The Owner's Enterprise BIM for Lifecycle Operations

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Class ID BO2372

This class is designed to present the next level of Building Information Modeling (BIM) and big data for owner's lifecycle operations. The presentation will introduce a truly cloud-based, 24x7 hosted, collaboration web service born from best practices in the architecture, engineering, and construction industry and focused on the owner's lifecycle operations at an enterprise-level. The class will foster an understanding of the next generation of globally accessible, concurrent "big BIM data" and collaboratively flexible and infinitely scalable metadata schemas. The class will showcase past and present projects where this cloud-based collaboration has been used to illustrate how communication and problem-solving on complex projects can be improved for project responsiveness, quality control, access to the most up-to-date data, and overall project cost and schedule**.**

Learning Objectives

At the end of this class, you will be able to:

- Gain strategic insights on cloud-based platforms for facilities maintenance, management, and lifecycle operations

- Explain the most important point about 3D-integration platforms for visualization and web services applications for CMMS and like systems

- Gain insights on the "Googlization" of AECOO metadata through pervasive access and a structured, social interface

- Identify how "heavy BIM" is made lightweight and scalable across virtually unlimited numbers of organizations and users

About the Speaker

Mr.Tisdel is both nationally and regionally recognized as one of the thought leaders in the field of BIM processes and implementation. He has a broad technical, application background in the use of the BIM process and the manipulation of BIM software. In his role as Director of BIM services for Broaddus & Associates, Mr. Tisdel made certain that all projects achieved three primary deliverables. These deliverables included a BIM data model, a constructability model and a computerized maintenance management systems (CMMS) input (an import from BIM for O&M purposes). Mr. Tisdel has the distinction of being the first person in the nation to be titled Director of Building Information Modeling at a State (Texas) level.

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Introduction

What is Enterprise BIM?

Enterprise BIM is utilizing building information modeling for all phases of a project and beyond into its lifecycle operations, inclusive of all stakeholders involved.

Enterprise BIM is a new way for architecture, engineering and construction teams to collaborate and share project and 3D design information. Enterprise BIM centralizes all BIM models and related information in a web-based platform that helps architects, designers, engineers, contractors, consultants, and owners easily collaborate, synchronize and share files from anywhere. Utilizing BIM as a central platform, project teams can reduce errors, save time, reduce change orders, reach consensus faster, get historical information and reduce project administrative costs. This truly collaborative process is the first of its kind to be used on some of the largest construction projects in the world.

This operational process looks at the typical, project-based "design-construct-handover" process and at a larger "enterprise" level, one that includes all stakeholders and takes into consideration the owner's role at both the beginning and end of any project; and further augments the process with the understanding that no project has an end, but rather a lifecycle.

This lifecycle, enterprise implementation of new processes includes strategies around pre-planning, board and executive approvals, proposals, contracts and initial project execution. Further, it includes a deep understanding of the service providers and supply chains that owners work with, including design and engineering professionals, procurement procedures, construction managers and builders, subcontractors, and commissioning agents. Finally, this plan migrates into the facilities management and operations side and thus back to the owner for lifecycle management through computer management and maintenance systems, computer-aided facilities management systems, retrofit processes, renovation processes, and deconstruction.
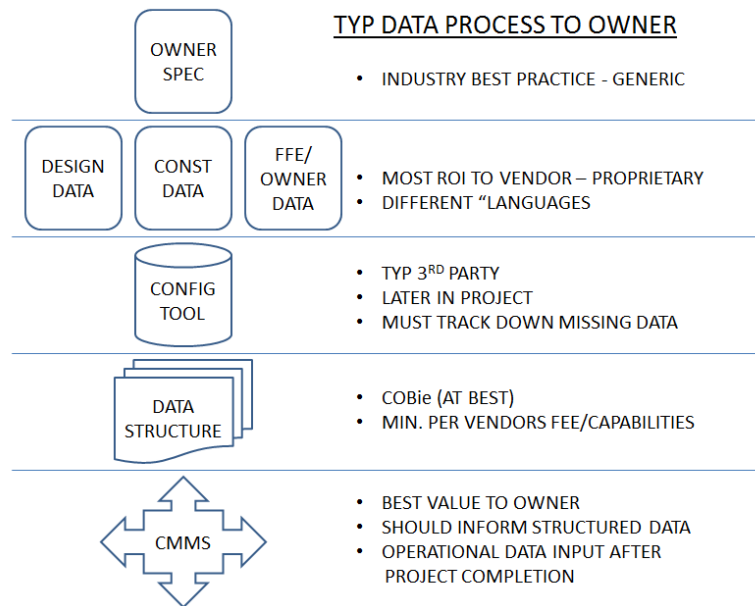
The typical approach to utilizing BIM by an individual, a project team or even an owner is based on a linear, asset-based traditional schema versus an enterprise approach based on a bi-directional, circular and systems-based schema. The end result of a process where gaps remain and not all stakeholders are accounted for is poor documentation and data. Poor documentation takes more time to verify and qualify and poor data leads to bad decisions. Bad decisions based on poor data have a nasty way of eventually showing themselves, leading to a lack of confidence in the original information and a steady reduction in its use. For any owner, lack of confidence in data and/or simply not using it, leads to "fixing" immediate problems on the fly, using no historic data and no foundation to update the data on. This process, over time, becomes viral, infecting the entire client's enterprise... now, we have a cure.
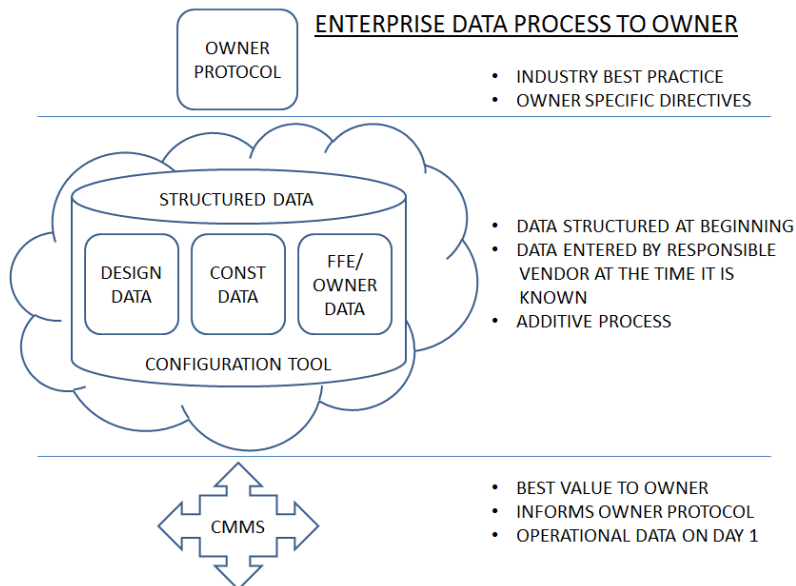
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Current BIM Process:

TYP DATA PROCESS TO OWNER

OWNER SPEC
- INDUSTRY BEST PRACTICE - GENERIC

DESIGN DATA | CONST DATA | FFE/ OWNER DATA
- MOST ROI TO VENDOR – PROPRIETARY
- DIFFERENT "LANGUAGES

CONFIG TOOL
- TYP 3RD PARTY
- LATER IN PROJECT
- MUST TRACK DOWN MISSING DATA

DATA STRUCTURE
- COBie (AT BEST)
- MIN. PER VENDORS FEE/CAPABILITIES

CMMS
- BEST VALUE TO OWNER
- SHOULD INFORM STRUCTURED DATA
- OPERATIONAL DATA INPUT AFTER PROJECT COMPLETION

Enterprise BIM Process:

ENTERPRISE DATA PROCESS TO OWNER

OWNER PROTOCOL
- INDUSTRY BEST PRACTICE
- OWNER SPECIFIC DIRECTIVES

STRUCTURED DATA

DESIGN DATA | CONST DATA | FFE/ OWNER DATA

CONFIGURATION TOOL
- DATA STRUCTURED AT BEGINNING
- DATA ENTERED BY RESPONSIBLE VENDOR AT THE TIME IT IS KNOWN
- ADDITIVE PROCESS

CMMS
- BEST VALUE TO OWNER
- INFORMS OWNER PROTOCOL
- OPERATIONAL DATA ON DAY 1

One ring to bind them all...

Enterprise BIM happens in the "cloud". In the cloud, an hour of computing time costs pennies on the dollar and the amount of information that can be aggregated during a particular time frame is exponential when compared to human labor and the associated burden. Having said this, no computer or cloud of computers is smarter than those running and inputting data. As with everything in our industries, Enterprise BIM requires all stakeholders be involved in a technology to allow complete collaboration… hence the cloud.

Enterprise BIM allows stakeholders from all over an organization or organizations all over the world to combine all efforts into one source of truth that can migrate from cradle to grave and beyond, becoming the applied metrics for future projects and scope.

Stakeholders within an organization:
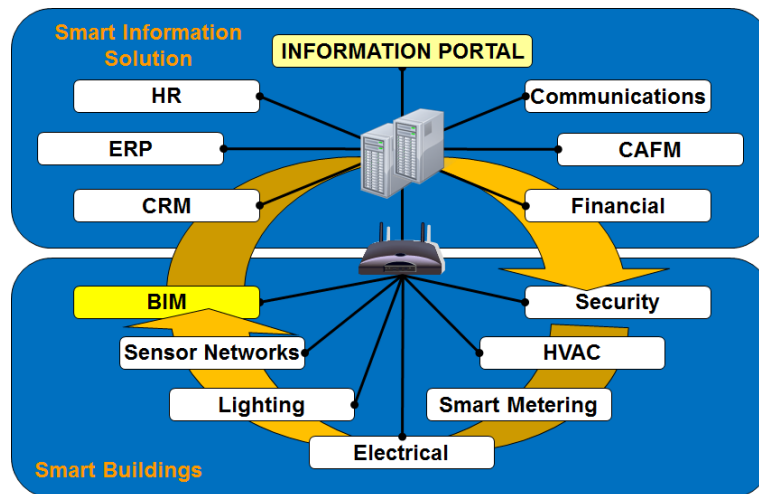
BUILDING INFORMATION MODELING IS THE BEGINNING OF THE INFORMATION CHAIN AND THE LIFECYCLE DATABASE FOR A PROJECT

Multiple organizations worldwide:

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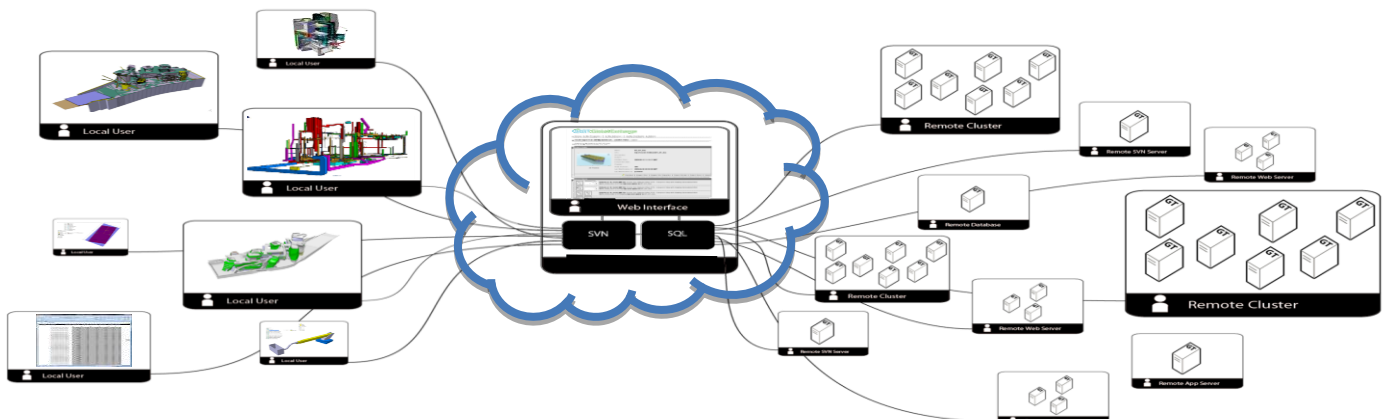
Launching an enterprise level BIM implementation for lifecycle operations includes applying a higher degree of intelligence to traditionally mundane processes in order to bring efficiency, accuracy and speed where they might have been lacking prior. Applying the latest in "working technologies" that bridge social media, messaging, "big search" and file organization is key to fulfill the needs of all stakeholders and give them the collective tools needed to systematically collaborate and operate.

Project-level tools and collaboration:

Projects - Messages & Events
Files – Upload, Sync, History
3D - BIM Object Server & Viewers
Mashup – Dashboard & Services

people & organizations

projects

project wall

Sync

messages

File-level tools and collaboration:

Projects - Messages & Events
Files – Upload, Sync, History
3D - BIM Object Server & Viewers
Mashup – Dashboard & Services

tagging & search

file history

upload / download and sync

file system and browser

2D and 3D previews

Sync

markup

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BIM model-level tools and collaboration:

Projects - Messages & Events
Files – Upload, Sync, History
3D - BIM Object Server & Viewers
Mashup – Dashboard & Services

measuring & annotation

quantities and reports

Revit connector

3D

Neutral 3D

Sync

simple, powerful web viewing

clash management

sections and snapshots

Enterprise level tools and collaboration:
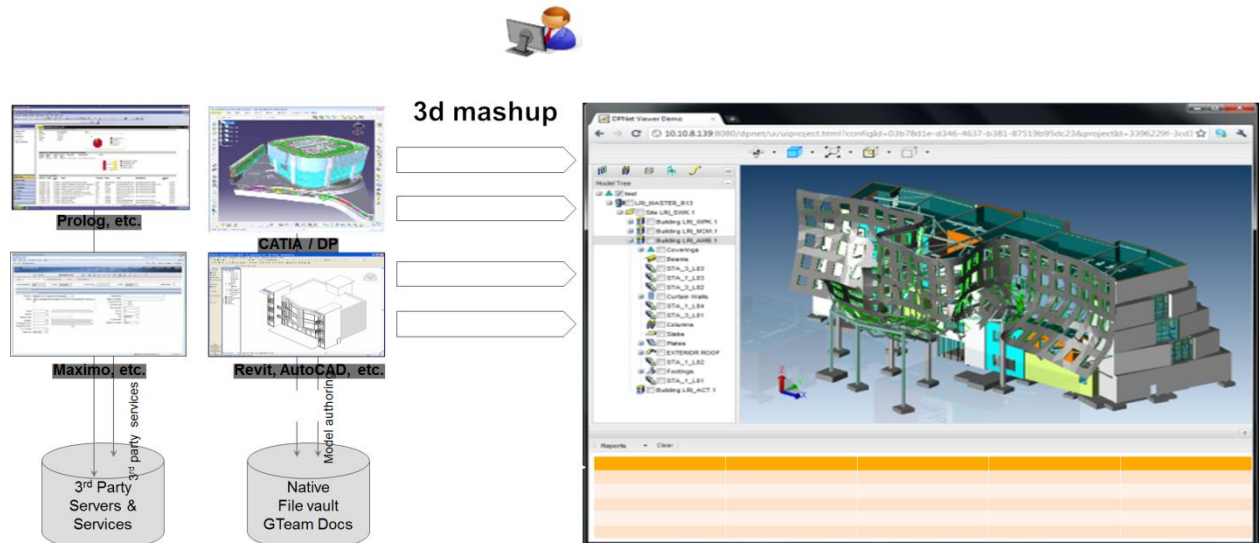
3d mashup

Prolog, etc.

CATIA / DP

Maximo, etc.

Revit, AutoCAD, etc.

3rd party services

Model authoring

3rd Party Servers & Services

Native File vault GTeam Docs

6

The name of this game...

Situational awareness is the name of this game… but not only for the architect, engineer, contractor or even the owner, but rather, the entire team. Pulling this process off the desktop and supporting it in the cloud is the first technological step in the Enterprise BIM paradigm. The second step is the creation of an environment where the implementation of the process will provide a level of information and "alerts" to problems, in real time, as it is created and as they arise, respectively. This highly user-oriented, collaborative technology platform allows for in-depth analysis and better management of resources to meet mission objectives, client needs, energy targets, operational accuracy and more.

The technical aspects that go into situational awareness and by extension, Enterprise BIM, include monitoring (project data and project team members), storage of data, data analytics, continuous commissioning and improvement and finally, reporting. All aspects are circular in execution, continuous throughout the lifecycle and dependent on one another. This latter point is crucial to the process, but the most difficult to achieve due to project team and owner back sliding during any project or process.

This lifecycle, enterprise management implementation of new processes includes strategies around pre-planning, board and executive approvals, proposals, contracts and initial project execution. Further, it includes a deep understanding of the service providers and supply chains that owners work with, including design and engineering professionals, procurement procedures, construction managers and builders, subcontractors, and commissioning agents. Finally, this plan migrates into the facilities management and operations side and thus back to the owner for lifecycle management through computer management and maintenance systems, computer-aided facilities management systems, retrofit processes, renovation processes, and deconstruction.