Australian Government

Geoscience Australia

Agency challenges in moving from demonstrators to real-life interoperable systems.

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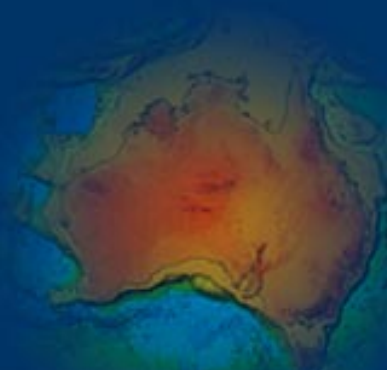
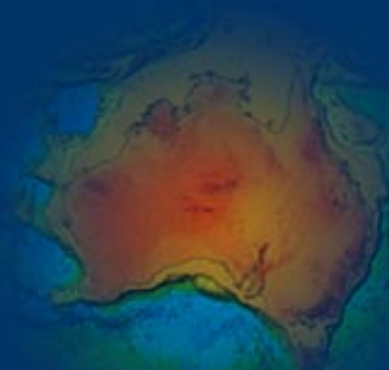


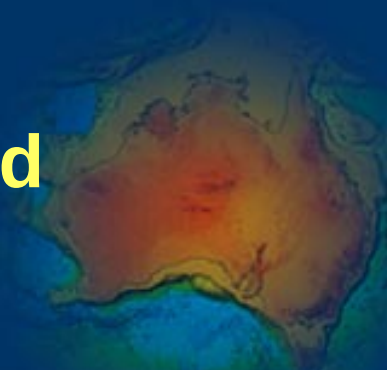
Interoperability

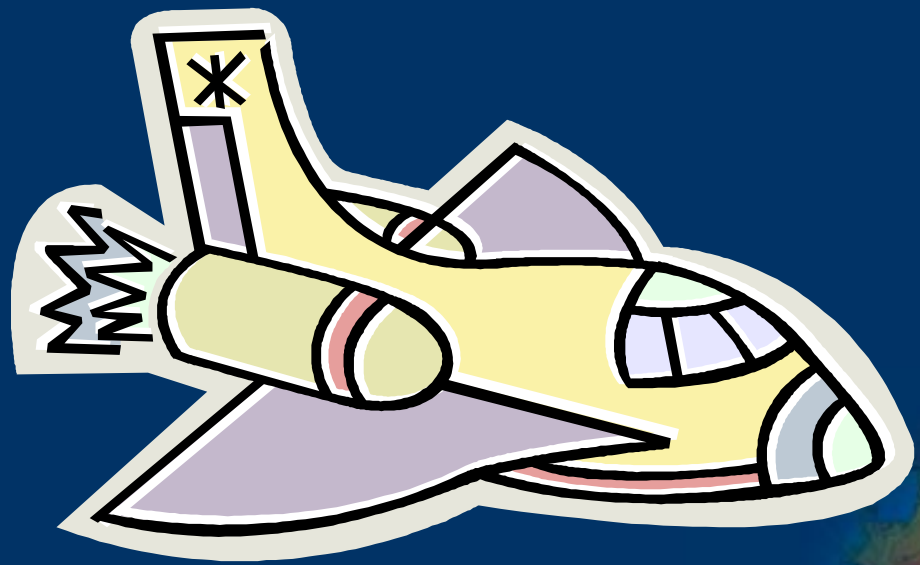
- **My stuff works with your stuff but I don’t need to know how your stuff works.**



Web services

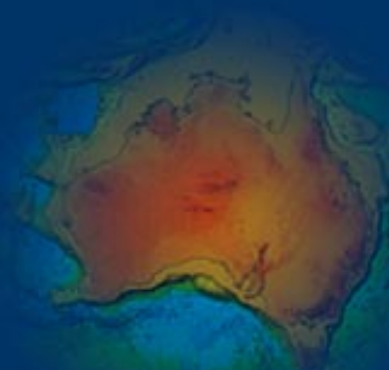
- Pros
  - Enable more sophisticated client interaction
    - Machine-to-machine connection
  - Put the client in control of the access
  - Allow interoperability
  - More sustainable than specially configured applications
- Cons
  - Changing existing skills and systems
  - Initial resource commitment is required



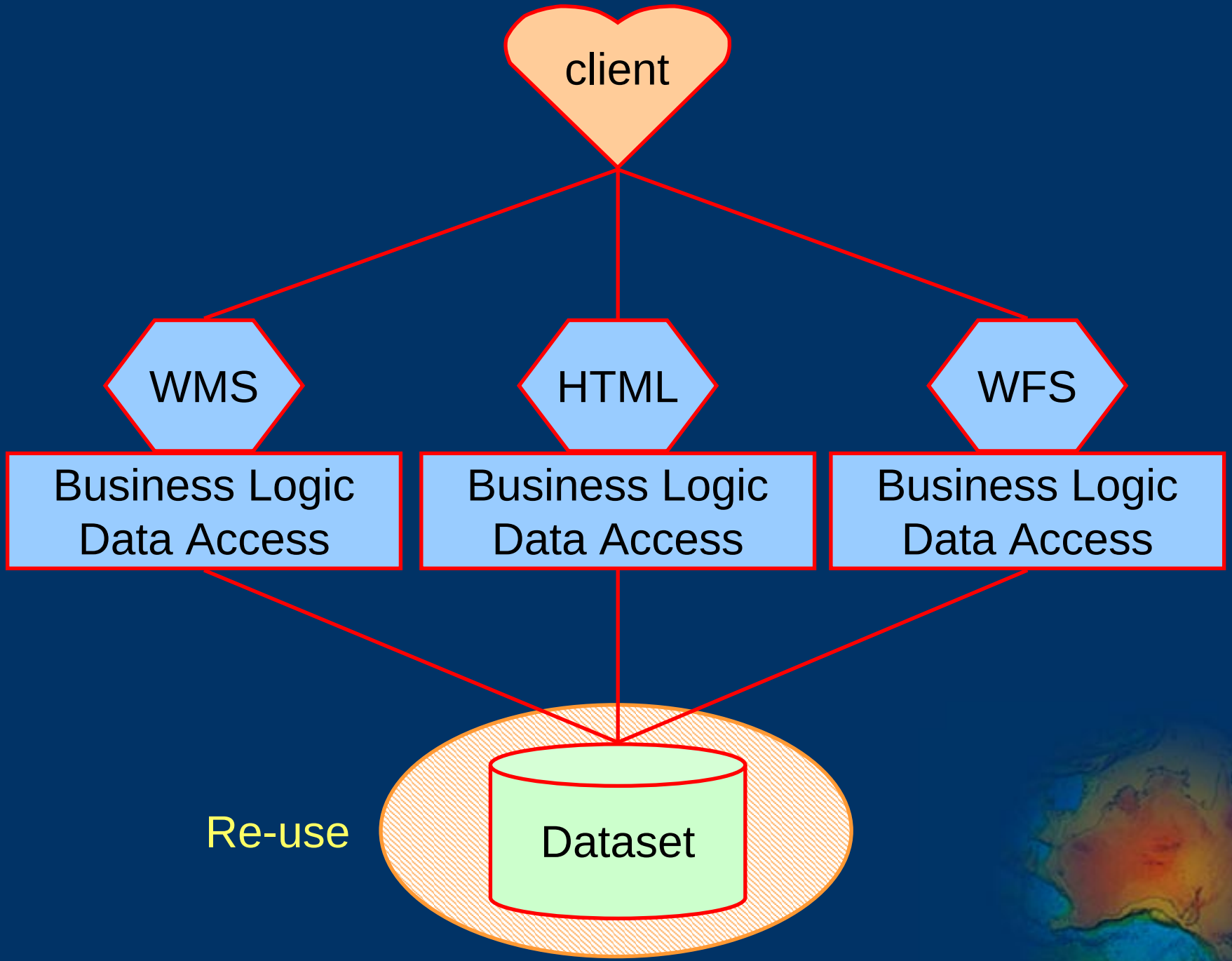


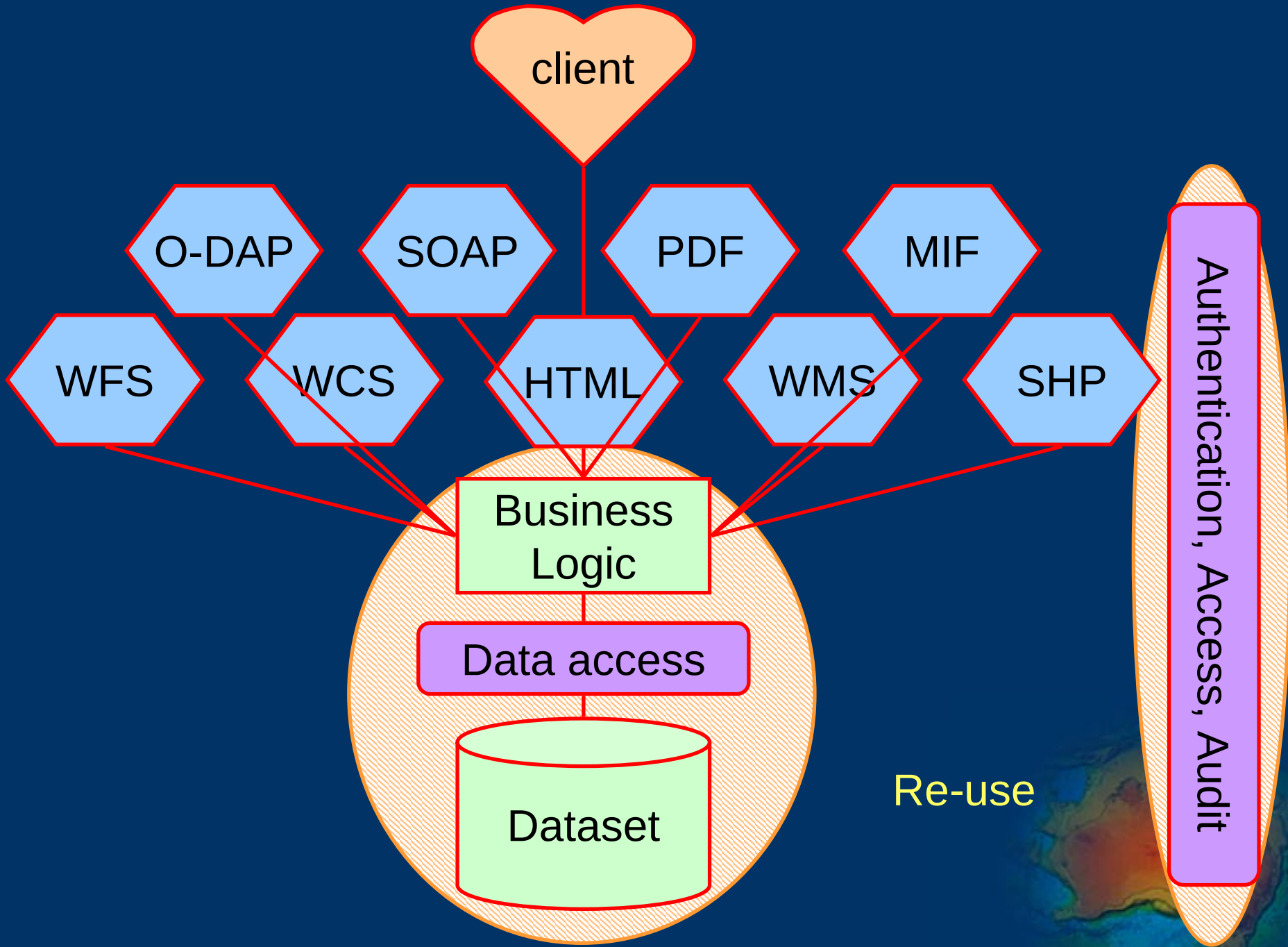
Introduction

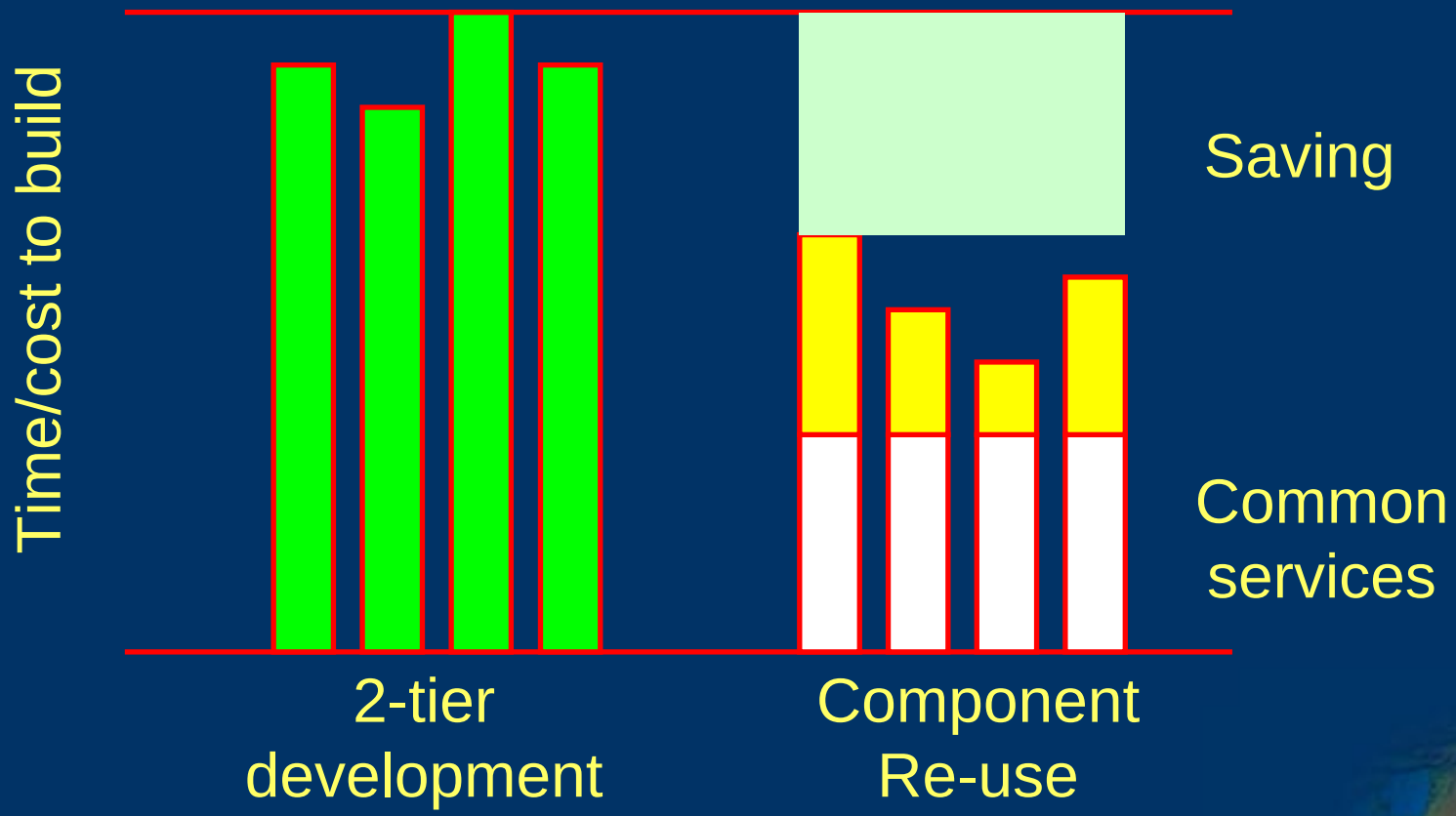
- Find the drivers to motivate each key stakeholder
  - Customise the message
- Involve your agency in pilot projects
  - Prove your data works too
  - Improve your capability and understanding
- Get your house in order
- Prepare for the usual questions
- Challenges



Drivers

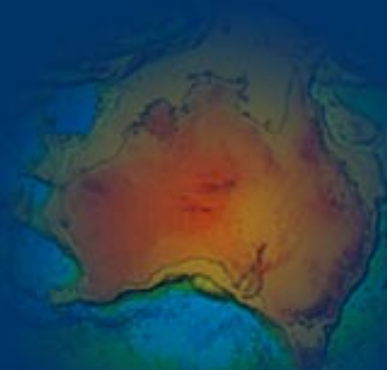

client
WMS
HTML
WFS
Business Logic
Data Access
Business Logic
Data Access
Business Logic
Data Access
Re-use
Dataset


client
O-DAP
SOAP
PDF
MIF
WFS
WCS
HTML
WMS
SHP
Business Logic
Data access
Dataset
Authentication, Access, Audit
Re-use


Time/cost to build
Saving
Common services
2-tier development
Component Re-use

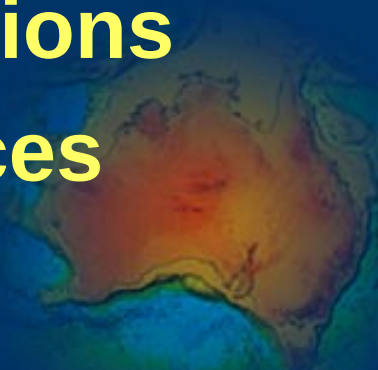
Benefits for clients

- **Single point of access to multiple datasets**
- **Ability to integrate your data with data from other sources**
  - **Own and 3rd party**
- **Ability to use your data in their software**
- **No need to manage a copy of your data**



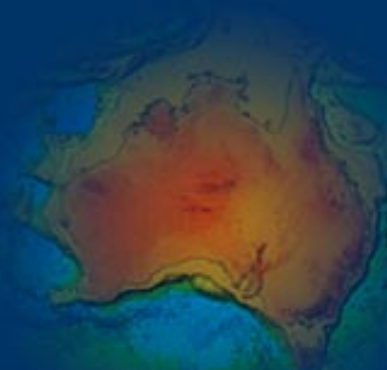
For your agency

- **Single system to maintain**
- **Longer return from investment in development**
- **Access to a toolkit of re-useable components**
- **Reduced cost (“time to market”)**
- **Publish data to external applications**
- **Include data from external sources**



Internal drivers

- Silo “special purpose” systems
  - Back-end infrastructure
  - Application
- Time and cost to implement new systems
- Maintenance and longevity
  - Effort vs. reward
- Change focus from “application development” to “information management”



External drivers

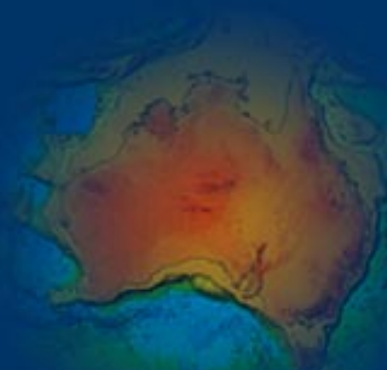
- **Customer base**
  - **Minerals Action Agenda/Prosser Report**
  - **Bushfire Inquiry**
- **Government policy**
  - **Spatial Data Pricing and Access**
  - **MAC report, AGIMO e-government**
- **Co-operative projects**
  - **CRC's, other departments, anti-terrorism**
  - **AusIndustry, NOO**

Pilot projects

The pilot project

- **“As the technology is new, let’s constrain the project risks by avoiding as many fringe problems as we can.”**

- **“Lots of people out there reckon this will never work, so let’s prove them wrong.”**

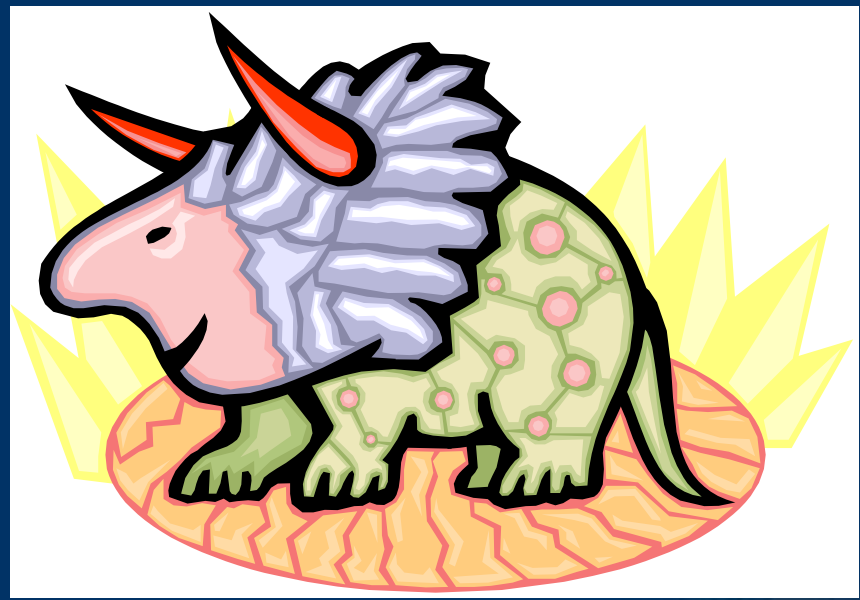


Features of the pilot project

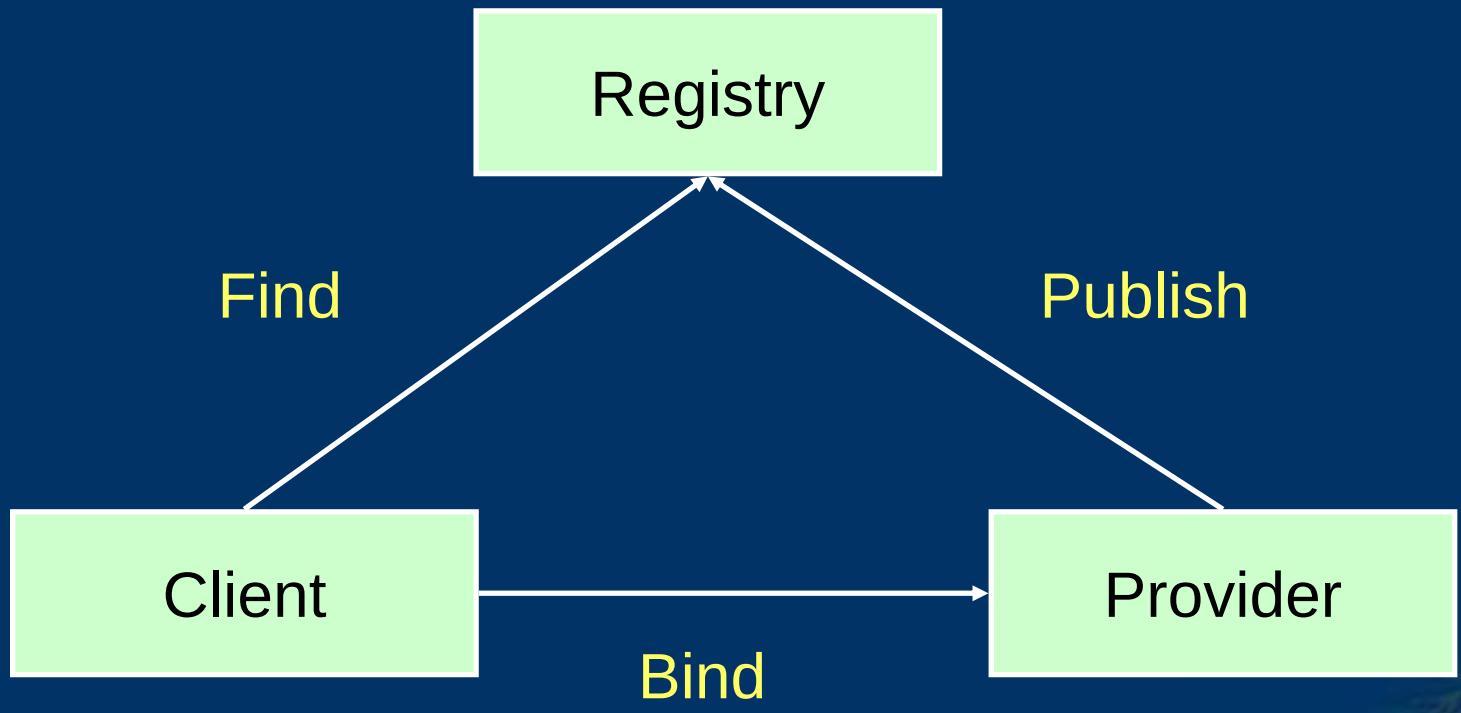
- The pilot has a champion
- Team members are all believers
- Data custodian is a believer
- Data are manageable
  - Small
  - Without controversy
- The demo works in “a straight line” through the system

Things the pilot avoids

- Clients who don't know what they want but won't be happy till they get it
  - User requirements
- Bad quality data
- Intellectual Property
- Security
- Performance issues
  - Availability
  - Response time
  - Bandwidth
- Dinosaur senior managers
- Dinosaur data custodians



Service Oriented Architecture

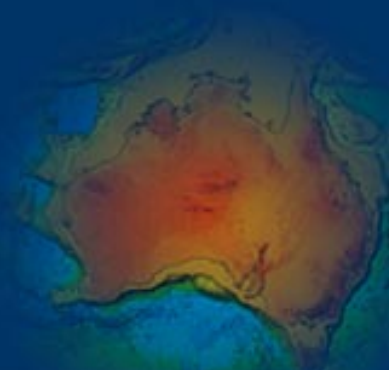


Get your house in order

Managing expectations

- **The good news**
  - **The Board loved the demo**
- **The bad news**
  - **They now want the same thing for the rest of our data …**

… by Friday



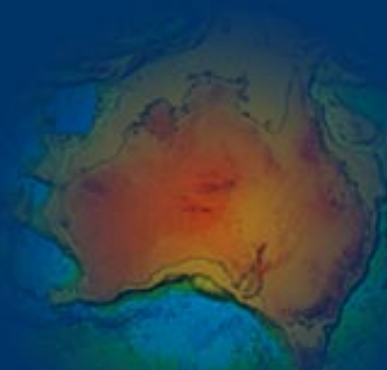
Which data are best for web services?

- **Quality controlled/assured**
  - **No longer annual snapshots**
- **Controlled vocabularies**
  - **Minimisation of free text**
  - **Ontologies and semantics**
- **Structured data models**
  - **Community acceptance**

… not every database is WS-ready!

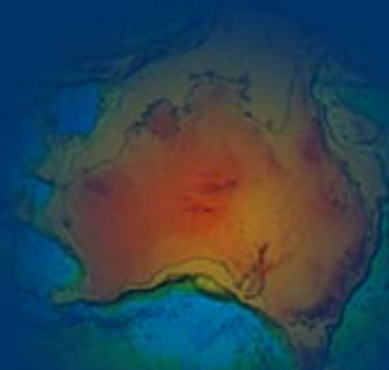
“I’ll just develop a web service in the same way as I have developed HTML-based database queries.”

- **Disruptive technology**
- **From the presentation web to the computation web**
- **You can’t keep adding sails to your tall ship and expect it to become a steamship**



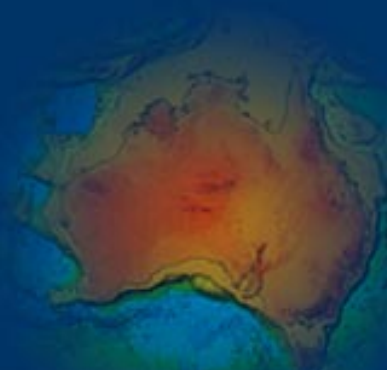
What's different?

- **The use cases aren't well defined**
- **An information model must be developed**
- **Flaws in the data can be accentuated**
- **Procedural software languages aren't suited to web services**
- **1-tier applications don't scale**



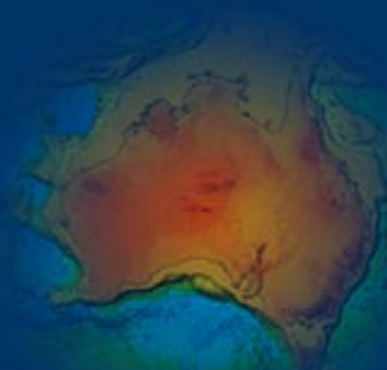
Fundamental requirements

- **Agile**
  - **Conform to evolving standards**
- **Performance to meet client expectations**
  - **Response time**
  - **Bandwidth**
  - **Data quality**

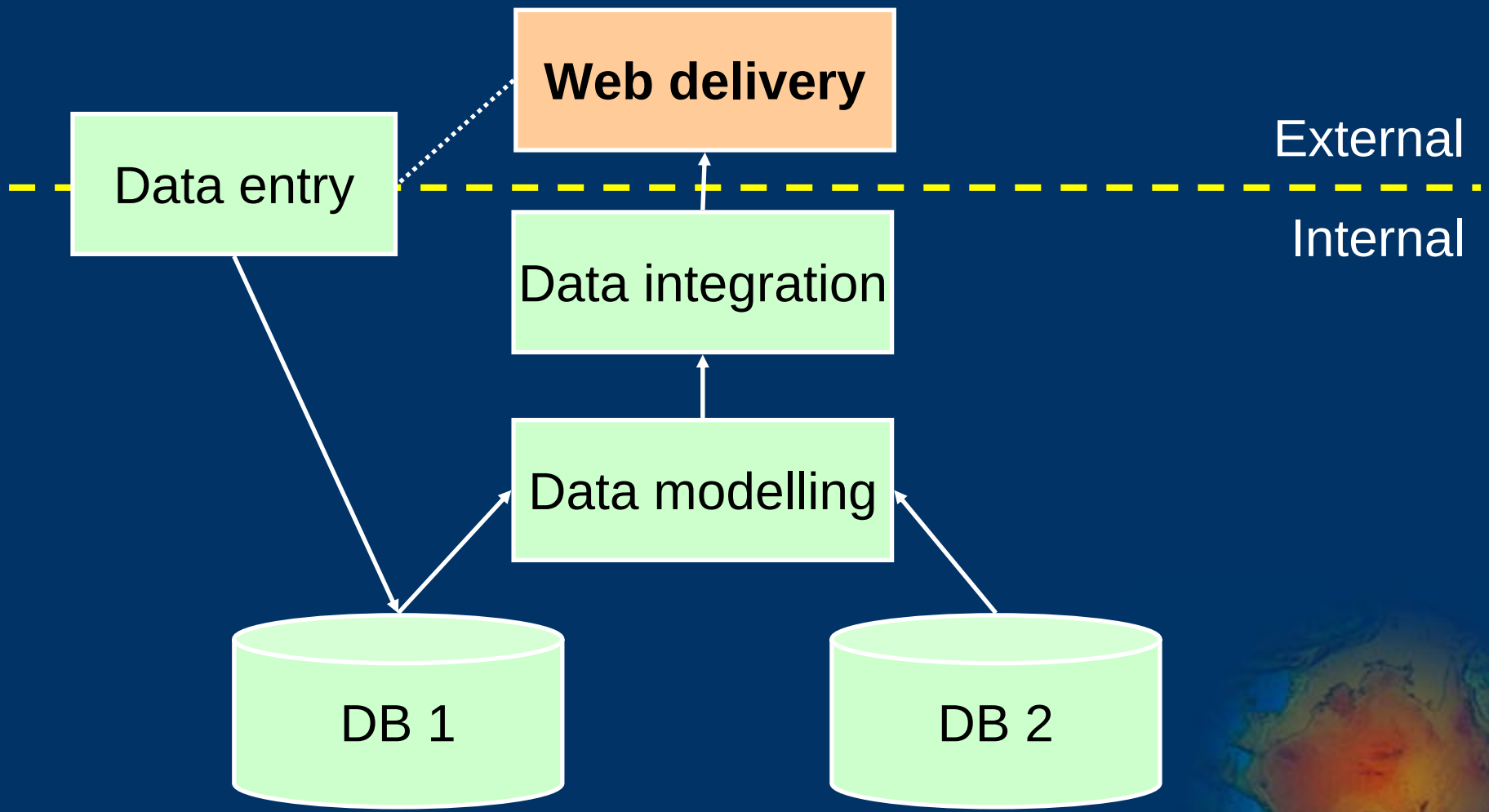


Fundamental requirements

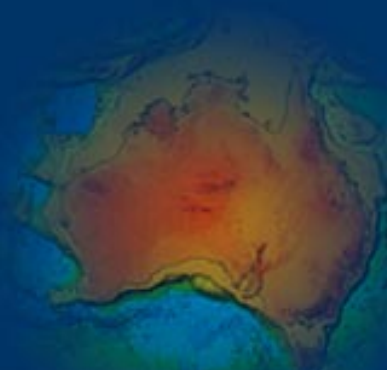
- **Stable**
  - **High availability**
- **Scalable**
  - **More and different data sources**
  - **More client functionality**
- **Secure**
  - **Accidental Denial-of-Service**
  - **Establish the user's trust**



Other projects

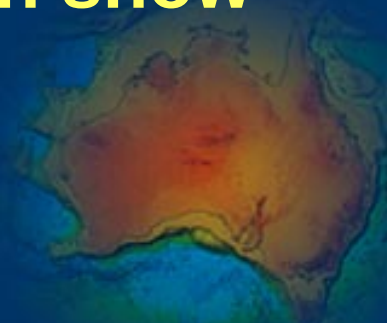


The usual questions



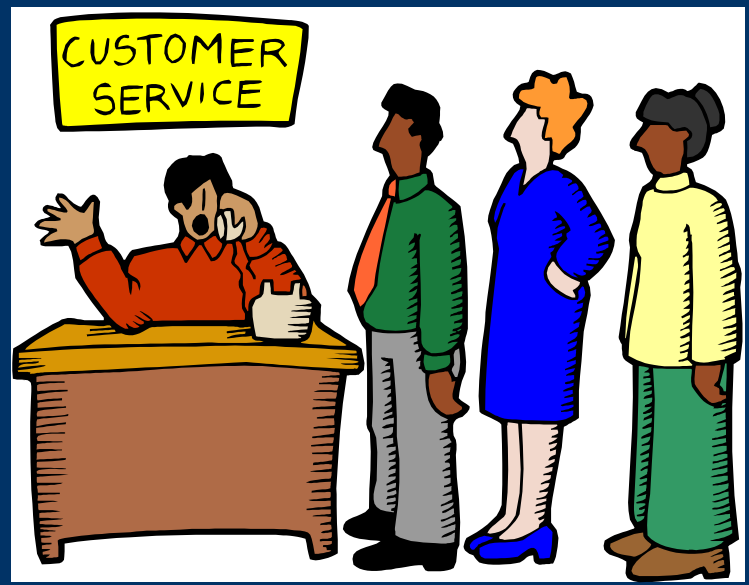
Who wants a Web Service?

- Web services are a technology not a business outcome.
- Clients want data to meet their business needs.
- Few will say “I want a web service”.
- But – Web Services are viewed as the most important technology for delivering data based services to clients for the foreseeable future.
- This is a case where organisations can show leadership!



My clients aren't demanding this!

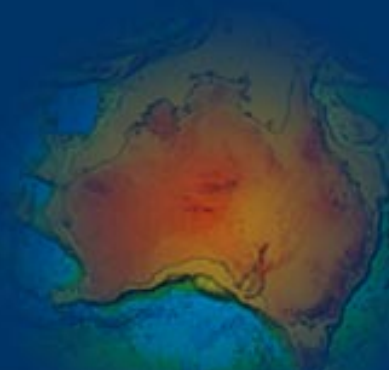
- **"I want the latest versions of your data."**
- **"I don't want to manage my copy of your data."**
- **"I want to integrate your data with my own data."**
- **"I want to view your data using software X."**



Challenges

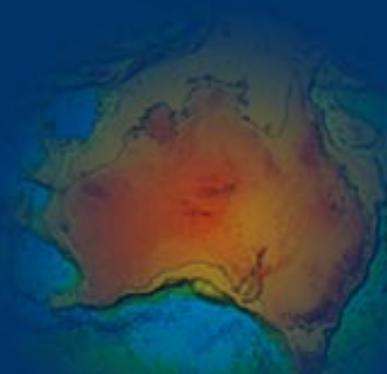
Future challenges

- Evolving standards
- Intellectual Property issues
- Authentication
- Security
- Transactions (data entry)
- Community data models
  - Taxonomies
  - Ontologies



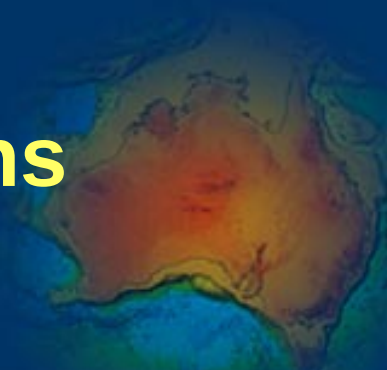
Future challenges

- Governance
  - Of each service
  - Of the registry
- Engage your key clients
- Develop SLA’s
  - Their business is now reliant on you
  - Quality of service
- What if your pricing policy changes?
- What is your BCP?



Summary

- Web services are just another channel
- Develop an agile system
  - chase the moving target
- Prepare an “elevator pitch”
- Different drivers motivate different stakeholders
- Change management is crucial
- Manage the hype and expectations



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