S305: Business Process Change

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BIM Buzz is Rather Intense…

- Promise of major transformation for facility life cycle
  - Shorten development schedule
  - Improve design quality
  - Improve building performance
  - Improve facilities operations & maintenance profile
- Reduce cost of design, construct, operate
- Reduce facility delivery time
- Scent of $
BIM - a Disruptive Technology

- Portends realignment in industry
- New business relationships rapidly emerging
- Industry stakeholders scrambling for position
- Catalyst for linking a fragmented industry - silo mentality will not survive
- Different more collaborative processes will emerge
Business Case

- NIST study identified $15.8B lost to lack of interoperability
- Construction productivity in decline
- The numbers are significant

Worldwide Construction Industry 2008 = $4.8T
US Construction Industry 2008 = $1.288T
57% of $1.288T = $734B Annually
2/3rds of $734B = $492B Annually
 Owners are Catalysts in the Move to BIM

- No longer willing to yield to a tradition of inefficiency
- Lead the charge for a leaner, smarter process
- Challenge providers to deliver facilities faster, better, safer and at lower cost
- Expect design/construction partners to be proactive in applying concepts
- Looking for early returns—tangible results from bid through implementation at the site
- Require BIM to enable lean practices to identify and eliminate waste in the entire project cycle
The Move to Lean is not Without Precedent

- Automotive, electronics, aircraft
  - Supply chain automation
  - Compliance with standards entry level for participation - collaborate or out

- Applied to facility projects
  - Better value for their investment
  - More collaboration, all stakeholders, less combative
  - Ability to use information across full design/construct/operations teams
  - Increased focus on life cycle including operations
A Building Information Model (BIM) is a digital representation of physical and functional characteristics of a facility. As such it serves as a shared knowledge resource for information about a facility forming a reliable basis for decisions during its life-cycle from inception onward.

A basic premise of BIM is collaboration by different stakeholders at different phases of the life cycle of a facility to provide, extract, update or modify information in the BIM to support and reflect the role of that stakeholder. The BIM is a shared digital representation founded on open standards for interoperability.

The US National BIM Standard promotes the business requirement that this model be interoperable based on open standards.
Challenges Loom

- More questions than answers
- Consensus needed on a host of issues
  - Legal – contracts, liability
  - Ownership and reuse
  - Compensation
  - Digital rights management
  - Life cycle maintenance
- New processes and workflows needed to facilitate and leverage
  - Collaboration
  - Interoperability
  - Culture
Process Changes are Profound

Traditional

Integrated

WHAT

HOW

REALIZE

Traditio
cual

Owner
Architect

Engineers

GC

Subs

WHAT

HOW

WHO

REALIZE

Traditional

Integrated

Agency

Owner

Criteria Design

Detailed Design

Implementation Documents

Agency Coord / Final Buyout

Construction

Closeout

Agency

Owner

Agency

Owner

Agency Permit / Bidding

Construction

Closeout

GC

Subs

GC

Subs

Conceptualization

Agency

Agency

Conceptualization

Agency

Agency

GC

Subs

Subs

Process Changes are Profound
Address changing process and delivery requirements for facilities

Focus on business process adaptation - less concerned with the technology per se, relying on other TTs

Facilitate dialog and consensus, and provide direction to industry regarding the impact and opportunities
Business Process Team Profile
- Roster of 90+
- Large /small design consultants, Product manufacturers, Contractors, Owners – public and private, Vendors, Legal and risk management

Working Group: Contracts, Risks, and Liabilities
- Examine legal relationships, liabilities, IP, risk management
- Resolve conflicts and gaps so that benefits can be achieved

Working Group: Staffing, Skill Sets & Education
- Develop staff to meet the demands of a BIM centric process.
- Expanding need for information specialists in the facility life cycle processes.
- New models for collaboration, partnering and outsourcing will emerge.
Working Group: Services and Marketing
- New base and extended services; new business relationships
- Downstream potential for BIM data will engender a much more consultative process at the front end of projects

Working Group: BIM Process
- New workflows
- Best practices
- Information exchange and handoffs
BIM Execution Planning

John Messner, PhD, Pennsylvania State University

• The buildingSMART Alliance Project
• Effective development of BIM Execution Plans.
Questions?

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