Agile Data Warehouse
The Final Frontier
Captain, we need more dimensions!

1. Spectre of the Data
2. The Prime Directive
3. Captain, we need more dimensions!
4. The United Federation of Planets
Spectre of the Data
Data Warehouse Project

Waterfall
- Detailed Analysis
- Large Development
- Large Deploy
- Long Feedback loop
- Extensive changes
- Many Defects

Incremental
- In Segments
- Detailed Analysis
- Development
- Deploy
- Long Feedback loop
- Considerable changes
- Rework
- Defects

Protegra™
Where is she?
Where is the true Agility?

- Iterations not Increments
- Brutal Visibility/Visualization
- Short Feedback loops
- Just enough requirements
Our Mission

• “Data... the Final Frontier. These are the continuing voyages of the starship *Agile*. Her on-going mission: to explore strange new projects, to seek out new value and new clients, to iteratively go where no projects have gone before.”
The Prime Directive
Regardless of what we discover, we understand and truly believe that everyone did the best job they could, given what they knew at the time, their skills and abilities, the resources available, and the situation at hand.
GENERAL ORDER NUMBER ONE

NO STARSHIP MAY INTERFERE WITH THE NORMAL DEVELOPMENT OF ANY ALIEN LIFE OR SOCIETY

Protegra™
The Prime Directive

• Is a vision or philosophy that binds the actions of Starfleet

• Can an Data Warehouse project truly be Agile without a Vision of either the Business Domain or Data Domain?
  – Essentially it is just an Ad Hoc Data Warehouse. Separate components that may fit together.
Agile Enterprise Data Model

• Confirms the major entities and the relationships between them
  – 30-50 entities
• Confirms the Business and Data Domains
• Starts the definition of a Data Model that will be refined over time
  – Completed in 1 – 4 weeks
An Agile Enterprise Data Model

- Is just enough to understand the domain so that the iterations can proceed
- Is not mapping all the attributes
- Is not BDUF
- Is a User Story Map for a Data Warehouse
- Contains placeholders for refinement
Agile Enterprise Data Model is a Data Map
Agile Enterprise Data Model

- Is
  - Our vision
  - Our User Story Map
  - Guides our solution
  - Our Prime Directive
Captain, we need more dimensions!
His pattern indicates 2 dimensional thinking
Multi-Dimensional Data Analysis

• Is required to:
  – Provide a visual data backlog
  – Provide a visualization of the data requirements across dimensions
  – Plan iterations
  – Lead into the creation of FACT tables and Cubes in a Data Warehouse
• For an Agile Data Warehouse we must think and visualize in more dimensions

• We must create a User Story Map for Data Requirements that is both intuitive and informing
  – Primarily for clients!
  – They should be able to look at it and understand what is currently being worked on
We need a bigger metaphor
Bill Payment Hex

• Can have up to six dimensions of how payments are sliced, diced, and aggregated
• Concentric hexes allow for the planning of iterations
UNITED FEDERATION OF PLANETS
Cardassian Union
Be careful how you spell that…

FIND THE DIFFERENCE

KARDASHIAN vs CARDASSIAN
Data Modeling Union

- For too long the Data Modelers have not been integrated with Software Developers
- Data Modelers have been like the Cardassian Union, not integrated with the Federation
Issues

• This has led to:
  – Holy wars
  – Each side expecting the other to follow their schedule
  – Lack of communication and collaboration

• Data Modelers need to join the ‘United Federation of Projects’
Tools of the trade
Version Control
Version Control

• If you don’t control versions, they will control you

• Data Models must become integrated with the source control of the project
  – In the same repository of project trunk and branches
Our Version Experience

• We are using Subversion
• We are using Oracle Data Modeler as our Modeling tool.
  – It has very good integration with Subversion
  – Our DBMS was SQL Server
• Unlike other modeling tools, the data model was able to be integrated in Subversion with the rest of the project
Shameless plug

- Free
- Subversion Integration
- Supports Logical, Relational, and Dimensional data models
- Since it is free, the data models can be shared and refined by all 60+ members of the development team
Adaptability
Change Tolerant Data Model

• Only add tables and columns when they are absolutely required

• Leverage Data Domains so that attributes are created consistently and can be changed in unison
Change Tolerant Data Model

• Don’t model the data according to the application’s Object Model
• Don’t model the data according to source systems
• These items will change more frequently than the actual data structure
• Your Data Model and Object Model should be different!
Re-Factoring – Read It
Create the plan

PLANNING
No challenge is too great if you plan ahead. And have pointy ears.

Protegra ™
Plan for:

- Versioning – Major and minor
- Adaptability – How the data model will adapt to major changes
- Refinement – How will iterations be planned and executed
- Re-Factoring – How will the data design be re-factored
Assimilate
Assimilate

• Assimilate Version Control, Adaptability, Refinement, and Re-Factoring into core project activities
  – Stand ups
  – Continuous Integration
  – Check outs and Check Ins

• Make them part of the standard activities – not something on the side
Summary

• Star Trek is far superior to Star Wars
• Use an Agile Enterprise Data Model to provide the vision
• Strive for Iterations over Increments
• Use Data Hexes to provide brutal visibility and Iteration planning on
• Plan and Integrate processes for Versioning, Adaptability, Refinement, and Re-Factoring
What doesn’t change?
Leadership
Leadership

• “If you want to build a ship, don't drum up people together to collect wood and don't assign them tasks and work, but rather teach them to long for the endless immensity of the sea.” ~ Antoine de Saint-Exupery
“[A goalie's] job is to stop pucks, ... Well, yeah, that's part of it. But you know what else it is? ... You're trying to deliver a message to your team that things are OK back here. This end of the ice is pretty well cared for. You take it now and go. Go! Feel the freedom you need in order to be that dynamic, creative, offensive player and go out and score. ... That was my job. And it was to try to deliver a feeling.” ~ Ken Dryden