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:

External Advantage

- DELL

Internal Processes

- Charles Schwab

Change Industry Structure

- L.L. Bean

Compete in Same Arenas

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

- 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
MIT

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E-Business Strategies