IFMA: It’s All About the Data – From Many Sources to One Strategy

IFMA Presentation Series #1
IFMA is the world’s largest and most widely recognized association for facility management professionals

<table>
<thead>
<tr>
<th>By the Numbers:</th>
<th>Cost:</th>
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<tbody>
<tr>
<td><strong>24,000</strong></td>
<td>IFMA membership is an affordable investment with meaningful payoff</td>
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<tr>
<td>Active IFMA Members</td>
<td>Professional &amp; Associate Membership....... $219</td>
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<td><strong>104</strong></td>
<td>Young Professional Membership............... $139</td>
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<td>Countries have IFMA Presence</td>
<td>Retired Membership............................ $100</td>
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<td><strong>6</strong></td>
<td>Student Membership................................ $10</td>
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<td>Worldwide IFMA Communities</td>
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<td><strong>134</strong></td>
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<td>Global Chapters</td>
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<td><strong>16</strong></td>
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<td>Industry Councils</td>
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<td><strong>10,000+</strong></td>
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<td>Credentialed FM Professionals</td>
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<td><strong>84%</strong></td>
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<td>of employers state that IFMA education increases the collective FM Knowledge of their organization</td>
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<td><strong>74%</strong></td>
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<tr>
<td>of employers feel that their reputation is improved by having employees complete IFMA credentials</td>
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Join the IFMA iTC Community Today! $55.00

For more information visit: it@ifma.org or ifma.org

or contact Daniel Stonecipher at dstonecipher@immersivx.com
The goal of the 2nd edition of The Facility Manager’s Guide to Information Technology is to provide current best practices content and extend distribution to membership, interested parties and universities with FM Programs.

Win or Buy a Good Reference Tool!
Kindle or Hard Cover

Thanks for attending
The IFMA Sessions at AEC Next 2019!
Kara Bartelt, Director of Operations of The Hoxton has 20+ years of executive experience in real estate, architecture, project management, facilities, planning & design development. Kara has a long history of process and change management and is currently Director of Operations at The Hoxton, Downtown LA. Previous recent roles include the Director of Facilities & Operations at the Ace Hotel and as a Facilities Operations Associate at Caltech. Before joining Caltech, Kara was a professor at the University of Southern California where her teaching and research centered on the integration of technology in building design and operations. Kara received a Master of Architecture from Yale University, as well as a Bachelor of Science degree in Art and Design from the architecture department at the Massachusetts Institute of Technology.

Brian Haines, VP of Strategy for FM:Systems, is a twenty year veteran of marketing and product management of Cloud and desktop products specifically created for the building industry. Brian is currently the Vice President of Strategy where he defines and communicates FM:System’s corporate strategy and provides key insights into the future of the industry and the evolving needs of the market and customer base. Brian writes extensively on the topic of BIM and facilities and contributes a bi-monthly column to Revit Community online and is an active blogger. Brian is a frequent speaker and has presented at events such as Autodesk University, IFMA World Workplace, NFM&T and the AIA convention. Brian currently serves as vice-chair for the National Institute of Building Science (NIBS) COBie Task Group (CTG). Prior to joining FM:Systems, Brian was an Industry Marketing Manager in the Building Industry Group at Autodesk. His primary responsibilities included the Go-To-Market execution for the Autodesk Building

Your Presenters
Agenda

From BIM to Non-BIM Operations
How to Approach Data in Operations
The Reasons for a Building Lifecycle Approach to BIM
Why is BIM for Building Owner Operations Different?
How Should you Get Started?
Recommendations and Potential Pitfalls
Questions
Transition to Operations

From BIM to No-BIM WhatSoEver Operations
the hoxton

working from

A new workspace
by The Hoxton

Like working from home, without the distractions.

TELL ME MORE
Operations & Maintenance: From HigherEd to Hospitality

Extended Collaboration Model for Design, Construction & Operations
BIM Level 3 Benefits Are Realized throughout the Building Lifecycle
Facilities Overview

- 4.4 Million SF of buildings
- $2.4B Replacement Value
- 125 acres in urban setting
- Campus population roughly 5000
- Consume 115+ GWh electricity annually
- ~85% generated onsite
- 9 LEED Buildings

GPS Data Tracking
Lifecycle Challenges for Operations Information

- Long time cycles on new projects for operations to come on-line
- Limited understanding of capabilities and deliverables
- Business units from start to finish have different goals

- Incomplete information
- Delayed information transition to operational systems
Caltech: Embracing Facilities Technological Advances

IWMS Implementation

Caltech Facilities

Reporting Organizations  New Employee Information  About Facilities  Service Quick Links

Facilities Subdivisions  Employee Portal  Events  News

Facilities Operations  Design & Construction  Environment Health & Safety  FACILITIES FINANCE AND INFORMATION SYSTEMS

Faculty Housing  Graphic Resources  Mail Services  Security & Parking  Sustainability

Buildings & Grounds  Building Operations Guideline  Campus Ops  Central Plant Operations  Energy Management  Material Request

Service Guide  Project Management  Service Center  Shop Services  Transportation & Motor Pool  Employee Portal  Directory

Presented by:

[Logos]
Traditional vs. Smart Commissioning

Traditional Cx

VS.

Smart Cx

Presented by: AECNext SPAR3D
Putting it into Financial Perspective

Relative Values of Building Lifecycle Costs per Dollar Expended:

- **Planning** - $0.002 [0.2 Cents]
- **Design** - $0.009 [0.9 Cents]
- **Construction** - $0.087 [8.7 Cents]
- **Activation** - $0.032 [3.2 Cents]
- **Operations** - $0.87 [87 Cents]

...area of least expenditure creates the keystone benchmark of data for most expenditures

Industry focuses the most attention on the areas of least expenditure...
BIM for the Building Lifecycle
The Reasons
ACE HOTEL
DOWNTOWN
LOS ANGELES

- Renovation of 1919 United Artists Theater
- 182 Guest Rooms
- Rooftop Pool
- 3 Restaurant & Bar Outlets
- Opened Jan 2014
Project Handoff

Design & Construction

Warranty Period

Operations

Real world
THIS IS NOT WORKING RIGHT NOW,
but thanks for letting it hang out with you for a bit.
For long times.
MacLeamy Curve

CONTROLLABILITY vs COST OF CHANGES

BIM Timing of MAXIMUM Effort

Presented by:
MacLeamy Curve

- Impact Costs
- BIM
- Traditional
- Costs of Changes
- Operational Frustration

Legend:
- Preparation
- Concept Design
- Developed Design
- Approval
- Construction
- Event of Delay
- Legal Action
- Operation Maintenance

Cost Benefit
Image courtesy of HiTechBIM Services
Level Set—Why is BIM for Building Operations Different?

Lifecycle

BIM
End with the Beginning in Mind

These aren’t the models you are looking for
Lifecycle BIM level set

- Must adopt a “Facilities Portfolio Mindset”
- Building elements that need to be maintained
- Building elements that need to be inventoried
- Pragmatic and easily maintainable
What do owners really need?

Owners need BIM data more than graphics.
Lifecycle BIM level set

Please keep in mind!

- “Facilities Portfolio Mindset”
- Many owners are still in “hybrid environments”
- Data security and integrity are paramount
- Supports all downstream FM and RE workflows
- Can’t be disruptive
Lifecycle BIM level set

Potential BIM Lifecycle participants

- Space Planners
- Facility Managers
- BIM/CAD Technicians
- Maintenance Technicians
- Human Resources and Accounting
- AEC Professionals
- Lease Administrators
- Sustainability Managers
- Move Managers
Understanding the Building Owners Requirements and Needs

Getting Started
Start with the 3 questions

Who?  
Who will use the data?

What?  
What data is needed and how will you collect it?

How?  
How will the data be maintained?

Source: Preparing for post occupancy BIM: Three questions owners should be asking

Autodesk – Mies (May 2015)
What data are you going to collect?

- Move thinking from “As-Built” to “As Maintained”

- Understanding the end user allows targeting
  - Asset Data (Make, Model, Serial Number, etc.)
  - Space Data (Room Attributes, Finish Attributes, etc.)
  - Other Use Cases and Personas

- Typically the amount of data to be captured will decrease
When are you going to collect the data?

| 01 | Design & Engineering |
| 02 | GC and Subs |
| 03 | Commissioning |
| 04 | Operations |
| 05 | Design & Engineering |

### Facility Data
- Asset ID
- Short Description
- Design Perform. Data
- Location
- Manufacturer
- Model
- Install Date/By
- Warranty Info
- Serial Number
- Long Description
- Asset Tag No.
What data are you going to collect and how?

How are you going to capture the data?

- **When** is the data available in the process? (Design? Construction? Commissioning?)
- What **stakeholder** can best capture that data?
- How do we aggregate the data?
Once data is collected, there are multiple options for moving it downstream

- Simple Import and Export can support many use cases
- Richer data transfer can be achieved using open data formats such as COBie
- Software Tools that enable bidirectional data exchange
End with the Beginning in Mind

**BIM Design Models**
Developed by the design team with a level of development to relay design intent and generate documentation and details used during construction.

**BIM Construction Models**
Contains a high level of detail used before and during actual construction to reduce uncertainty, improve safety, eliminate conflicts and simulate real world outcomes.

**BIM As-Built Model**
Contains both construction and fabrication data with detailed geometry and multiple disciplines that facilitates turnover from AEC to owners.

**BIM FM Model**
Is derived from the BIM As-Built model removing details, sheets, and other extraneous information, and defining rooms, spaces, assets by unique identifiers. The BIM FM model is then linked with the facility management system for ongoing management.
Supporting Research

BIM FOR FACILITY MANAGEMENT
Version 2.1

Prepared for the BIM/FM Consortium
Authors: Michael Schley, Brian Haines, Kathy Roper and Brendi Williams

In terms of data attribution, to what level of granularity do you track for the majority of your facilities assets?

- We do not currently track our assets
- We track our assets and collect just enough data to uniquely identify the asset
- We track our assets and collect some additional compliance data as required
- We track our assets and collect enough data to uniquely identify the assets as well as some additional performance data
- Other (please describe and if there are exceptions please explain)

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>We do not currently track our assets</td>
<td>9.1%</td>
</tr>
<tr>
<td>We track our assets and collect just enough data to uniquely identify the asset</td>
<td>29.6%</td>
</tr>
<tr>
<td>We track our assets and collect some additional compliance data as required</td>
<td>15.6%</td>
</tr>
<tr>
<td>We track our assets and collect enough data to uniquely identify the assets as well as some additional performance data</td>
<td>32.2%</td>
</tr>
<tr>
<td>Other (please describe and if there are exceptions please explain)</td>
<td>14.4%</td>
</tr>
</tbody>
</table>

Total | 100
Prioritize Your End Goals

Do you need...

1. To satisfy your owner/client/management company/owner?
   a. Do they have parameters you need to achieve (Sustainability, PR, etc. goals)
2. Operational or utility savings?
3. Evaluate the ROI on capital project?
4. Reduce labor costs on your P&L?
5. Want to figure out the big WHY (you don’t really know!)
Build Your Case

1. What is going to help you answer this question?
2. What type of data do you need – location based, time/labor, direct expenses, etc.
3. What systems in place already not being utilized?
4. What can you add to start finding out what that is ripe for the picking?
5. Who can you work with?
Don’t be a data silo
Practical Guidelines and Lessons Learned

Recommendations
Recommendations

• Determine and understand contractual obligations

• Define and collect only the required data

• Identify the system of record for each required key data set

• Identify and include all stake-holders (including end-users)

• Create a culture focused on the importance of data
Build/Borrow a New Model

SOFTWARE DEVELOPMENT

Development  Quality Assurance  Operations  DevOps

DEV  OPS
DevOps & QA: Missed Opportunities?

To optimize DevOps value and maximize QA relevance, QA must extend to the operations phase.

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Service providers’ current focus

Functions currently underserved by service providers

Value from DevOps

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To date, providers’ Agile and DevOps delivery investments have been focused largely on the orchestration layer, generating benefit by merging the testing function with development.

However, these benefits are short-lived, likely to be challenged by clients’ changing demands. The operationalization layer, which includes the ongoing operations of applications, is largely underserved.

To derive the most value from DevOps initiatives, providers should break the silos between the applications and infrastructure teams and drive cohesion, helping enterprises to achieve their original DevOps objectives.

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*Everest Group* Independent Testing Services – PEAK Matrix™ Assessment & Profiles Compendium: “Reports of QA’s Death are not Exaggerated”
Questions?
Thank You

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