Quality Information as a Service for SOA

1. How to relate the Service Component to your business entities.

2. How to build a high quality data service that enables all other services.

3. How to develop the Information Management Strategy that prevents wasting your SOA investment.
Who are we?

- Fastest growing of the top tier EDA companies
- Market leadership in key segments
  - ESL
  - Functional Verification
  - Analog-Mixed Signal
  - Design for Manufacturing
  - Integrated Systems Design
- Leader in Verification Standards
- Worldwide support, training and consulting

Mentor Graphics
Wilsonville, Oregon U.S.A. Headquarters

- 300,000 Square Feet of Office & Laboratory Space
- 4,350 Employees Worldwide
  - 1,000 at Wilsonville, Oregon Headquarters
Mentor Offers Integrated Design-to-Fab

- Manufacturing-driven closure
  P&R architecture is the discontinuity of the 65/45/32/22 nm era

- Mentor Graphics now delivers an integrated design-to-fab solution for 65/45 nm and beyond
In the Gartner Report: Key Issues for Data Management and Integration, 2006 Ted Friedman writes:

What impact will enterprise information management have on approaches such as service oriented architecture? New approaches to architecture and implementation of applications, such as SOA, are creating pressure to increase the availability, timeliness of delivery, consistency and auditability of data. **Without a strong focus on data at the foundation of their initiatives, organizations will fail in capturing the benefits of speed and agility they seek from SOA.** Our research will analyze the key dependency points between EIM and SOA to expose the risks of failing to align the application and data points of view.
What is Service Oriented Architecture?

- SOA is a method of conceptualizing, designing & building applications by assembling reusable building blocks, each of which is usually represented as a service.

Service Components

- Service Component (and interface)
- main entities in the SOA Concept
- specify them uniquely
**Entities**

A person, place, or thing that the business cares enough about to store and track information.

---

**Data Model is a communication vehicle for the business**

Customer

- COMPETITOR
- MARKETING
- VENDOR

Finance

- SALES
- HUMAN RESOURCES

Product

- PROVIDES SERVICE TO: MARKETING
- SUPPLIES: VENDOR

- SERVICE PROVIDED TO: COMPETITOR

- PURCHASE

- IS AIDED

- GENERATE REVENUE
What is a data service?

Data Services . . . a necessity for SOA

- The advantage of a data service is the ability to bind many different data types into one unified enterprise-wide data model, including schema and content.
- Manages poorly designed and normalized data without having to force fixes to the back-end systems.
Link Services to the required data

Enterprise Data Warehouse

Data tied back to Common Information Model

**Data Services Mapping**

- Web Services layer is composed of data services and business services.
- Business and IT meet in the web services layer. IT supplies data services, codes, and domain types for building business services.
- Data model meta-data is converted into web schema meta-data for the SOA implementation.
Data Driven Touch Points

Master Data Management

Data Modeling

SOA Service Oriented Architecture

ESB Enterprise Service Bus

ETL Extract/Transform/Load

MDR

Customer
Policy
Product

Database

Source: ObjectRiver

Establish an Information Quality Process …

Tie your data quality process to your business process.

Plan Design Source Develop Forecast Sell-In Buy Make Allocate Deliver Merchandise Sell-thru

Assess Data Definition & Information Architecture Quality

Assess Information Quality

Measure Nonquality Information Costs

Reengineer and Correct Data

Improve Information Process Quality

Corrected Data

Process Improvement

Establish the Information Quality Environment

Source: Larry English

Source: MIT Information Quality Industry Symposium, July 16-17, 2008
Information Quality Management will focus on the following activities:

- **Information Quality**
  - Meta-Data Content
  - Data Standards
  - Data Architecture
  - Goals & Metrics

- **Data Modeling**
  - Conceptual
  - Logical & Physical
  - Business Rules
  - Entity/Attribute Definition

- **Data Stewardship**
  - Data Remediation
  - Data Scrubbing
  - Data Governance
  - Data Standards Compliance

- **Business Process Modeling**
  - Identify business process owners
  - Model the business/system processes
  - Measurement & Analysis

---

**Business Processes**

[Diagram of business processes]
MEASURES OF QUALITY

Single Version of the Truth

Data Model Driven Design

Enterprise Data Warehouse

Tools that can help you improve your process . . .

Value Stream Mapping

Technique for capturing processes

“as is” (current state)  “to be” (future state)
**Stabilize before you Improve**

Which player did better in this round? Which is likely to do better after several rounds of play?

**Coupling Principles**

SOA
Service Oriented Architecture

ETL
Extract Transform Load

IQM
Information Quality Management

EDA/ESB
Event Driven Architecture Enterprise Service Bus

Source: ObjectRiver
Service Level Agreement

✓ A SLA is a formal negotiated agreement between two parties.

Information Quality Management Strategy drives SOA
Common Information Model

INFORMATION MODEL - SOA IN THE BUSINESS PERSPECTIVE

Master the Art of Problem Solving

- Develop a hypothesis and test it.
- Check results and adjust your plan.
- Be relentless in pausing to learn from “what just happened?”

MIT Information Quality Industry Symposium, July 16-17, 2008
What now . . . ?

Taking it back to the job . . .

Quality Information as a Service for SOA - Questions?