BIM Adoption in Private sector

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Agenda

- Introduction
- Methodology
- BIM background information
- Cost and Benefit analysis
- Challenges
- Future trends
- Conclusion
- Q & A

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Project introduction:

- Evolution in Architecture: Hand-drawn drawings have turned into the use of computer architectural models.
- Why it is important for private companies to use BIM.
- Adoption Insights: Unique perspective on how private companies adopt technology.
- Impact Analysis: Examines how BIM/CIM affects project execution, financing, planning, and asset management.

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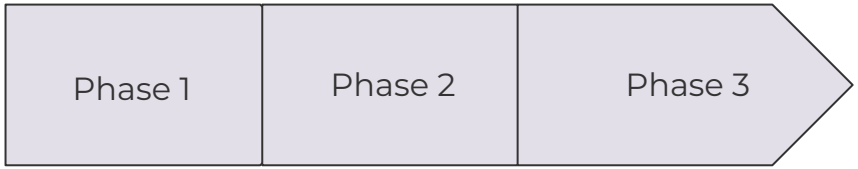
Methodology

- Phase I: Understanding the BIM/CIM, Drafting questionnaire
- Phase II: Identifying the interviewees and scheduling the interviews. Summarizing the interviews and drawing insights from it
- Phase III: Conducting the secondary reviews.



What is BIM?

- Building Information Modeling
- BIM integrates key information about a building's design, construction, and operation into one cohesive digital model, enabling architects, engineers, and construction professionals to collaborate more effectively.
- Key Features:

A. Different dimensions
B. Lifecycle Management
C. Data-Rich Models
D. Collaboration

Top Software used in BIM

- Autodesk Revit: One of the most popular BIM tools, Revit allows for 3D modeling and supports design, collaboration, and documentation of architectural, structural, and MEP (mechanical, electrical, plumbing) systems.

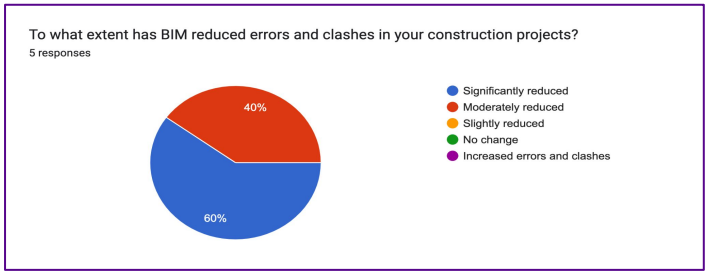
- Bentley Systems MicroStation: Used for 2D and 3D modeling, it offers advanced tools for architects and engineers in infrastructure design and documentation.

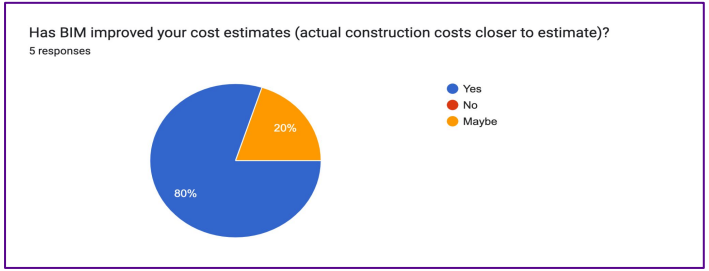
- Graphisoft Archicad,Autodesk Navisworks, Trimble Tekla Structures, BIM 360, Vectorworks Architect, etc.

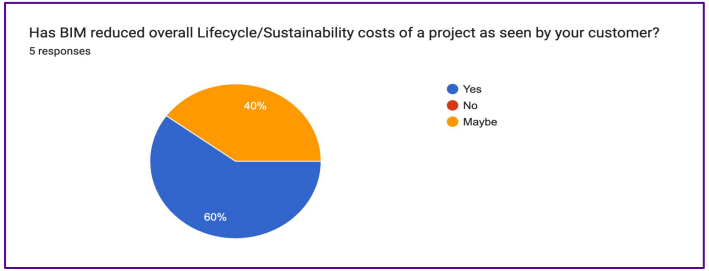
Benefits

Benefits of BIM

- Accuracy
- Clash Control
- Asset management
- Quality optimization
- Enhance Visualization
- Efficiency improvement
- Enhance internal collaboration
- Streamlines the construction process
- capabilities throughout the project lifecycle
- Enhance ability to manage and utilize spatial data effectively







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Types of Costs

Direct Costs

- Software Licenses
- Hardware Requirements
- Training and Education
- Implementation Service
- Integration with Existing systems
- Data Collection and Modeling
- Maintenance and Support
- Labor Cost

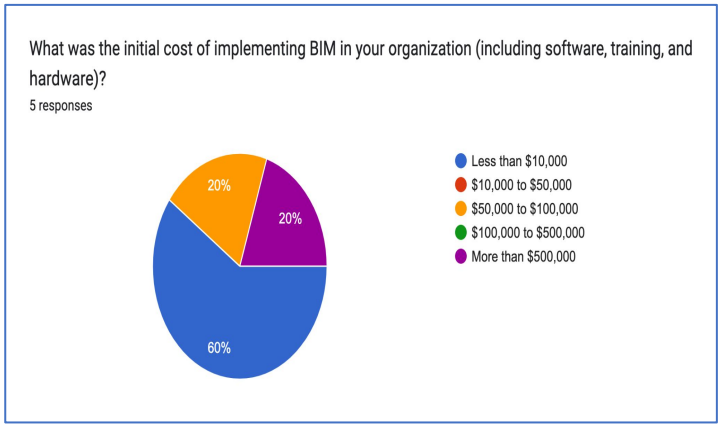
Indirect Costs

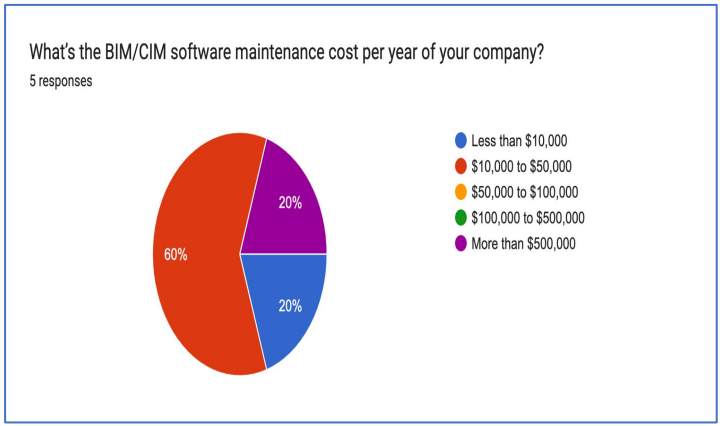
- Utilities Fee
- License Fee (If company purchase a whole license plan)
- Office Rent Fee
- Salaries of Supports staff

Other Costs

- Unforeseen Challenges and Technical Issues
- Time in Employee Training and Skill Development

Firms	Initial Cost of implementing BIM	BIM/CIM SW Maintenance Cost (Per Year)
Large Engineering & Architecture Firm	Less than $10,000	Less than $10,000
Arup	More than $500,000	More than $500,000
Enstoa	Less than $10,000	$10,000 to $50,000
Greenman-Pedersen, Inc.	$50,000 to $100,000	$10,000 to $50,000
Turner	Less than $10,000	$10,000 to $50,000





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Costs-Benefit Analysis

1. Unforeseen Challenges and Technical Issues
2. Time in Employee Training and Skill Development

1. Utilities Fee
2. License Fee (If company purchase a whole license plan)
3. Office Rent Fee
4. Salaries of Supports staff

1. Software Licenses
2. Hardware Requirements
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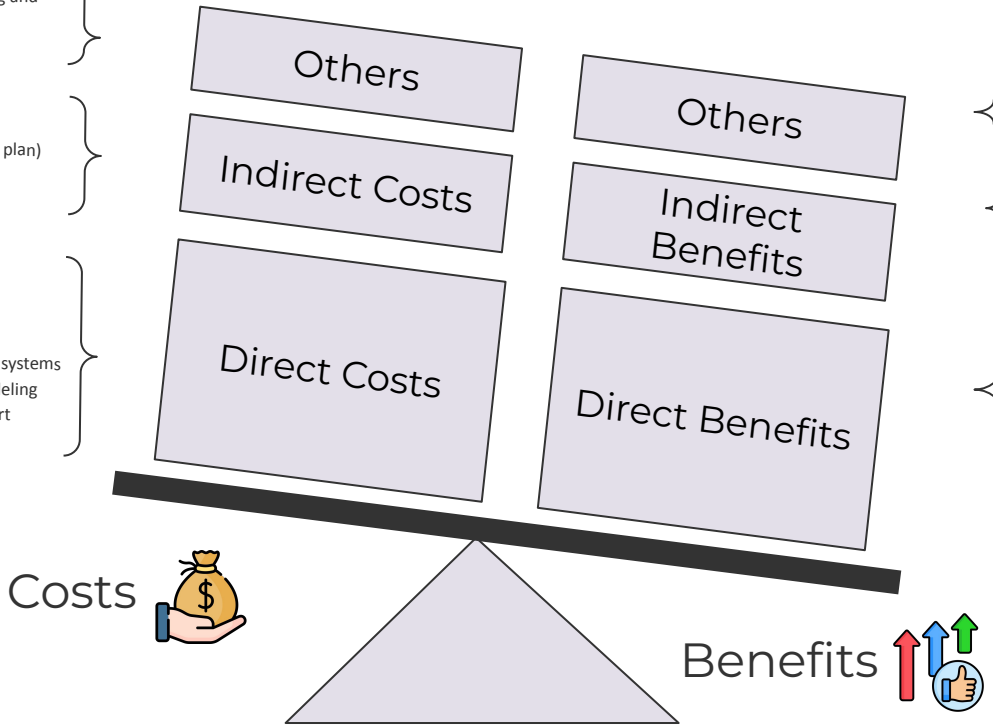
8. Labor Cost



1. Long-term Value and Resilience

1. Enhanced Client Satisfaction and Reputation
2. Increased Market Competitiveness

1. Accuracy
2. Clash Control
3. Accuracy and precision
4. Early Problem Identification
5. Reduce duplication & error
6. Asset management
7. Quality optimization
8. Enhance Visualization
9. Efficiency improvement
10. Enhance internal collaboration
11. Streamlines the construction process
12. capabilities throughout the project lifecycle
13. Enhance ability to manage and utilize spatial data effectively

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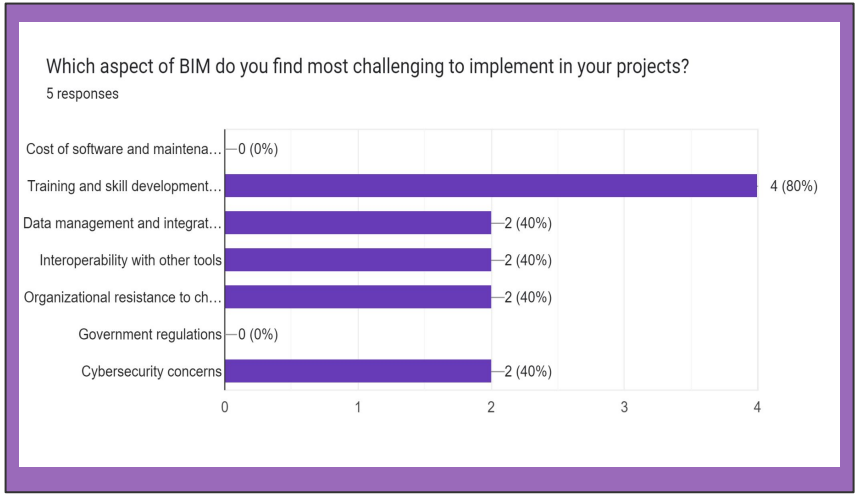
Challenges

- Standardization
- Cyber Security
- User Adoption & Value Recognition
- Cost & Complexity
- Technological & Operational Integration
- Legal & Regulatory Compliance

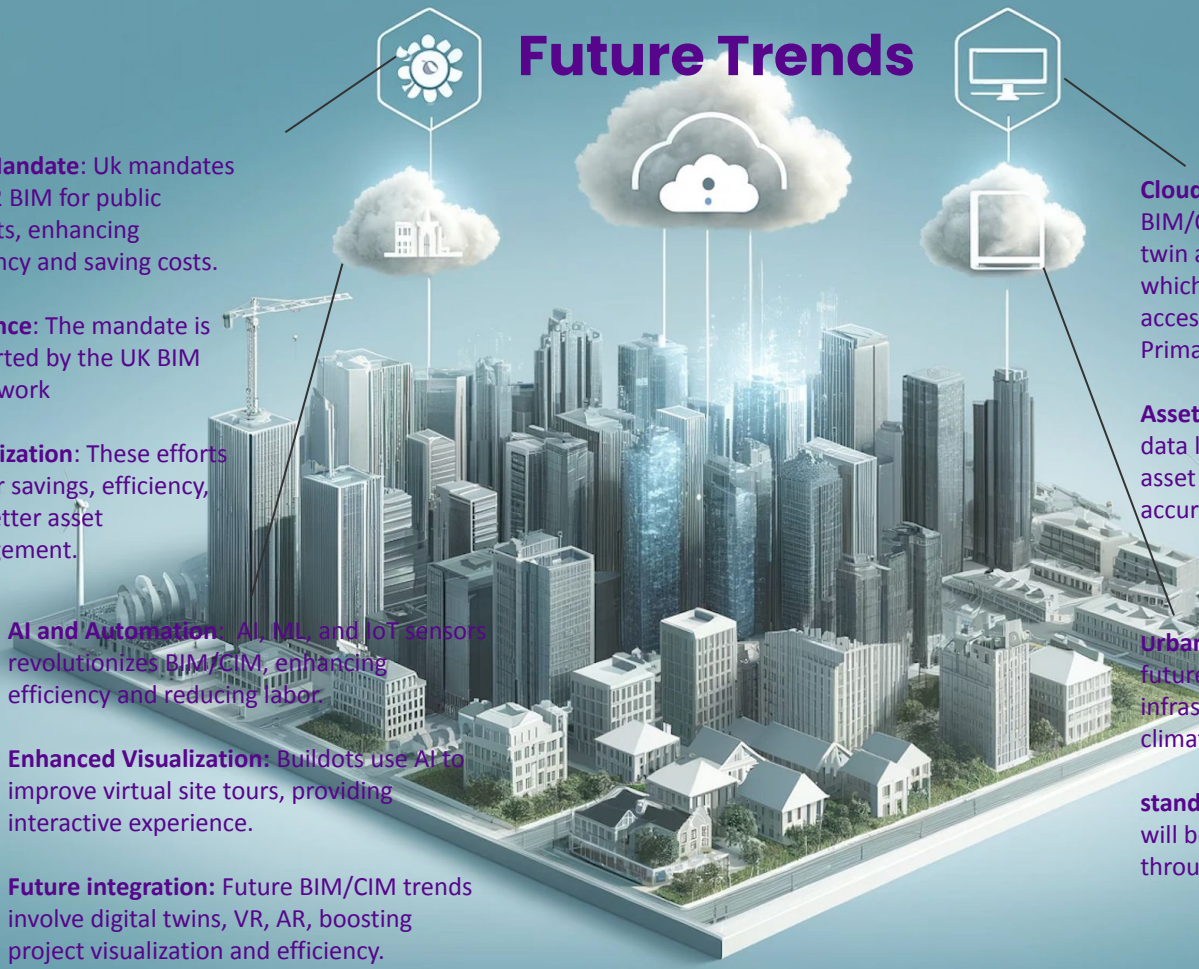


Future Trends

BIM Mandate: Uk mandates Level 2 BIM for public projects, enhancing efficiency and saving costs.

Guidance: The mandate is supported by the UK BIM Framework

Digitalization: These efforts aim for savings, efficiency, and better asset management.



AI and Automation: AI, ML, and IoT sensors revolutionizes BIM/CIM, enhancing efficiency and reducing labor.

Enhanced Visualization: Buildots use AI to improve virtual site tours, providing interactive experience.

Future integration: Future BIM/CIM trends involve digital twins, VR, AR, boosting project visualization and efficiency.

Cloud and digital twin: Future BIM/CIM trends will integrate digital twin and cloud-based technology, which enhance collaboration, accessibility, and real time updates. Eg: Primavera P6 software

Asset management: incorporating with data layers into digital twin improve asset management capabilities by accurately tracking assets.

Urban areas: BIM/CIM will shape future urban efficiency and infrastructure needs especially amid climate change.

standardization and automation: it will be more common and advance through initiatives like GPS rollout.

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Conclusion

- Substantial Benefits: BIM/CIM offers significant benefits, such as enhanced project management, reduced errors, and increased operational efficiency, leading to cost reductions and improved quality.
- Challenges Faced: The adoption of BIM/CIM faces challenges, including substantial initial investments, resistance to change, and the need for standardized practices.
- Future Prospects: Integrating BIM/CIM with AI, ML, and digital twins will revolutionize the industry, improving model precision, data management, and decision-making.

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