



*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)*

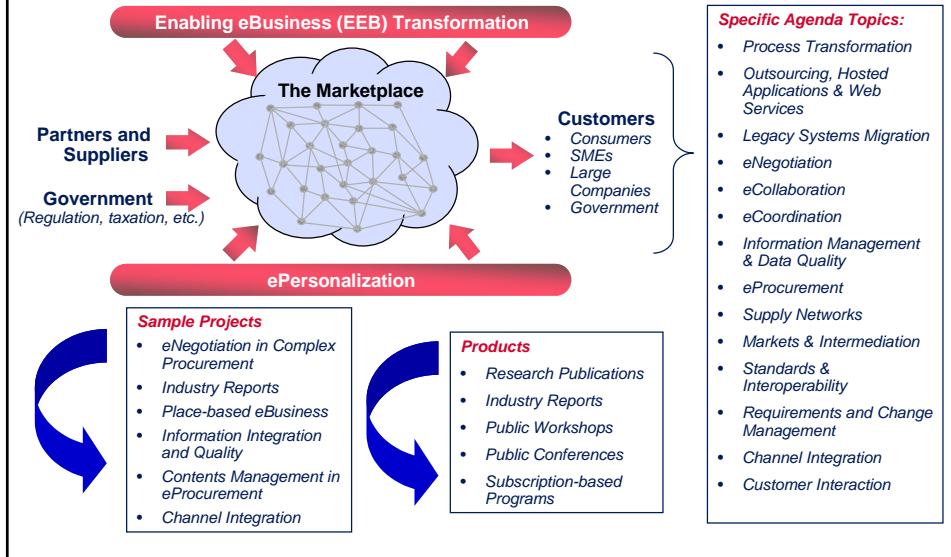
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Presentation Outline

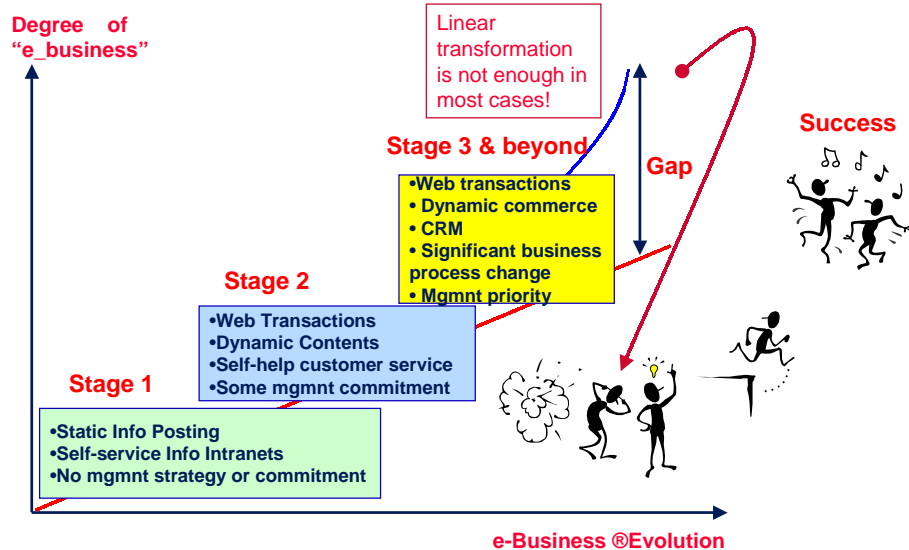
- > **CITM's Research**
- > **eBusiness and Marketplace Transformation**
- > **Data Quality Issues**
- > **Examples of eBusiness projects**
 - > **Content Management in B2B eProcurement**
 - > **From Middleware to Anyware**
- > **Summary**

Fisher Center for Information Technology and Marketplace Transformation (CITM)

CITM's Research Map



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



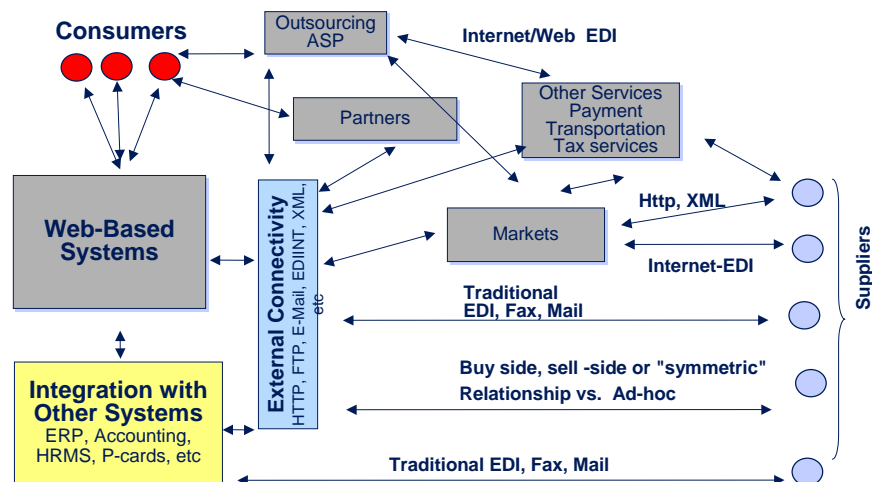
The Fundamental eBusiness Changes

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

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Dynamic eBusiness Implies High Level of *Externalization*



Source: © A. Segev, E-business Transformation Strategy, Fisher Center for IT & Marketplace Transformation, 2000.

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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)

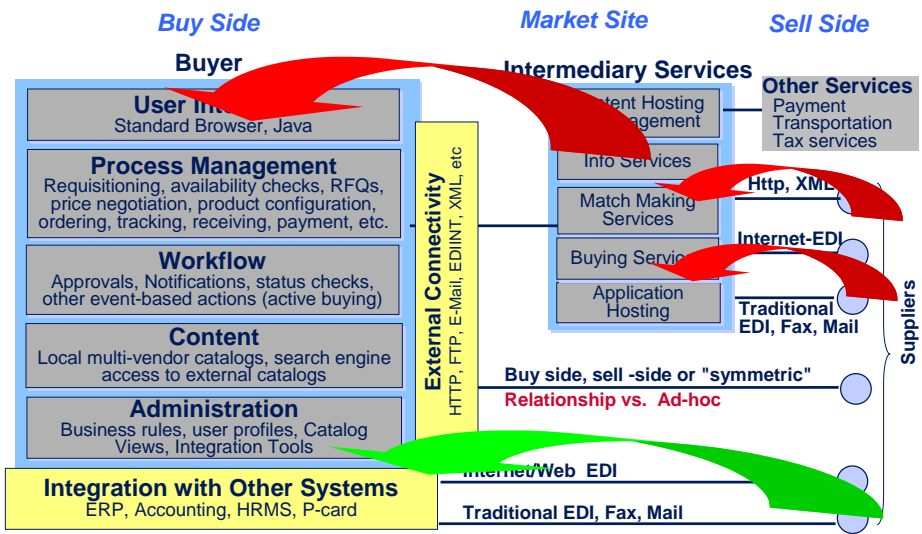
DQ Strategy - how to determine optimal DQ level? Differs for producers, intermediaries and consumers of data

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Desktop Procurement Systems & Marketplaces: Key Functionality and Connectivity Options



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From Middleware to Anyware

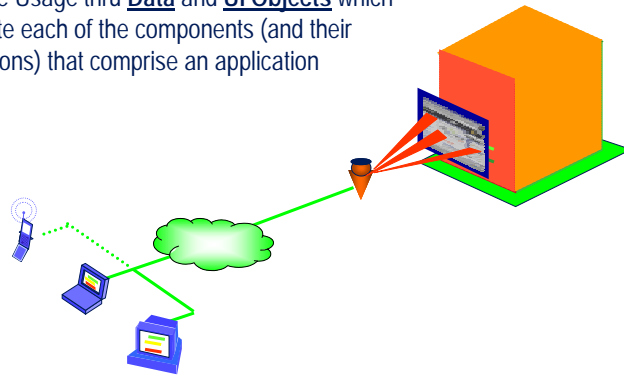
(A joint project between CITM and LLNL with the Support of AnySoft Inc.)

- 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



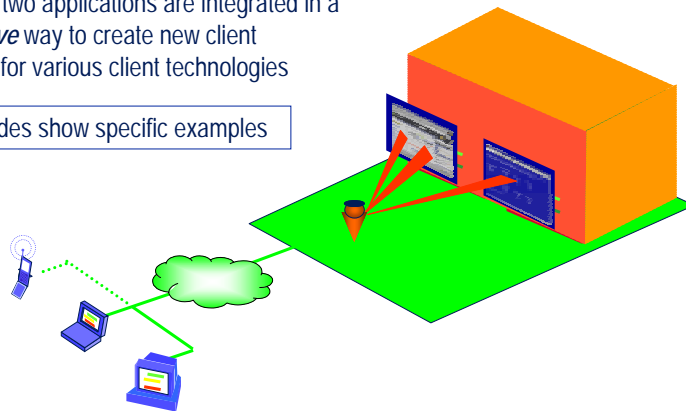
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Examples of the Usage of the AnySoft Technology (Continued)

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



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Capture data from a web site

Stock Quotes from a web browser

The screenshot shows a Microsoft Internet Explorer browser window displaying Yahoo Finance data for COMSTW INC. (COMSTW). The data table is as follows:

COMSTW INC (Shares: COMSTW)	More Info	News	SEC	More	Public	Research	Insider
Last Trade	Change	Price Chg	Volume	Div Date			
May 12 - 20 7/16	+1 7/16 (+7.57%)	79	1,309,330	N/A			
Day's Range	5d	Ask	Open	Avg Vol	Ex-Div		
18 7/8 - 21 7/16	20 7/16	20 1/2	19 7/8	801,101	N/A		
52-week Range	Ex-div	P/E	Mkt Cap	Div Chg	Yield		
7 - 20 7/8	-2.97	N/A	363.9M	N/A	N/A		

Below the table is a line chart titled "18-May-1999" showing stock price analysis for COMSTW (ETC), COMSTW (HSPT), and COMSTW (181) from July to May. A yellow arrow points from the chart to a yellow cylinder labeled "Stock Market Figures Database".

Capture data and reroute to end-user application

DOS-Based Proprietary Inventory Application

Excel Application

Product Report Graph

The screenshot shows a DOS-based inventory application window with a table of product data. Two columns are highlighted with orange boxes. Dotted lines connect these boxes to an Excel spreadsheet window titled "Excel - BaldoPrices.xls", where the data is being processed. Below the Excel window is a 3D bar chart titled "Products by Prices" showing price trends for various products.

Automation of "live" data capture

DATEK ONLINE Streamer
Real-Time Dynamic Quote Display

Symbol	ST	Est	Ask	Last	Change	High	Low	Volume	Traded	Bid ID
IBM		222 1/8	222 3/16	222 1/8	+1 1/8	222 5/8	215 1/2	1,951,700	10:50:01	N
BATL		14 1/4	14 3/8	14 3/8	+ 1/2	14 1/2	13 7/8	66,300	10:49:23	Q
HSGFT		80 1/16	80 1/8	80 1/8	+ 1/4	80 3/4	79 1/4	8,616,300	10:50:09	Q
LCOS		109 5/8	109 7/8	109 5/16	+10 5/16	109 7/8	100 3/4	4,395,100	10:50:09	Q
AMZN		142 5/8	143 13/16	143 1/2	+ 7/8	148 5/8	141	1,527,300	10:50:07	Q
WDC		169 1/4	169 3/4	169 3/8	+ 5/8	173 1/2	164 7/8	3,338,400	10:50:08	Q

NYSE	Last	Date	Time	Change	Open	Day's Range	Volume
IBM	222 3/16	052599	10:48:07	+1 3/16	221 15/16	222 5/8 215 1/2	1,826,700
IBM	222 1/4	052599	10:48:40	+1 1/4	221 15/16	222 5/8 215 1/2	1,843,000
IBM	222 3/16	052599	10:49:09	+1 3/16	221 15/16	222 5/8 215 1/2	1,845,500
IBM	222 1/16	052599	10:49:34	+1 1/16	221 15/16	222 5/8 215 1/2	1,851,300
IBM	222 1/8	052599	10:50:01	+1 1/8	221 15/16	222 5/8 215 1/2	1,858,700

"Re-front ending": Web-based interface to multiple applications

DOS based proprietary inventory application

Inventory

Inventory System 5.00 - DATEK Inc.

From: 480207-4800 - Order: American Bank
 Product: 1500 - RE-ORDER-8 - Vendor: ROGERS RT
 Location: 100 - On Order: 20 - Received: 22.48
 PTD: 0000 - ST: YTD: 0000 - 544 - 001 - 0
 Date: 05/25/99
 User: JHARRIS

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>
segev@haas.berkeley.edu

Thank You!