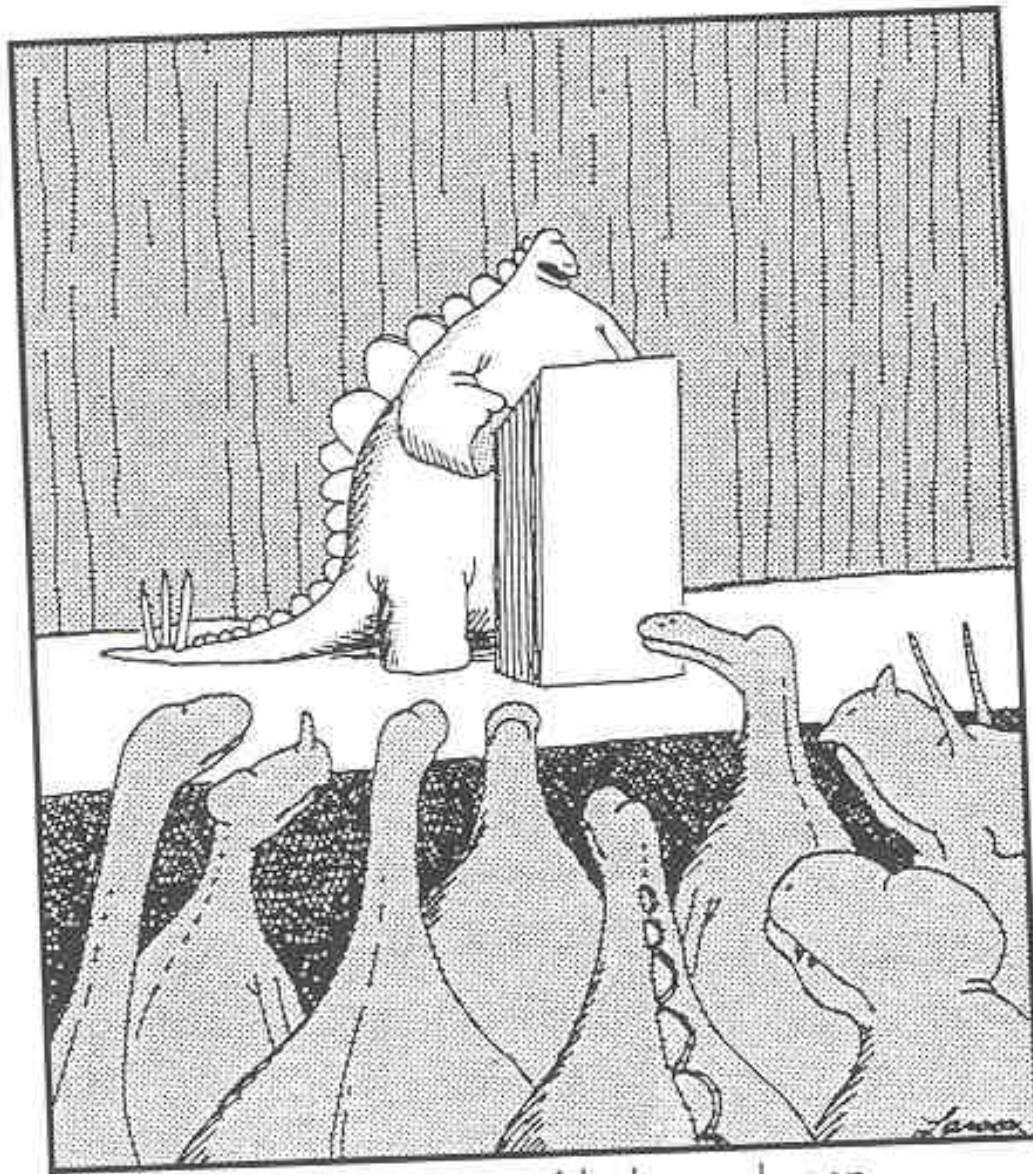
MEOPAR

Some Thoughts:

Once more around the Buoys or...  
Into the Future?

# What did I learn?

- More people are collecting more data than ever before
- There are durable well run regional nodes serving up world class data assets to core constituents
- There is a lot of research going on
- No one is spending an adequate amount on data management in a sustainable way
- The marine/ocean community needs to look to successes in the terrestrial community to avoid re-inventing, rediscovery, & redundancy
- Standards – Not always understood



# The Far Side®

LAST IMPRESSIONS  
— 2002 —

March

**What Major Issues  
do  
I see for DM for  
Ocean Science?**

Saturday **23**

"The picture's pretty bleak, gentlemen. ...  
The world's climates are changing, the mammals  
are taking over, and we all have a brain  
about the size of a walnut."

# What Major Issues do I see for DM for Ocean Science?

- Not enough money is being invested in DM
- Not enough people realize that DM for Ocean Science is NOT RESEARCH!
- Lots of efforts going on to re-invent stuff that already exists
- Potential science assets and personnel being spent on building stuff that may already be either open source or commercial.
- No National Vision, Strategy or Outcomes defined

# What Opportunities are there?

- Excellent opportunity to leverage the regional nodes in academia and government (Prov, and fed)
- Lots of knowledge and tools out there to leverage to provide access to data and simple useful applications.
- A realization across the community that this is needed to address big questions on climate change, Ecosystem based planning and management, ocean modelling and forecasting.
- Excellent opportunity for international cooperation
- A potential champion (MEOPAR) that has some sustainable funding for this type of initiative.
- Some potential to leverage the FGP – this needs to be qualified.

# General Comments?

- WE HAVE TRIED THIS BEFORE.... NEED TO UNDERSTAND HOW TO DO IT RIGHT THIS TIME!
- THIS IS NOT PURE SCIENCE... IT ENABLES BETTER SCIENCE, MORE EFFECTIVE USE OF DATA FOR:
  - MULTI DISCIPLINARY SCIENCE,
  - DECISIONS,
  - POLICY,
  - REGULATION & ENFORCEMENT

# The Idea is not new

## Integrated Back Office and Store Front

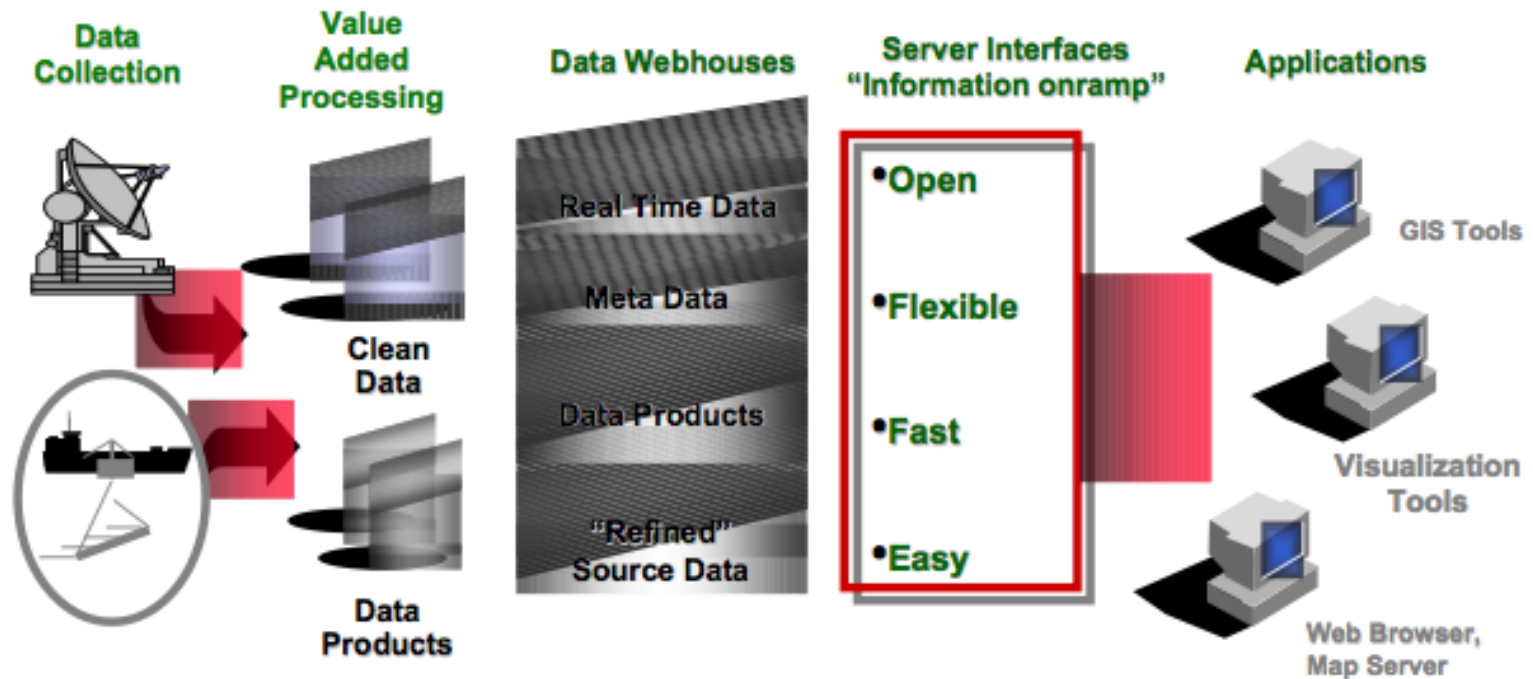
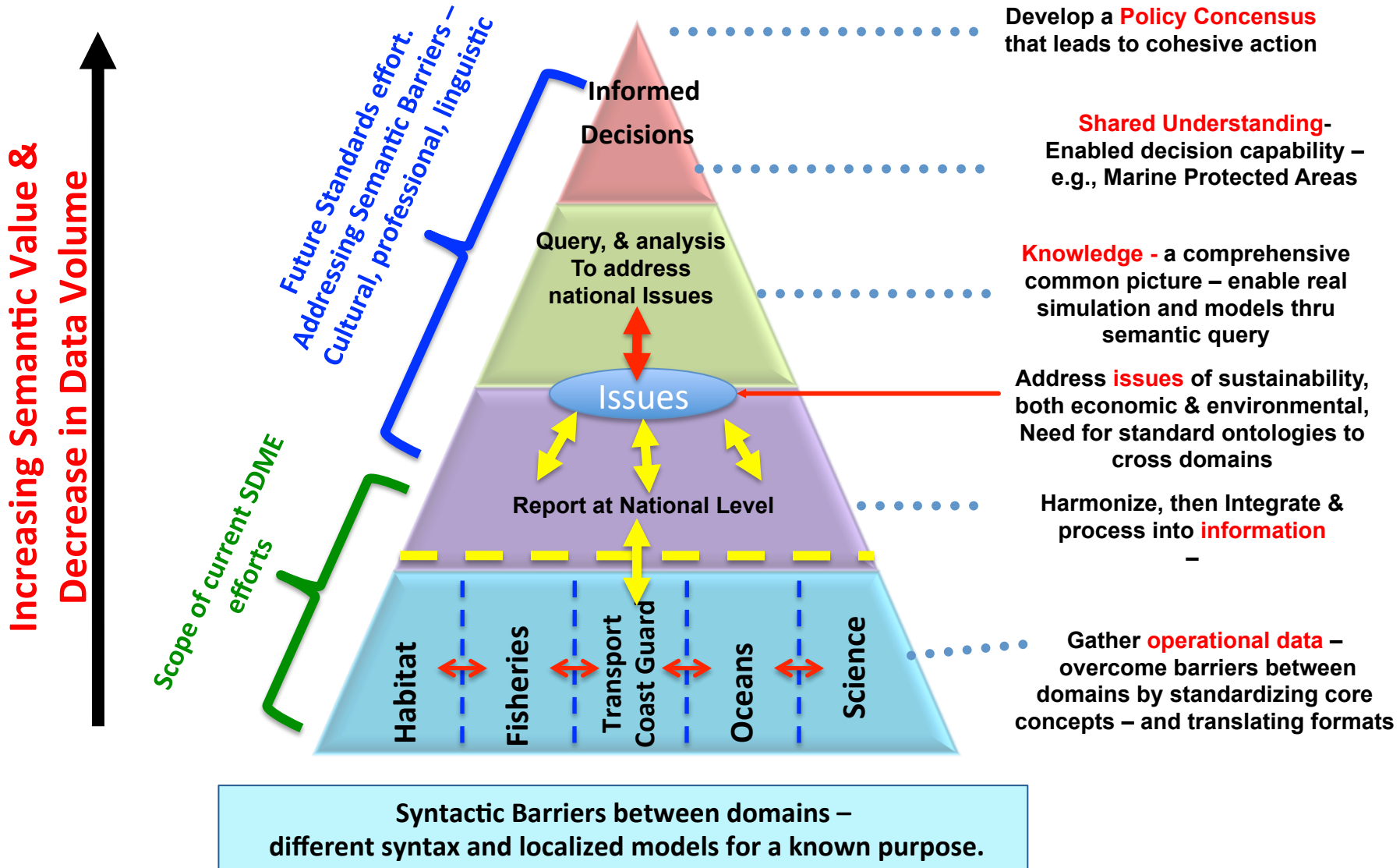


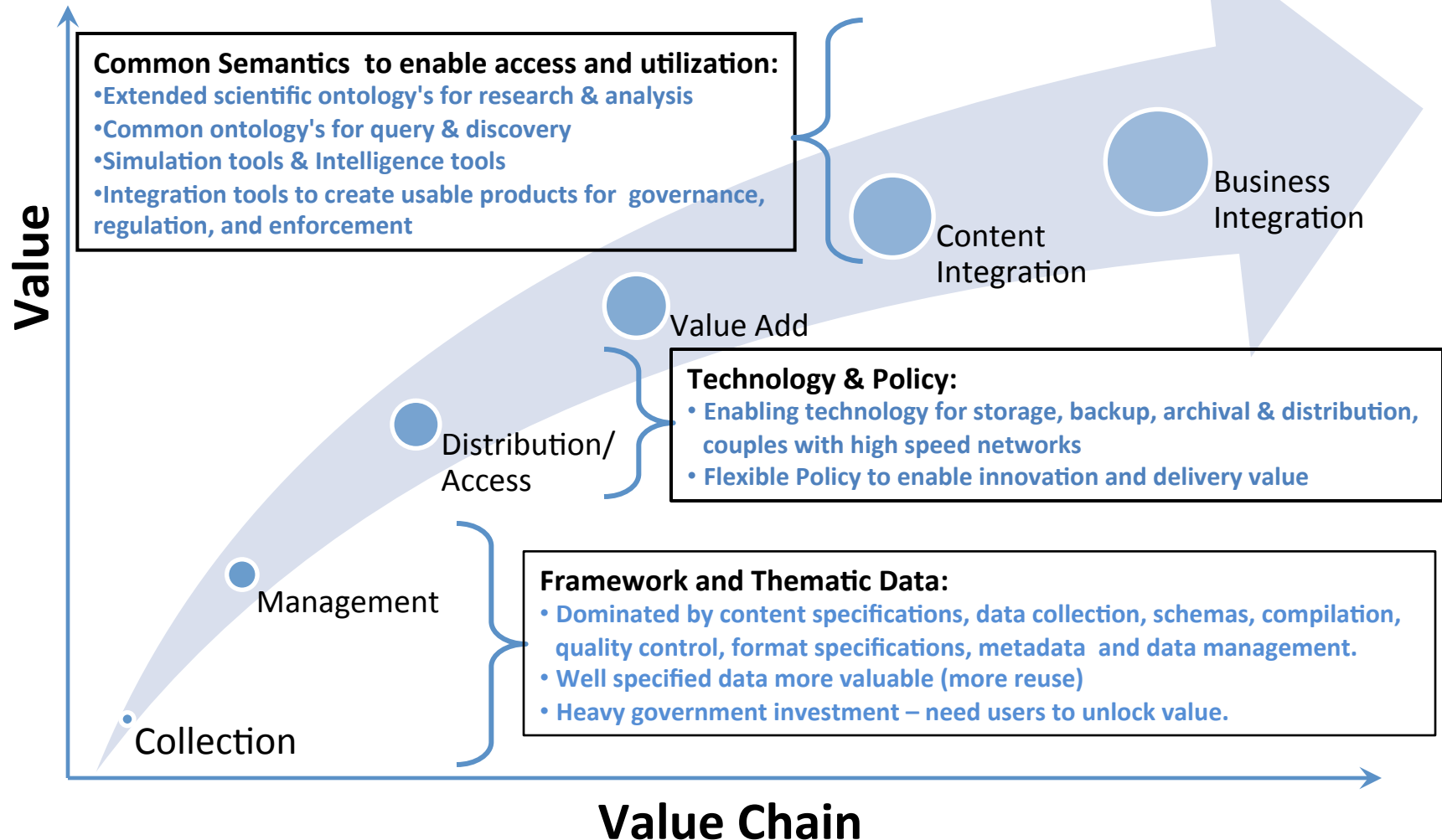
Figure 3.1: Integrated View of the Marine Geospatial Data Infrastructure (Adapted from Kucera and Keighan, 1998)

# Directing Future Science Data Management Efforts – Moving up the Value Chain from Interoperable Data to Effective Decisions



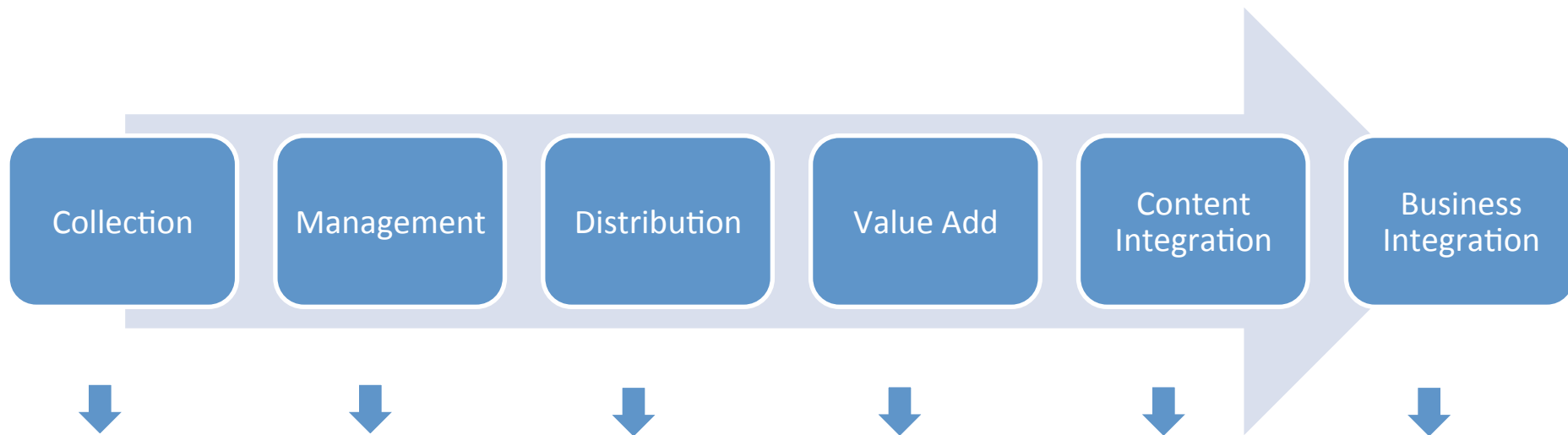
# Move up the Semiotic Ladder – Information Value Chain

*The Information Value Chain highlighting the importance of progressive data management to enable decision making.*



# Spatial Data Infrastructure: Data to Knowledge

- Being part of Network of Networks of data goes beyond Data Management as the entire information value chain:
  - **Planning for the Scientific data collection**
  - **Collection and collation**
  - **data administration: defining metadata about data collection, usability and limitations, input to the security policy, defining the logical data models for content storage.**
  - **Access for Value add Simulation and analysis (actual simulation and analysis not part of data management but rather part of science)**
  - **Data content integration – rules and procedures for how to do this**
  - **Business integration – how to use the data for policy, fisheries management etc.**
  - **In short... turning data into information and Knowledge thru adding value in a durable distributed network.**



# Data Management VS. Information and Knowledge Exchange

- Until now Scientists agree that DM related to science was focused at the first steps in the information value chain that got the data from the sensor or lab to the managed database.

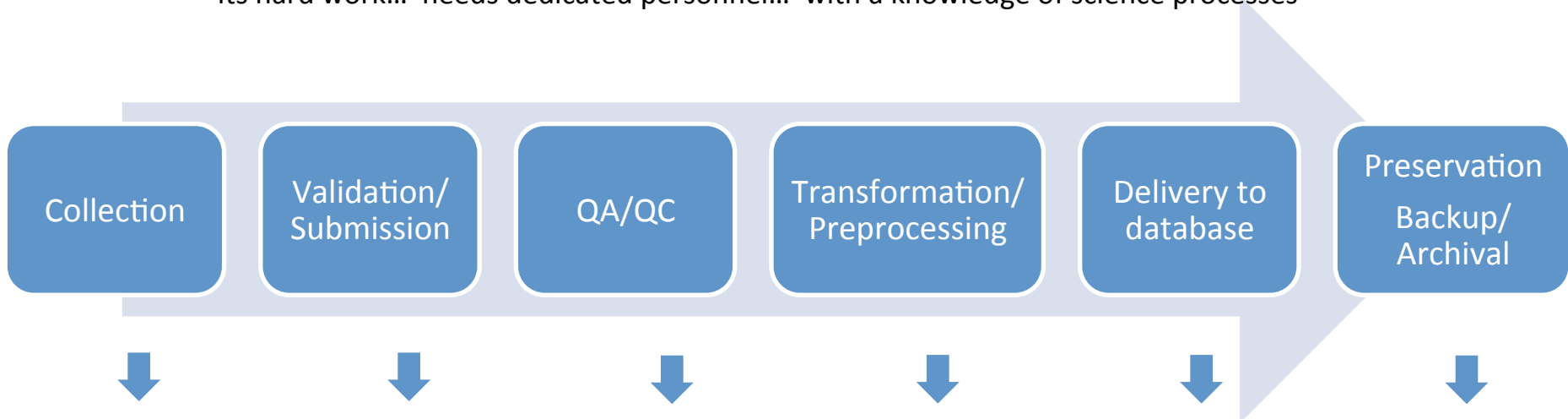
- Survey design
- Data collection
- Validation
- QA/QC
- Preprocessing:

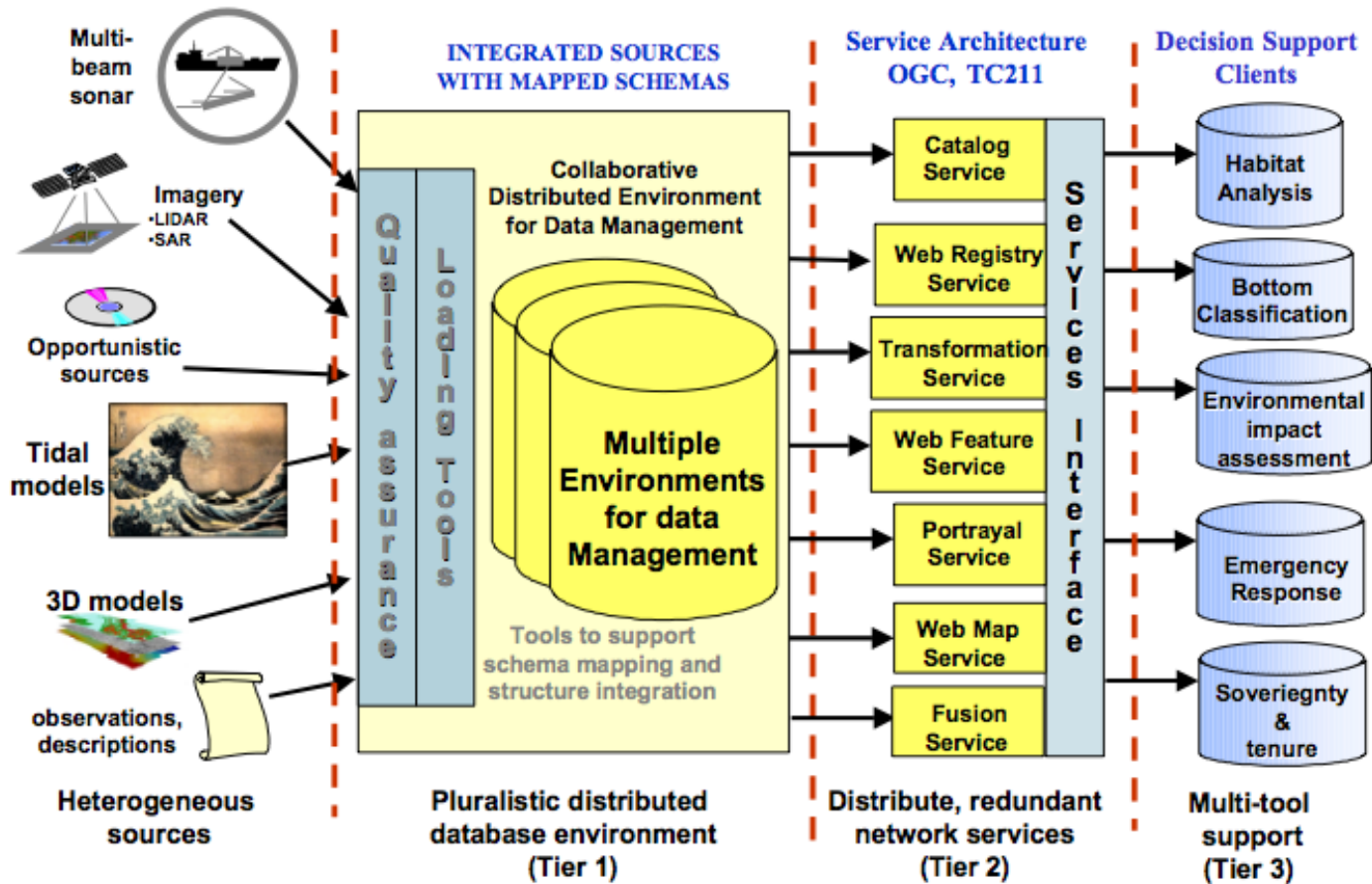
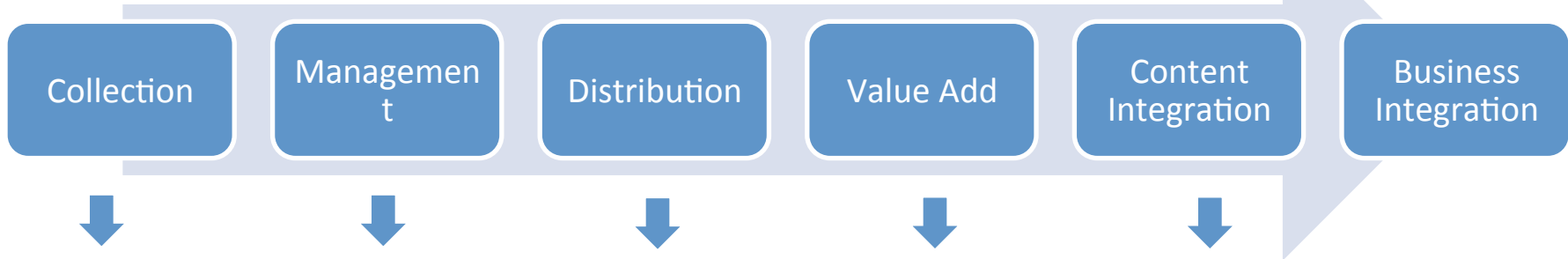
## Application design and support:

- Dominated by content specifications, data collection, schemas, compilation, quality control, format specifications, metadata and data management.
- There are applications at this point that are designed by scientists, uses by scientists and maintained by scientists.... Need personnel to do this.

to make is usable – and in some cases generating summary data from the raw data (many people never see the raw data)

- Data administration- designing the database, ensuring rules on maintenance and update are in place, metadata creation, and scheduling backup and archival.
- Its hard work... needs dedicated personnel... with a knowledge of science processes





# Last Comments?

- WE HAVE TRIED THIS BEFORE....
- THIS IS NOT SCIENCE...
- KEYS TO SUCCESS:
  - Common Vision
  - Well-defined and agreed to Mission
  - Strategy That included outcomes
  - Choose 4 Use cases (e.g., Climate Change, Tanker Safety etc)
  - Simple tactical plan that builds on what we already have that is world class.
  - Get private sector involved