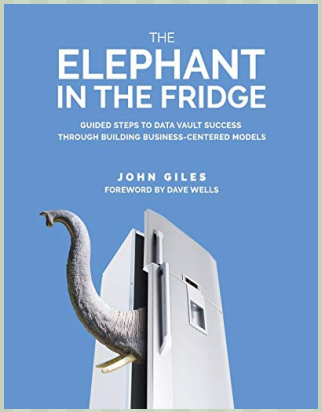
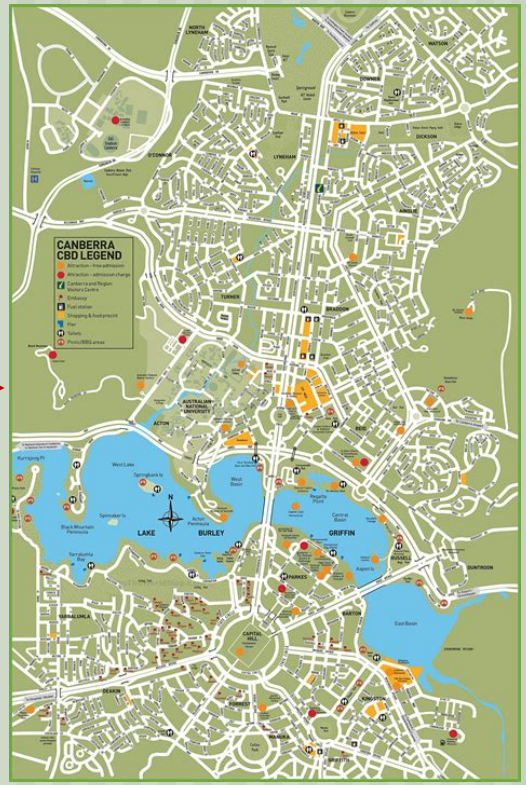
Country Endeavours

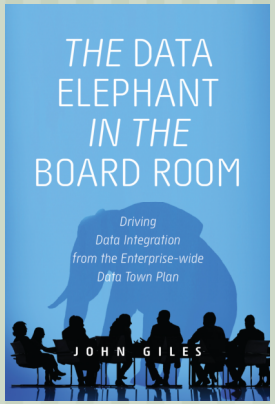
"Creative Solutions for Difficult Problems"

Town Plans, Data Town Plans (and Data Vault)

It's all about "the business"







(John Giles)

1. The Think-Big versus Think-Small flip/flop *(or was that just a "flop"?)*

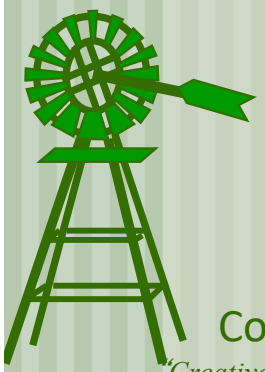
And I'm *not* talking about "management consultants" who advise:

- **Centralisation (for economies of scale, standardisation …)**
- **Decentralisation (for autonomy/delegation, adaptability/agility, …)**

But who then flip/flop between approaches.

Just a few snippets of think-big, think-small IT history

- Data sharing:
  - 1970s: Small - Largely siloed applications
  - 1980s: Big - 1980s “corporate databases”
- Methodologies
  - 1980s, 90s: Big - Waterfall “Big Design Up Front”
  - 2000s: Small - Agile
- Data Warehousing
  - Early 1990s: Big - Enterprise Data Warehouse (Bill Inmon)
  - Mid 1990s: Small - Dimensional, Marts (Ralph Kimball)
- Data architecture / frameworks???
  - 2000s: Big - Data Fabric (centralised)
  - 2019, 2020s: Small - Data Mesh (decentralised)



… so what's happening (in a nutshell)?

- "Big" thinking costing too much, delivered too late
- "Small" thinking delivers value fast but its silos can create on-going management, integration issues
- Data Vault
  - Good: Enterprise-level integration
  - (Potentially) Bad if build "small" , one source system at a time ➔

2. Introducing a (Data Vault) problem

Warnings from Dan's 2016 blog

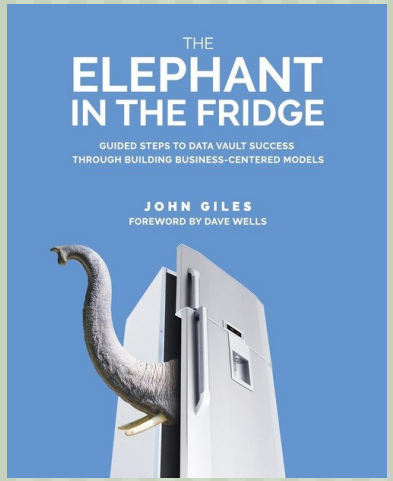
"If you build a **source system Data Vault Model,** the value of the solution drops to one tenth of one percent overall*."*

"Ontologies are a very very important asset to the corporation – if built at the enterprise level, ***you must focus on ontologies*** while you are building the Data Vault solution, or the full value … cannot be realized"

"Data Vault modeling was, is and always will be ***about the business*** … … if the Data Vault you have in place today is not currently about the ***business***, then unfortunately you've hired the wrong people …"

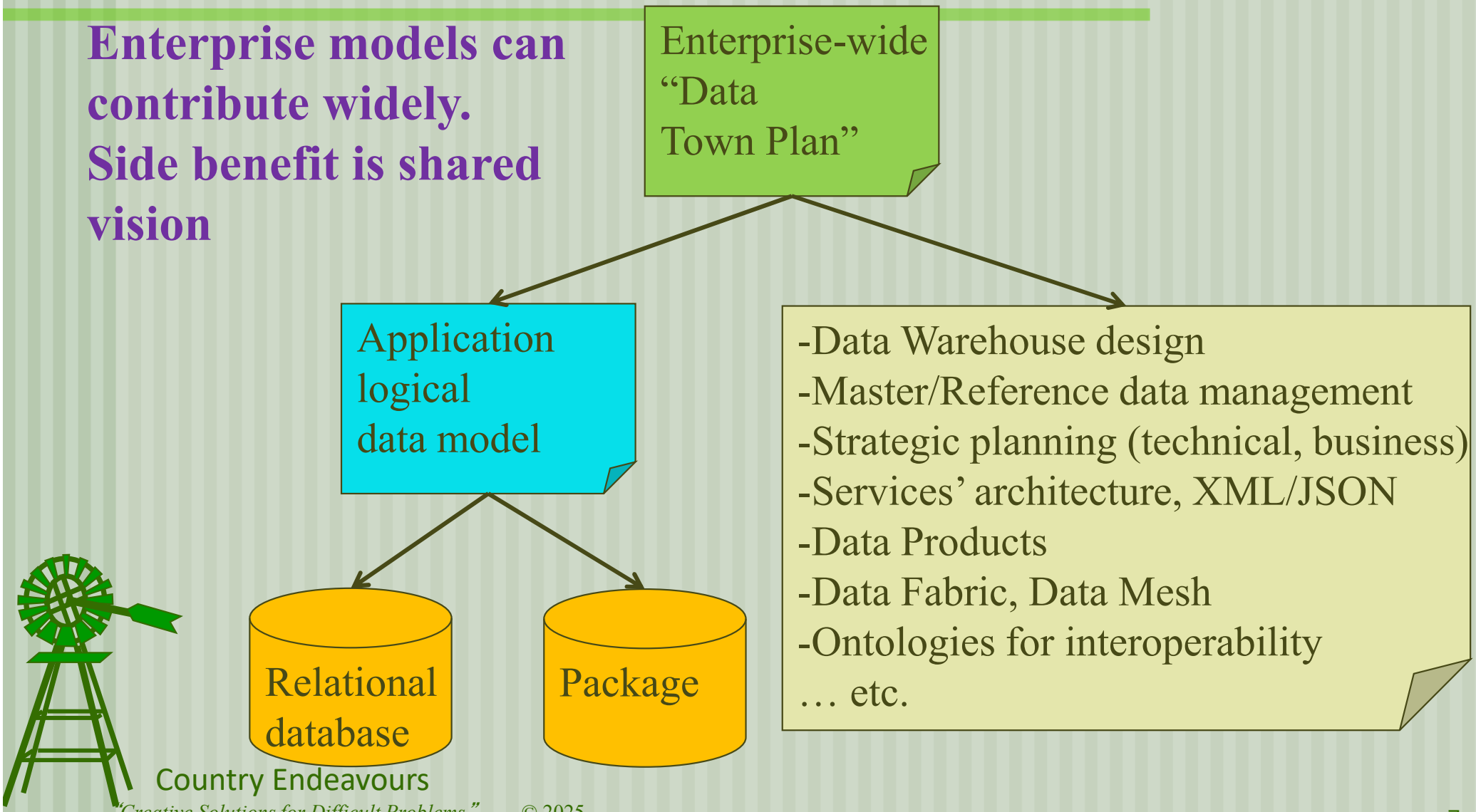
Responding to the Data Vault challenge

- The Elephant in the Fridge:
  - ➢ Light-weight “enterprise” foundation
    - … for people with good data modelling experience, familiarity with patterns
  - ➢ “How-to” build your DV on top
- ***But*** some DV people:
  - ➢ Doubted feasible in timely manner
  - ➢ Wanted more detail, for novices
  - ➢ … and wanted more than DV ➔

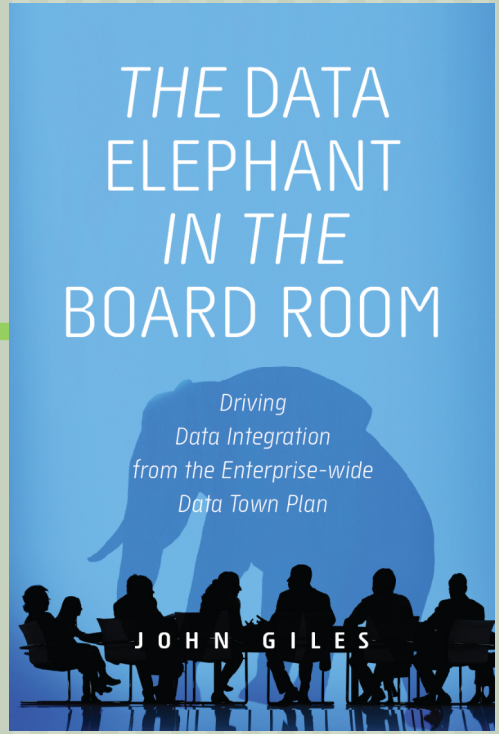


… and some people wanted a ***lot*** more than Data Vault

Enterprise models can contribute widely.
Side benefit is shared vision

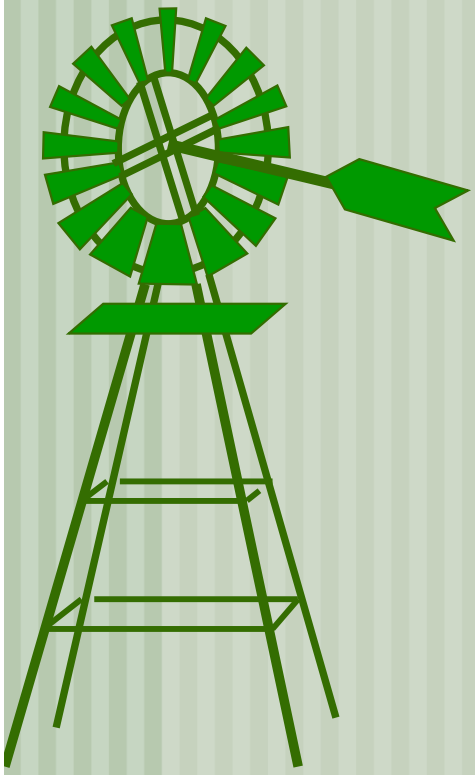


A solution?



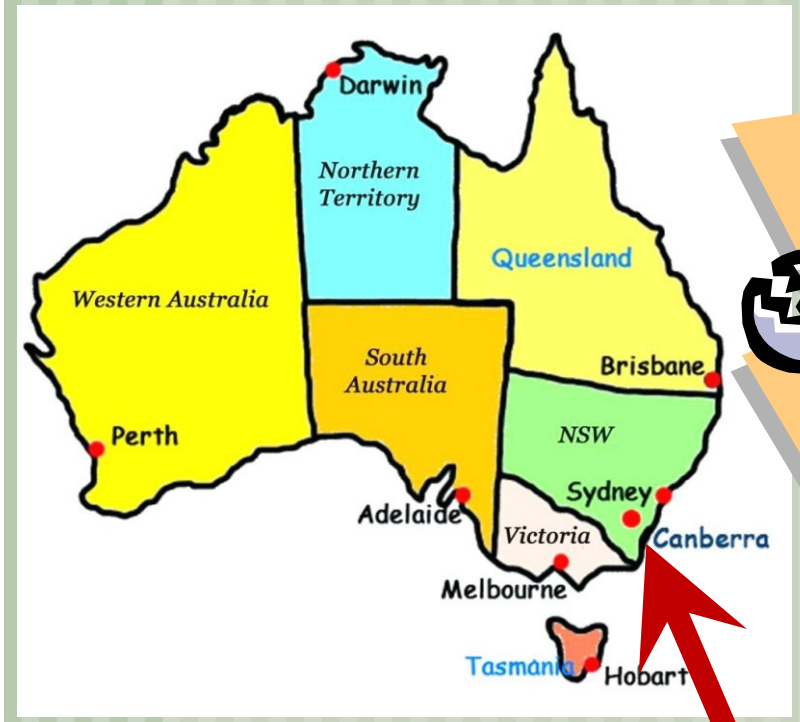
- Supplement to *The Elephant in the Fridge* for less-technical
- Aimed at building bridge between business and technical people
- Drive IT solution delivery across wide spectrum
- Facilitate delivery of value in weeks, not years

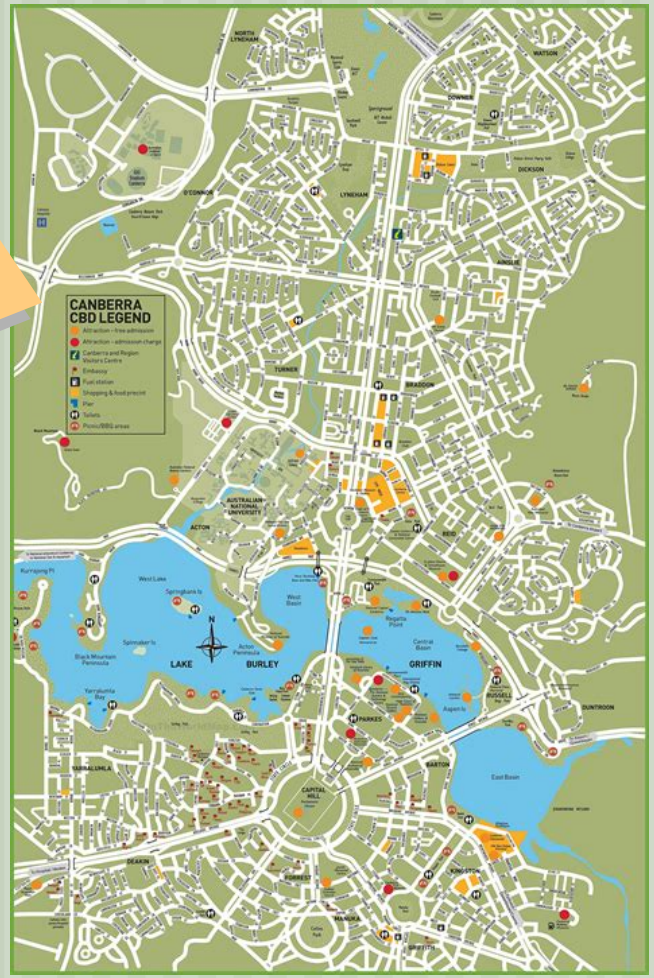
… and introduces "Town Plan" metaphor ➔



3. Let's take a sneak peek at "Town Planning"

Good builders, good tools … but where's the town plan?

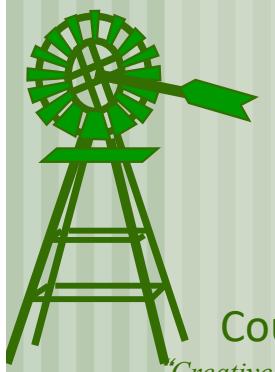




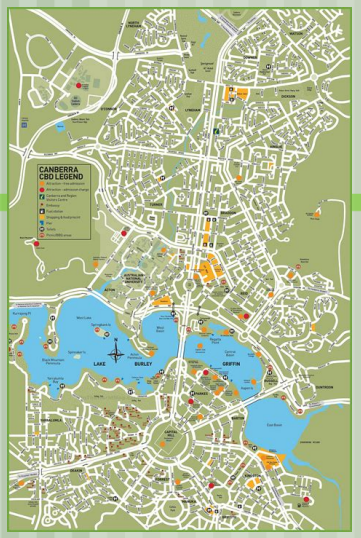
Some styles of town planning

- Anarchy: Every does what they want. Now.
  - … but pity about the law and order, waste …
- Dictatorial: Central planning
  - … but nothing can even start until planning is finished
- Smart: Pattern-based (Christopher Alexander)
  1. Collect patterns for hospitals, universities …
  2. Arrange patterns to suit *your* city
  3. Pick one area to start with, and develop details
  4. Build!
  5. Iterate over 3 & 4, again and again

… now compare with IT (& data) styles!



So what might a town plan look like?



Customer

signs

pays

Employee

performs

Agreement

Service contract

creates

Account

Work

Install meter

Read meter

involves

usage charged to

assigned to

Asset

Water meter

sited at

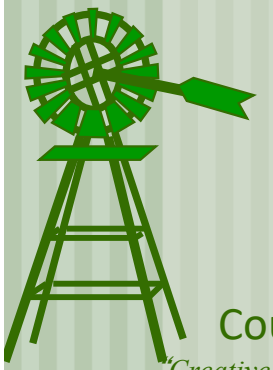
Location

occurs at

No!!!

A "*data*" town plan

(for a water utility)



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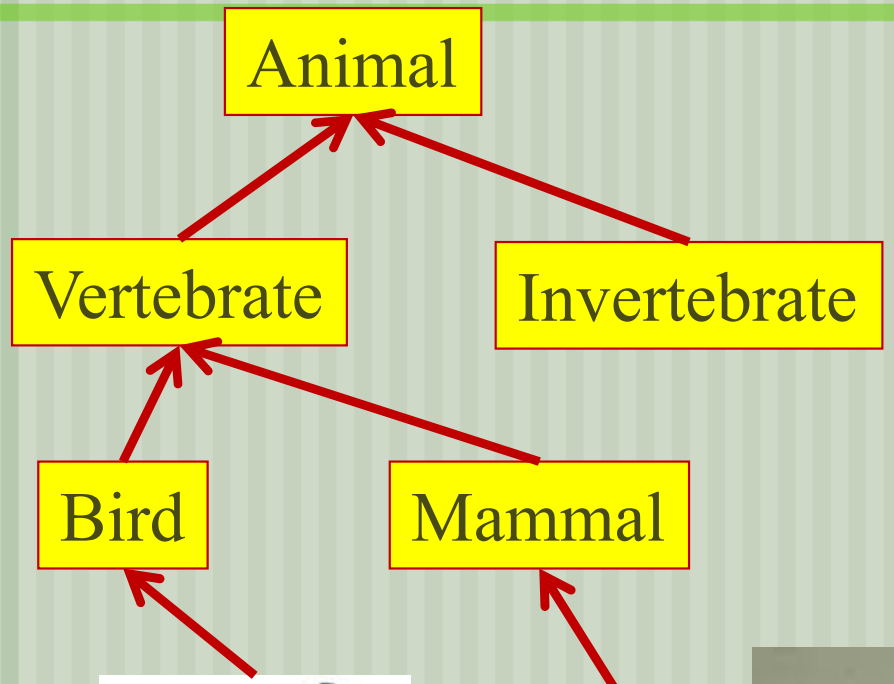
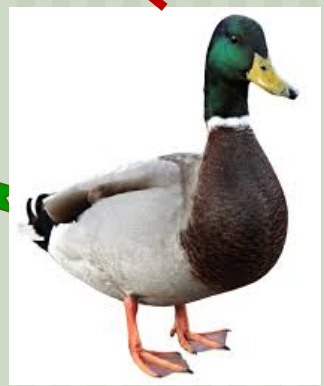
Some more detail: Introducing "Taxonomies"



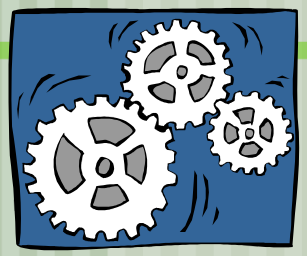
Classify something that:

- Has webbed feet
- Has a bill
- Lays eggs
- Swims

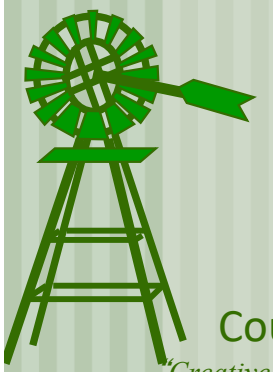
It's a ???



Business "Role" drill-down: Health Practitioners



sub-classification
0..*
0..1
RoleType
roleTypeCode
roleTypeName
roleTypeDescription
domain identification
0..*
1
RoleStatusType
roleStatusTypeCode
roleStatusTypeName
roleStatusTypeDescription
Party::**Party**
nameDisplayString
effectivePeriod
fulfilment
1
1 classification
1
0..*
0..*
1
classification
participant 1 as role
participant 2 as role
0..*
0..*
1
Role
effectivePeriod
status recording
1
0..*
0..*
PartyRelationships::**PartyRoleInterrelationship**
effectivePeriod
RoleStatus
effectivePeriod
HealthPractitioner
Doctor
Dentist
NursingPractitioner
RegisteredTrainingOrganisation
Complainant
Chiropractor
Optometrist
Nurse
Employee
(etc)
Midwife
CareRecipient



Some boring but important detail

Entity descriptions

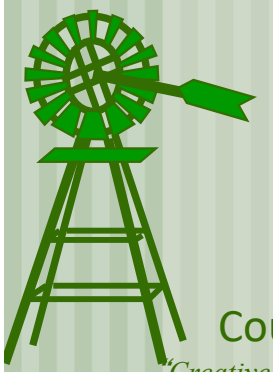
Entity Name	**Water Meter**
Synonym(s)	(none)
Taxonomy	Water Meter is a subtype of Asset
Description	Each instance in this class represents a physical device used to measure the volume of water passing through the meter. This can be used, for example, to record the amount of water used by a household for quarterly billing purposes.

Attribute descriptions

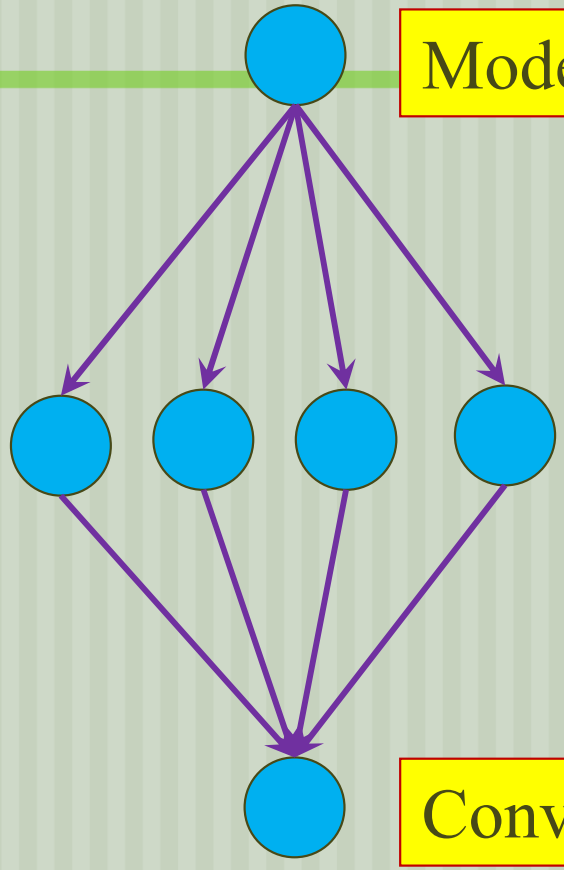
Attribute Name	**Attribute Description**
Meter Number	Each meter is physically stamped with a meter number (such as ABC-12345) that is used to uniquely identify the device when a reading istaken.
Make	Code to represent that manufacturer of the water meter e.g. "ACME".
Model	Code to represent that model of the water meter e.g. "PD-20" for a Positive Displacement 20 mm water meter.

Relationship descriptions

Relationship description	**Participant 1**	**Optionality**	**Verb phrase**	**Cardinality**	**Participant 2**
Each Water Meter must be sited at one Location.	Water Meter	Mandatory	be sited at	One	Location
Each Location may be the site for many Water Meters	Location	Optional	be site for	Many	Water Meter



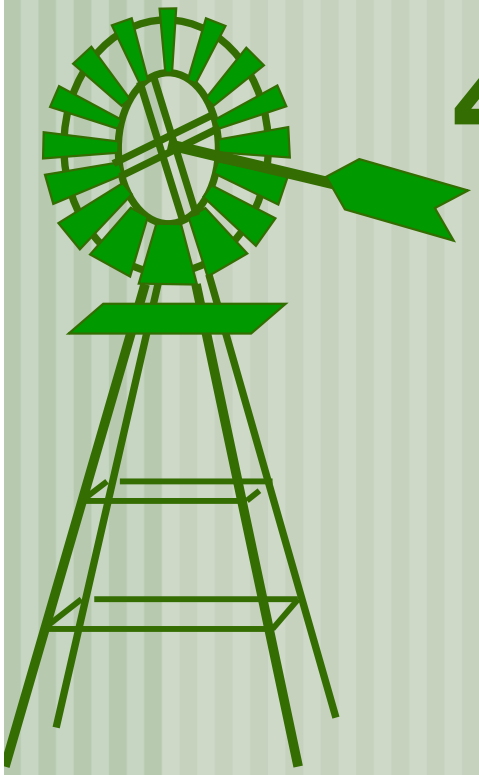
David Hay's drill-down



Model-on-a-Page (Overview)

Divergent (Semantic)

Convergent (Essential)



4. Some stories about Data Town Plans

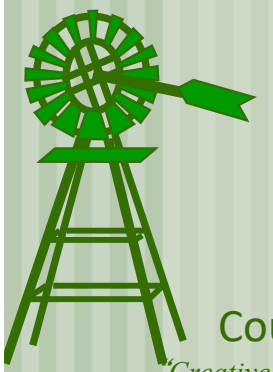
When you *need* a shared view

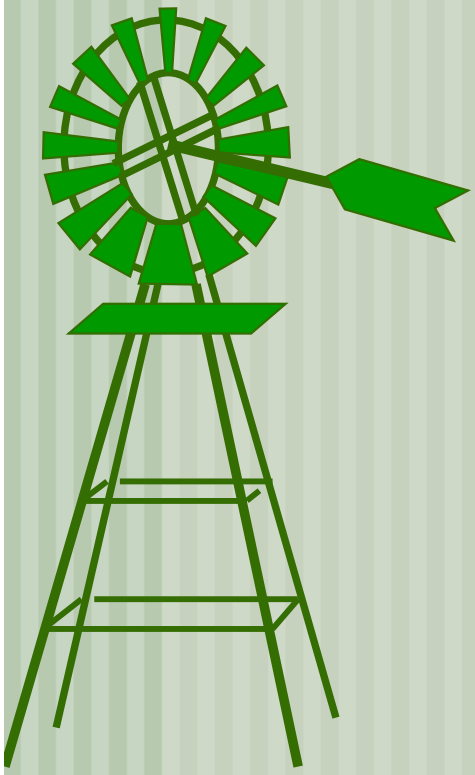
Black Saturday (2009)

- What's that vehicle?
- Royal commission
- Some of the lessons learned
  - ➢ Shared language (Esperanto?) between people
  - ➢ Same language used in IT
    (but it starts with the business!)
  - ➢ but what's my "enterprise"➔

Some real-life Data Town Plan stories

- Telecommunications (years to weeks)
- Bank – a “sufficient” model in a day?!
- Merging two organisations?
  (or was that 83?!)





5. Closing comments

A threat: Project-centric funding

- Each discrete, siloed project may be cost-justified, but …
  - Sum of parts may not integrate
  - Contrast with “whole farm planning”
    - One unified end state
    - Each project contributes to whole
    - Some expenditure is for “infrastructure” or business as usual rather than specific deliverables

A threat:
Missing "town plan", or hoping for "accidental integration"

- Building without a "town plan"
  - Best tradespeople, tools not enough
- … but some dream of "auto-magical" plan i.e. build in silos and hope for "accidental integration"
  - Silos can be
    - Business units,
    - Business processes,
    - Source systems, …

- Even a rough ("data") town plan would be better than none!

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A threat:
Not considering future flexibility

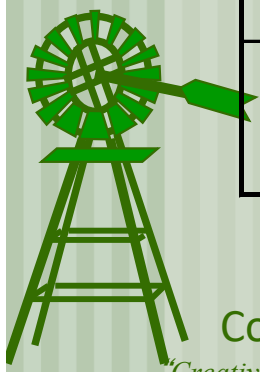
Many folk see the world through the eyes of today's IT systems.

We need visionaries who see beyond the constraints of today's IT systems

The "T-model": Don't boil the ocean

- Mile-wide, inch-deep (touch points at least)
- Drill-down only where required
- Iterate within each project, & across projects

	Account	Agreement	Document	Party/Role	(etc.)
High-level logical subject areas	☑	☑	☑	☑	☑
Standard logical assembly patterns		☑		☑	
Refined logical assembly patterns		☑			



Steps to Data Vault success

Background collection

Target: What's the business want?

Sources of information: SMEs, Business processes, Glossaries ...

Aids: Data model patterns

Task #1 (top-down):
*Define how the **business** sees their data*

Enterprise (data) model
[aka Enterprise ontology, plus taxonomy]

Task #2 (top-down):
*Design DV based on **business** view*

Data Vault model

Top-down design (based on enterprise concepts view)

- Hub – business-centric design
- Link – business-centric design
- Satellite – business-centric design

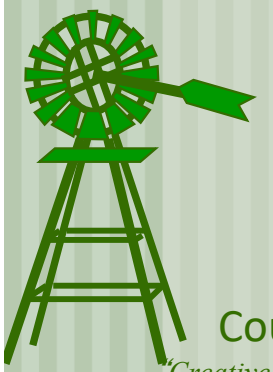
Bottom-up design (based on source system physical structures)

- ~~Hub – source-system-centric design~~
- Link – source-system-centric design
- Satellite – source-system-centric design

Task #4 (meeting of the minds):
*Define business rules for **gap filling***

Task #3 (bottom-up):
***Source**-to-DV mapping*

Operational source systems



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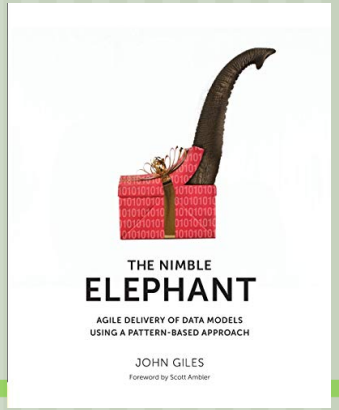
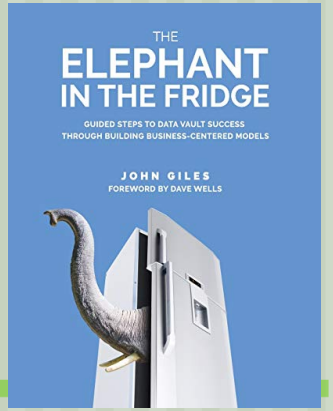
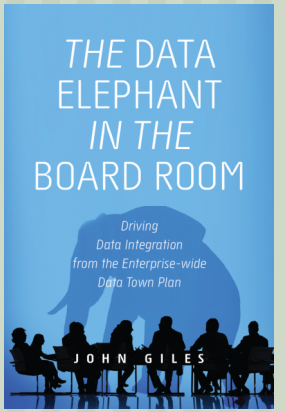
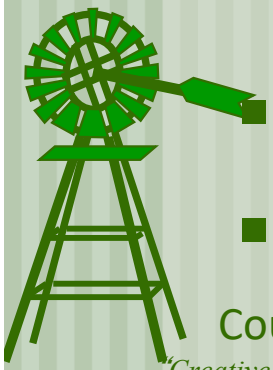
In closing







- Reading?
  - My trilogy on TDAN.com (search for “top down”)
  - Data Vault reference books
  - Data model patterns: David Hay, Len Silverston …
  - Agility in modelling: *The Nimble Elephant*
  - Business-centric DV: *The Elephant in the Fridge*
  - Data Town Plans for (much more) than DV: *The Data Elephant in the Board Room*
- Thank you
- Questions?



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