

Information Technology Strategy for Smart Builders

E-Business Strategies
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BuildingVision.net

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Company

Introduction

Agenda & Objectives for Feb. 4:

- Introduce Some E-Business Strategies
- Hear From You: Interests & Desires?
- Describe the Flow of the Class
- Review Administration and Assignments
- Help you to
 - A) Decide whether to take the class
 - B) Prepare the work

John Macomber

Background

- **Former Construction CEO (Still Chairman)**
 - George B. H. Macomber Co., \$250 mm GC
 - Cisco, MIT Media Lab, Children's Hospital
 - (AGC Members for over 50 years, former Director)
- **Real Estate Partner**
 - 2,000,000 SF
- **Academic Thought Leader**
 - Harvard: E-Commerce and the Internet in Real Estate and Construction
 - MIT: Strategic Management in the Design and Construction Value System
 - Young Presidents' Organization: International Education Committee
- **Dot.com Entrepreneur**
 - Collaborative Structures, Inc. (sold to e-Builder)
 - Multi-Party Communication Services Provider and Software Reseller
- **Consultant, Director, and Angel Investor**
 - BuildingVision - *Pursuing industry transformation*
 - Work includes Primavera, CMD Group, Bentley Systems, Revit

About the Construction Industry:

Characteristics

- Huge - \$4 tr worldwide
- Local
- Project Based
- Unique end product
- Hundreds of firms all working with dozens of firms
- Low barriers to entry
- High barriers to exit

Traditional Implications

- Few economies of scale
- Fragmentation
 - (ENR 400 in aggregate < 25% of US market)
- Low margins
- High risk
- Same in related sectors
 - A/E, RE

E-Business Strategy: What are You Trying to Do?

Who are you?

- **Helping a large “at risk” company compete**
- **Helping an existing service provider compete**
- **Starting a new company**
- **Playing with computers**

How ambitious is the strategy?

- **Restructure the Industry**
- **Build Sustainable Advantage**
- **Increase Revenue**
- **Reduce Cost**
- **Play with computers**

Analytical Framework - Technology Strategies

Scope of IT Initiative:

Intent of IT Initiative:

Change
Industry
Structure

Compete
in Same
Arenas

External
Advantage

Internal
Processes

DELL

Charles Schwab

L.L. Bean

BECHTEL

Source: Rockart & Smith

Big Wins in IT / E-Business Strategy

What “Big Wins” do:

Overcome fragmentation
Manage vertical integration
Create barriers to entry
Use economies of scale
Change negotiating power

WALMART

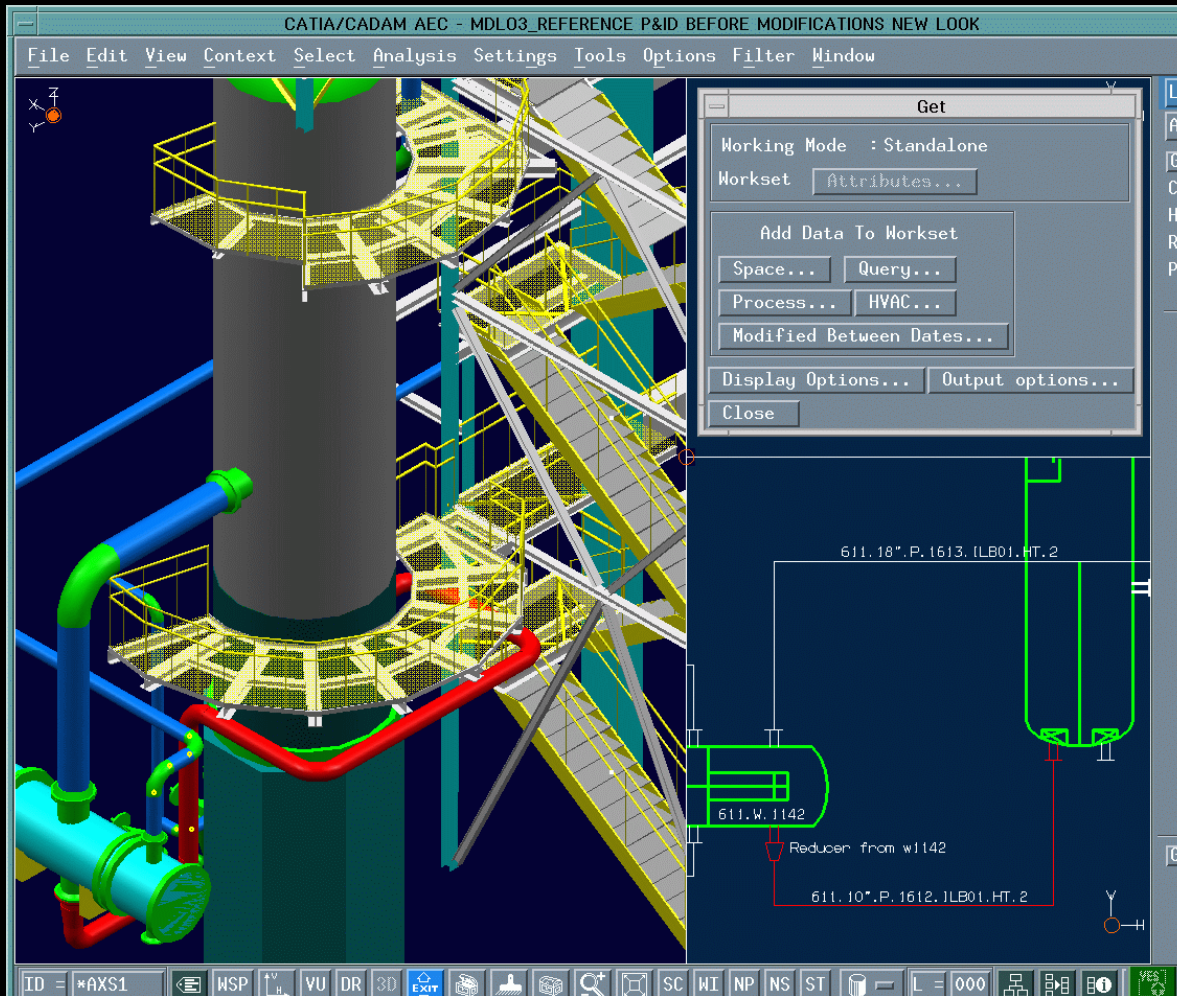
Cisco Systems

eBay

Fidelity Investments

Microsoft

For Example in AEC: Shared 3D Model tied to Database



- Design intent captured in 3D
- All components are tied to databases with further information
- This can be changed in real time
- Available to all in real time
- *This is different than static 2D contracts!!!!*

Source: IBM/Catia

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For Example, Beyond “Host and Post:” Other steps to capture value include B2B Internet Bidding

Image removed due to copyright considerations.

- Graph shows subcontractor price declining in open bid
- Today, Freemarkets.com targets Fortune 100
- Materials and labor are harder than industrial components
- Only big companies can do this
- Project managers could take advantage of the system yet still control the buy locally

Source: Freemarkets

For Example, Planned Coordination with Algorithms: Supply Chain Integration (supplyworks.com, i2)



Courtesy of SupplyWorks, Inc. Used with permission.

My Personal Vision:

- 3D solid models
- tied to databases
- with compensation based on a multiparty agreement
- acting to optimize the system across material and labor
- with multi-firm visibility into constraints
- coordinated by a profit-based algorithm

Reduce time 50% and reduce cost 25%

Menu of My Favorite “Transforming” E-Business Strategies

- Top Three Technologies:
 - Supply Chain Visibility and Optimization
 - 3D Models tied to Shared Databases
 - Knowledge Management
- Necessary Business Models:
 - Shared Bottom Line: Aligned Incentives
 - Franchising and Alliances
- Also:
 - Procurement
 - Exchanges
 - Extranets

What do you want to learn about?

- ?

Class Format

- Emphasis on individual projects and research
- Analysis of pre-written case studies to be presented by teams of students, then discussed
- Final assignments = projects

Projects:

- Write a case study
 - “How Bovis Lend Lease decides to implement innovative business models”
- Write a paper to be published
 - “Application of supply chain optimization from manufacturing into construction”
- Prepare a business plan
 - “Commercializing decision rules in real estate design and construction”

Possible Case Studies

- Innovation at Bovis Lend Lease
- The Beck Group and DESTINI (3D Modeling)
- Bentley Systems and the Value Added Resellers
- Albert Kahn Associates, BMW, and the Digital Factory
- i2 Technologies and Home Depot: Schedule Optimization in the Construction Supply Chain
- Visualizing The Home: MIT Media Lab House_n
- Customized Structures: Seeking Scale in Home Building

Possible Business Plans

- Commercializing Design Visualization
- Deploying and Maintaining Complex Life Cycle Data for Fortune 100 Manufacturing Companies
- Franchising Construction Material Supply in China
- Design-Build Leveraging 3D Design

Possible Papers for Publication

- Quantitative Analysis of Possible Savings from Lean Construction
- A Model for Shared Incentives in the Condominium Market
- How Insurance Products can Accomplish Project Alignment
- A Knowledge Management Franchise to Benefit Entrepreneurial Firms

Target audience for the class:

- Students who are interested in further study in strategy
- Students who are interested in structural change in real estate and construction
- Students interested in any aspects of commercializing an e-business idea
- Students can be interested in any vertical market (construction or otherwise)

Administration

- Calendar
- Grading
- Papers
- Project
- Course Website

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E-Business Strategies