Data Integration Using Universal Data Models and Effective Human Dynamics

Presented by Len Silverston, Universal Data Models, LLC
Purpose:
Share ways to integrate data

Agenda:
- Universal Data Models and Patterns
- Human dynamics principles
- Carnival Cruise Lines Case Study
What are Universal Data Models and Universal Patterns?

Universal Data Models:
- Common, re-usable, holistic, data model constructs
- Standard data models
- Industry data models

Universal Patterns:
- Templates and alternatives for common themes in data modeling
Universal Patterns and Universal Data Models

UNIVERSAL PATTERNS
- Common Themes Across Models

UNIVERSAL DATA MODELS
- Application of patterns plus other common constructs
What are Standard Universal Data Models?

The common data model constructs applicable to most enterprises:

People and organizations
Product
Order
Work Effort
Shipment
Invoicing
Accounting and Budgeting
E-Commerce
What Are Standard Universal Data Models?

Sample – Person
What Are Universal Data Models for Industries?

Extends the common UDMs to include industry constructs

- Manufacturing
- Health care
- Insurance
- Banking, Financial Services
- Telecommunications
- Professional services
- Travel
What Are Universal Data Models?

Sample – Industry model – Health Care
Examples of Universal Patterns

• Roles
• Statuses
• Classifications
• Hierarchies
• Business rules
• Contact information
Specific Versus Generalized

- Level 1 Pattern
- Level 2 Pattern
- Level 3 Pattern
- Level 4 Pattern

More specific — More generalized

More understandable — More flexible
Classification Specific - Pattern

ENTITY/3
- ENTITY ID
  - NAME
  - DESCRIPTION
  - TYPE1 ID (FK)
  - TYPE2 ID (FK)
  - TYPE3 ID (FK)
  - TYPE4 ID (FK)
  - TYPE5 ID (FK)

TYPE1
- TYPE1 ID
- NAME

TYPE2
- TYPE2 ID
- NAME

TYPE3
- TYPE3 ID
- NAME

TYPE4
- TYPE4 ID
- NAME

TYPE5
- TYPE5 ID
- NAME
Classification Specific - Example

**PRODUCT**
- **PRODUCT ID**
- **NAME**
- **COMMENTS**
- **DESCRIPTION**
- **PRODUCT FAMILY ID (FK)**
- **PRODUCT TYPE ID (FK)**
- **PRODUCT MODEL ID (FK)**
- **PRODUCT MAKE ID (FK)**
- **PRODUCT CLASSIFICATION ID (FK)**

**PRODUCT FAMILY**
- **PRODUCT FAMILY ID**
- **NAME**

**PRODUCT TYPE**
- **PRODUCT TYPE ID**
- **NAME**

**PRODUCT MODEL**
- **PRODUCT MODEL ID**
- **NAME**

**PRODUCT MAKE**
- **PRODUCT MAKE ID**
- **NAME**

**PRODUCT CLASSIFICATION**
- **PRODUCT CLASSIFICATION ID**
- **NAME**
Classification Generalized - Example

Product xyz is a good

Product xyz is commercial

Product xyz is for office use

<table>
<thead>
<tr>
<th>PRODUCT CATEGORY CLASSIFICATION</th>
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<tbody>
<tr>
<td>PRODUCT ID (FK)</td>
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<tr>
<td>PRODUCT CATEGORY ID (FK)</td>
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<td>PRIMARY IND</td>
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<td>COMMENTS</td>
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</table>

PRODUCT CATEGORY CLASSIFICATION

Good
Service
Solution

Commercial
Residential

Household
office
car

PRODUCT TYPE

Product Type

Product Line

Product Family

PRODUCT CATEGORY

PRODUCT CATEGORY ID

NAME

PRODUCT CATEGORY TYPE ID (FK)

PRODUCT CATEGORY TYPE

PRODUCT CATEGORY TYPE ID

NAME
How to Use Universal Data Models and Universal Patterns

- Jump-start efforts
- Customize
- Quality assurance
- Third party source
UDM Case Studies

- Leading telecommunications manufacturers
- World wide travel organizations
- Wall street leaders
- Software giants
- Global hardware manufacturers
- Major distributors
- Health insurance organizations
- Financial institutions
- Major manufacturers
- Government agencies
- World wide engineering services
- Financial securities companies
What is **Really** Needed for Data Integration?

- **Commitment?**
- **Resources?**
- **Technology?**
- **Tools?**
- **Expertise?**
- **Methodologies?**
A Big Issue: Data Mining!
Inevitable Scenarios

• Data “Mine”ing
• “I am right”
• Enterprise versus project
• Trouble getting involvement and commitment?
• IT and business out of alignment!
• Politics!
• Resistance to change
Key Human Dynamics Principles

Understand motivations
Have a clear, compelling, common vision
Integration requires trust
Appreciate perspectives versus being right
Understand Motivations

“Unhappiness is in not knowing what we want and killing ourselves to get it.”
Don Herold, author
## Why not model column 6 in Zachman Framework?

### ENTERPRISE ARCHITECTURE - A FRAMEWORK™

<table>
<thead>
<tr>
<th>SCOPE (CONTEXTUAL)</th>
<th>DATA</th>
<th>What</th>
<th>FUNCTION</th>
<th>How</th>
<th>NETWORK</th>
<th>Where</th>
<th>PEOPLE</th>
<th>Who</th>
<th>TIME</th>
<th>When</th>
<th>MOTIVATION</th>
<th>Why</th>
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<tr>
<td>Planner</td>
<td>List of Things Important to the Business</td>
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## Motivation Model

**Person Name**

<table>
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<th>What does this person want?</th>
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<tbody>
<tr>
<td>How will your program/project help you?</td>
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</table>
Motivation Model

**NAME AND ROLE OF PERSON**

What does this person want? (from what perspective)

How will your program/project help them?  How is your program/project an obstacle?

**NAME AND ROLE OF PERSON**

What does this person want? (from what perspective)

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**NAME AND ROLE OF PERSON**

What does this person want? (from what perspective)

How will your program/project help them?  How is your program/project an obstacle?

**YOU**

YOUR PROGRAM/PROJECT

What do you want? (from what perspective)

How will your program/project help you?  How is your program/project an obstacle to you?

**NAME AND ROLE OF PERSON**

What does this person want? (from what perspective)

How will your program/project help them?  How is your program/project an obstacle?
Have a Clear, Compelling, Common Purpose and Vision
Clear

Vision
Mission
Values
Goals
Benefit
Plan
Compelling

How to create a message that gets through?
Common

Data Management Mission

Business Mission
Integration Requires Trust (IRT)

*Cordial hypocrisy versus honest assessment*

"Integrity" derived from "To Integrate"
Core Elements of Trust

• Character

• Competence

From “The Speed Of Trust” By Stephen M. R. Covey, Free Press, 2006
Keys to Trust

Earning it
Caring about others
Vulnerability/openness
Appreciate Perspectives Versus Being Right

“But MY way is right!”
**Director of Enterprise Data Management:**

“We are excited to work together with you on this project helping you to improve data integration.”

**Sales Analysis Project Manager:**

*We completely support enterprise wide data integration. However, we have very tight deadlines and budgets so well work together as long as you don’t impact our deadline dates, tasks, resources, or budgets in any way.”*
Whose Model is Right?
Who’s Methodology Is “Right”? 

Integrated Star Schema - Kimball 

Corporate Information Factory - Inmon
Who’s Data Is “Right”?
Have an Agreed Upon Framework

FOR EXAMPLE,

Step 1. Don’t’ react
   Stay objective

Step 2. Disarm
   Step to their side

Step 3. Change the game
   Don’t reject ....Reframe (holistic) (common goal)

Step 4. Make it easy to say yes
   Build a golden bridge (truly win-win)

Step 5. Bring them to their senses, not their knees
   (using power, not force)

From “Getting Past No: Negotiating with Difficult People” By William Ury
Position Versus Interest

INTERESTS A

POSITION A

INTERESTS B

POSITION B
A Fictitious Scenario

Director of Enterprise Data Management:

“We are excited to work together with you on this project helping you to improve data integration.”

Sales Analysis Project Manager:

“We completely support enterprise wide data integration. However, we have very tight deadlines and budgets so well work together as long as you don’t impact our deadline dates, tasks, resources, or budgets in any way.”

WHERE WOULD YOU TAKE THIS CONVERSATION?
Data Warehouse

Mission Statement

• To provide high quality, integrated, meaningful information which empowers the enterprise to meet tactical needs while achieving strategic goals.

Composed by the Data Warehouse Team 2005
Data Warehouse Strategy
How it all began

- **Mar 2004** - *Original RFP to 3 DW Consultant Firms*
- **Apr 2004** – *Executive Mgmt declined Big Bang Proposal and suggested developing an in-house DW Program.*
- **Oct 2004** – *In-house DW Strategy developed (Architecture, Data Quality, Metadata, Presentation, Stability, Data Governance)*
- **Jan 2005** – *Strategy reviewed and approved by industry expert Claudia Imhoff.*
Data Warehouse Strategy
How it all began

• **Mar 2005** – CIO & VP over Data Warehouse champion DW Strategy and sell approach to CEO. Implemented as a DW Program with each component having ROI, meeting a tactical business need and being approved by the steering committee.

• **Apr 2005** – Revenue Analytics Business Case for Onboard Spend approved by Steering Committee. First tactical case approved for strategic DW Program.

• **Jun 2005** – Purchased and conducted training on UDM for integrated area. Participants included DW Architects, DW Developers, Business Analysts and Revenue Management Decision Support Analysts.
UDM Based Implemented Projects

- Revenue Analytics – Onboard Spend (2006)
- CRM – Past Guest Details (2008)
- Sail & Sign – OB Invoices & Credits (2009)
- CDH & Siebel (2010)
Obtaining a 360% View of our Customers

Example Questions that can easily be answered….

• Who is our customer?
• What are their preferences?
• What do they like to do?
• What is the best way to contact them?
• When were they contacted and how?
• How and when did they book a cruise?
• When did they cruise?
• What, where, when and how much did they spend?
• What onboard credits did they receive?
Implemented UDM

Subject Areas

- Party Organization
- Product
- Contact Mechanism
- Billing Account
- Request
- Communication Event
- Reservation
- Payment / Credit
- Invoice
# Integration Projects / UDM Subject Area Timeline

<table>
<thead>
<tr>
<th>ID</th>
<th>Integration Project / Type of Data</th>
<th>UDM Subject Area Utilized</th>
<th>Start</th>
<th>Finish</th>
<th>Duration</th>
<th>2006</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
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<td>1</td>
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<td>Invoice / Products / Party / Organization</td>
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<td>9/15/2006</td>
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<td>2</td>
<td>CRM / Past Guest Details</td>
<td>Party / Person / Party Contact Mechanisms / Geo Boundary</td>
<td>6/1/2007</td>
<td>2/28/2008</td>
<td>39w</td>
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<td>3</td>
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<td>Invoice / Reservation</td>
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<td>9/14/2007</td>
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<td>4</td>
<td>Sail &amp; Sign / Recreate Onboard Guest Invoices</td>
<td>Payment / Credits / Billing Accounts / Invoice / Party</td>
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<td>10/30/2009</td>
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<td>5</td>
<td>Customer Data Hub &amp; Siebel Integration</td>
<td>Communication Event Requests / Products / Party (Person / Employee) / Party Contact Mechanism / Geo Boundary</td>
<td>10/1/2008</td>
<td>3/1/2010</td>
<td>73.8w</td>
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Summary

- Re-use
- Human dynamics – data oursing
Questions and More Info?

- Len Silverston lsilverston@univdata.com
  303 688 1412

- New Volume 3 book, publisher Jan 09
  The Data Model Resource Book, Volume 3: Universal Patterns in Data Modeling

- More about Universal Data Models offerings
  - Our webs site www.universaldatamodels.com
  - Embarcadero distributes UDMs
    http://www.embarcadero.com/products/universal_data_models/
  - Wiley publishing offerings www.silverston.wiley.com