Data Quality Challenges in Enabling eBusiness Transformation*

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* Part of this work is done in collaboration with Prof. Richard Wang
(see paper in proceeding)

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Presentation Outline

- CITM’s Research
- eBusiness and Marketplace Transformation
- Data Quality Issues
- Examples of eBusiness projects
  - Content Management in B2B eProcurement
  - From Middleware to Anyware
- Summary
Fisher Center for Information Technology and Marketplace Transformation (CITM)

CITM’s Research Map

Enabling eBusiness (EEB) Transformation

The Marketplace

Partners and Suppliers

Government (Regulation, taxation, etc.)

ePersonalization

Customers
• Consumers
• SMEs
• Large Companies
• Government

Specific Agenda Topics:
• Process Transformation
• Outsourcing, Hosted Applications & Web Services
• Legacy Systems Migration
• eNegotiation
• eCollaboration
• eCoordination
• Information Management & Data Quality
• eProcurement
• Supply Networks
• Markets & Intermediation
• Standards & Interoperability
• Requirements and Change Management
• Channel Integration
• Customer Interaction

Sample Projects
• eNegotiation in Complex Procurement
• Industry Reports
• Place-based eBusiness
• Information Integration and Quality
• Contents Management in eProcurement
• Channel Integration

Products
• Research Publications
• Industry Reports
• Public Workshops
• Public Conferences
• Subscription-based Programs

The (pre) e-Commerce to e-Business Road (Lack of) Success Factors

Degree of “e_business”

Stage 1
• Static Info Posting
• Self-service Info Intranets
• No mgmt strategy or commitment

Stage 2
• Web Transactions
• Dynamic Contents
• Self-help customer service
• Some mgmt commitment

Stage 3 & beyond
• Web transactions
• Dynamic commerce
• CRM
• Significant business process change
• Mgmt priority

Linear transformation is not enough in most cases!

Gap

Success
The Fundamental eBusiness Changes

Through Technological Capabilities, Global Connectivity and Reduced Transaction Cost we Observe:

- Redefinition of Core Competency and Products
- Change in Revenue Models
- Change in Relationships: Coopetition, Buying, ...
- Change in Functional Processes and Organizational Structure
- Lower Granularity and New Models of Outsourcing
- New Models of Customer Interaction

Dynamic eBusiness Implies High Level of Externalization

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Data Quality Challenges

- More parties, larger data space, more dynamic, more heterogeneous
- More complex business relations among producers, users and intermediaries of data.
- Interdependency of processes and data
- Ownership of processes and data
- Data segregation requirements (adverse effect on quality)
- Internal Company DQ practices might be an obstacle to market-oriented eBusiness processes
- Data logistics and e-contamination (see example on next slide)

DQ Strategy - how to determine optimal DQ level? Differs for producers, intermediaries and consumers of data
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From Middleware to Anyware
(A joint project between CITM and LLNL with the Support of AnySoft Inc.)

- The Anyware Concept
  - Enabling interoperability
  - Integration support
  - Application augmentation
  - Can reside at the server, at the client, in the middle, or anywhere
  - Universal (Any platform, any application, …)
  - Non-intrusive (Does not touch the original application)
- Can the above be realized. Technologies & methodologies such as the ones used in this project advance the above concept towards reality.
Examples of the Usage of the AnySoft Technology

Anysoft Digital Cortex Technology

Remote Usage thru Data and UI Objects which replicate each of the components (and their operations) that comprise an application.

Examples of the Usage of the AnySoft Technology (Continued)

Integration of two or more applications

In this case, two applications are integrated in a non-intrusive way to create new client applications for various client technologies.

The next slides show specific examples.
Capture data from a web site

Stock Quotes from a web browser

Stock Market Figures Database

Capture data and reroute to end-user application

DOS-Based Proprietary Inventory Application

Excel Application

Product Report Graph
Automation of “live” data capture

“Re-front ending”: Web-based interface to multiple applications

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DOS based proprietary inventory application

Product Database
Summary:

- **eBusiness is Changing:**
  - Relationships (with customers, suppliers and competitors)
  - Core Competencies
  - Boundaries of the Company
- **Main Problems to Solve:**
  - Process & Management Transformation
  - Interoperability & Content Management
  - Data Quality strategy, methodology, and technologies
- **Anyware-type Technologies can Facilitate and Reduce the Cost eBusiness Transformation**
- **Further Details:**  [http://haas.berkeley.edu/citm](http://haas.berkeley.edu/citm)  
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Thank You!