Status of BIM Adoption in the US

James Vandezande
Chair of BIMForum-buildingSMART US
Director of Design Technology at HOK
Overview

- Scope of the US Construction Industry
- Adoption of BIM in the US
- Challenges in standardizing BIM use
- Successes & future plans for the US Chapter & BIMForum
Overview

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Scope of USA Construction Industry

- $1 trillion+ per year
- 650,000 employers | 6,000,000+ employed
- Every $1 billion in construction spending generates or maintains:
  - $3.4 bn in gross domestic product (GDP)
  - $1.1 bn in personal earnings
  - 28,500 jobs

Source: US Department of Labor and Associated General Contractors of America
Scope of USA Construction Industry

26,000 member companies

90,000 professionals

30,000 professionals

~400,000 professionals out of 6 mil: 6.6%

10,000 BIMForum members: 0.1%
Adoption of BIM in US

- The use of BIM is widespread in the US
- Most disciplines use BIM
- Applicable to most projects
Adoption of BIM in US

Survey Among Practitioners - % of BIM Users

<table>
<thead>
<tr>
<th>Year</th>
<th>BIM Users</th>
<th>Non Users</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>83</td>
<td>17</td>
</tr>
<tr>
<td>2009</td>
<td>51</td>
<td>49</td>
</tr>
<tr>
<td>2012</td>
<td>19</td>
<td>81</td>
</tr>
</tbody>
</table>

Adoption of BIM in US

BIM Implementation Levels (2009–2014)

- LIGHT: Less Than 15% of Projects
- MEDIUM: 15% to 30% of Projects
- HEAVY: 31% to 60% of Projects
- VERY HEAVY: More Than 60% of Projects

Adoption of BIM in US

Percentage of Players Using BIM on More Than 60% of Their Projects


## Adoption of BIM in US

### Planned BIM Investments Over Next Two Years Rated as High/Very High in Importance

*Source: McGraw Hill Construction, 2013*

<table>
<thead>
<tr>
<th>Planned BIM Investments</th>
<th>North America</th>
<th>All Regions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing Internal Collaborative BIM Processes</td>
<td>48%</td>
<td>49%</td>
</tr>
<tr>
<td>BIM Training</td>
<td>44%</td>
<td>45%</td>
</tr>
<tr>
<td>New/Upgraded Tablets/ Mobile Devices</td>
<td>42%</td>
<td>38%</td>
</tr>
<tr>
<td>BIM Software</td>
<td>41%</td>
<td>41%</td>
</tr>
<tr>
<td>New/Upgraded Desktop Machines</td>
<td>28%</td>
<td>34%</td>
</tr>
<tr>
<td>Software Customization/ Interoperability Solutions</td>
<td>26%</td>
<td>32%</td>
</tr>
</tbody>
</table>

Common Use Cases

- 3D Coordination

Example work presented at 2018 BIMForum Conference
Common Use Cases

- Phasing/Work Planning

Example work presented at 2018 BIMForum Conference
Common Use Cases

- Pre-Fabrication

Example work presented at 2018 BIMForum Conference
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Challenges in standardizing BIM use

- The “BIM Hangover”
- Lack of government support
- Standards or Education?
- Scale of country-wide industry
The “BIM Hangover”

- Not many new things to learn
- Tools are not advancing as they were 7+ years ago
- One software has a near monopoly
- Teams are too busy
Teams are too busy…
Government-backed Support?

- De-regulation
- Smaller government (less funding)
- Industry-based solutions
- No country-wide BIM mandate
Education

- Our members want “Standards”
- Likely means they want “Process/Tool Training”
  - Certificate programs
  - Professional certification (future)
- …requires $$$ to develop
Regional Outreach

- Scope of outreach
  - Regionalization – local/state chapters
- Targeted messaging
  - Senior level (decision makers)
  - Specialists/experts
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- **Successes & future plans for the US Chapter & BIMForum**
Target Audience:
- AEC Industry Professionals
- Owners, Organizations & Agencies

Objectives:
- Education
- Empowerment
- Advocacy
- Experimentation and sharing of best practices
BIMForum | buildingSMART: US

- Annual Conferences
- Domain Working Groups
- Webinars
- Publications
- Alignment with government agencies…
Annual Conferences

- Narrating and advancing the evolution of BIM

- Themes of past conferences:
  - Optimization of Design
  - Optimization of Construction
  - BIM Deliverables
  - BIM and Facility Management
  - The Return on Investment for BIM
  - Integrated Project Delivery and BIM
  - Façade Systems and BIM
Domain Working Groups

- Legal
- Constructor
- Designer
- Trade Contractor
- Academic → AIC (Academic Interoperability Coalition)
- Technical (software implementation & development)
Publications

- **Level of Development (LOD) Specification**
  - Consensus-based specification
  - Developed by design+build+fabrication experts
  - Framework for defining required attribute data in BIM deliverables
  - Dictionary for levels of modeling
  - Guide to levels of information (attributes)

Download for free: bimforum.org/LOD
Publications

- **BIM Execution Planning Guide**
  - Written for small projects & companies
  - Practical guidance for getting started with BIM
  - Simplified BIM Execution best practices

Please visit: bimforum.org/BXP
Publications

- Professional Guide to 3D Coordination
  - Under development, expected in 2019
  - Best practices based on real-world experience
  - Focusing on RESULTS and model handover
Future Initiatives

- Continuing to promote Open BIM
- Studying models as contract deliverables
  - BIM-enabled code review
  - Insurance and Legal reform
- Educational certificate programs
- Reporting & Metrics framework for BIM-enabled projects
  - Similar to Architecture 2030 Challenge
  - Establish baseline and ongoing measurement of industry improvement
THANK YOU!

QUESTIONS?