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Overcoming Resistance to BIM

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Overcoming Resistance To BIM: *Aligning A Change Management Method With A BIM Implementation Strategy*





Introduction

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Topics Covered

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1. Motivation for Research
2. Statement of the Problem
3. Research Question
4. Project
5. Findings
6. Conclusion



Motivation for Research

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Roadmap to Digital Transition for Ireland's Construction Industry 2018-2021





“Without Vision you will have confusion; without Skills you will foster anxiety; without Incentives you will meet Resistance; without Resources you will breed frustration; without a Plan you’ll go on to make false starts.”



Statement of the problem

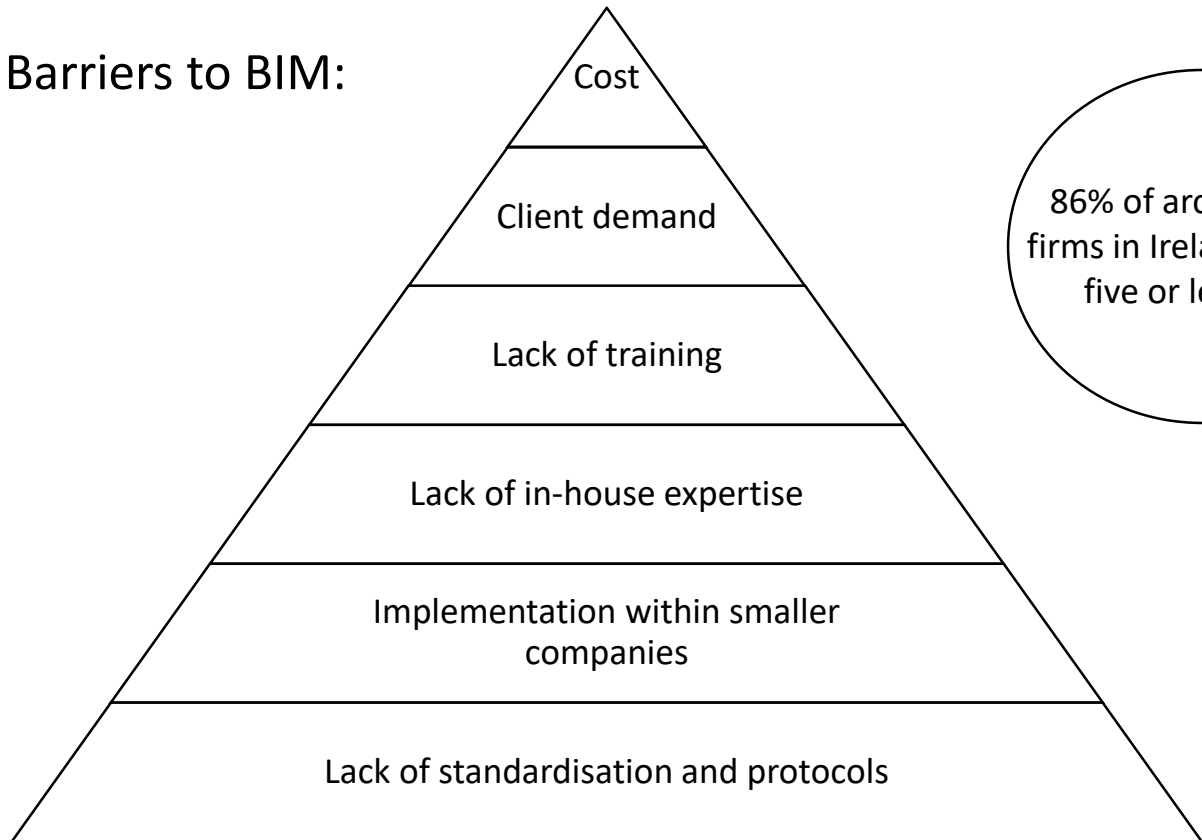
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Barriers to BIM:



86% of architectural firms in Ireland employ five or less staff





Changes that BIM brings to a company

BIM Management Systems

Defining level of BIM within an organisation
Mentoring of BIM
New Roles – BIM Coordinator / Manager
Adoption of Industry standards

BIM Measurements

Level of knowledge within an organisation
Attitudes towards BIM
Key performance indicators

BIM Skills

Competencies and framework agreements for BIM coordinators / managers

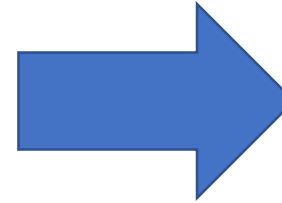
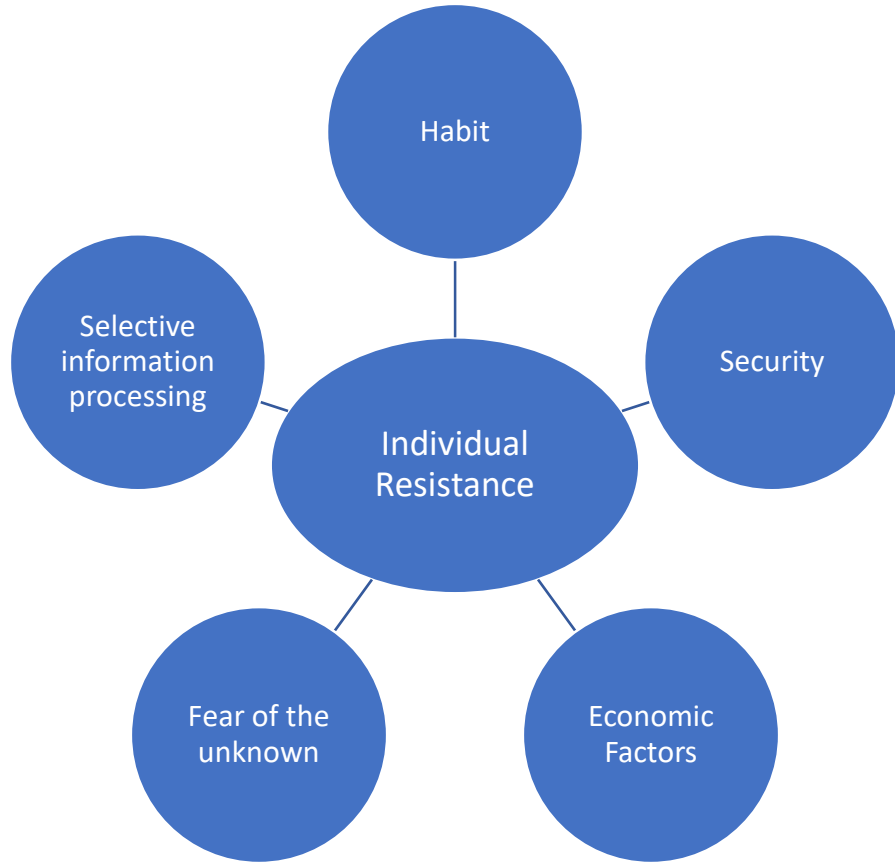
BIM Education

BIM training courses

Adopting BIM without a plan
is like taking a trip unaware
of the baggage that can slow
you down



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Awareness

Desire

Knowledge

Ability

Reinforcement

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“What if, and I know this sounds kooky, we communicated with the employees.”



Research Question

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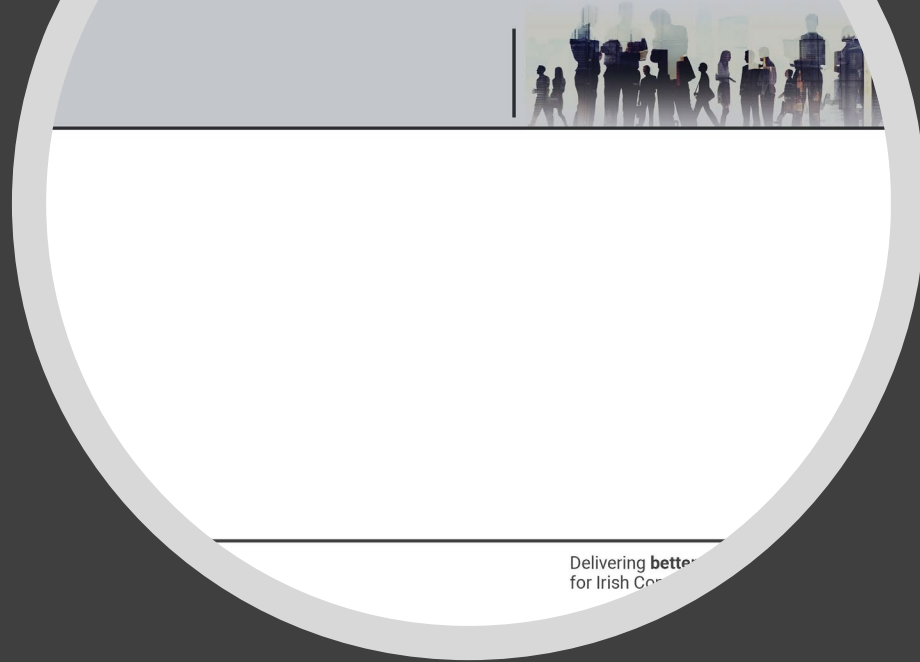
How can small to medium size companies within the Architectural, Engineering, and Construction (AEC) industry in Ireland respond to both organisational and individual resistance to the implementation of BIM processes in practice?



Project

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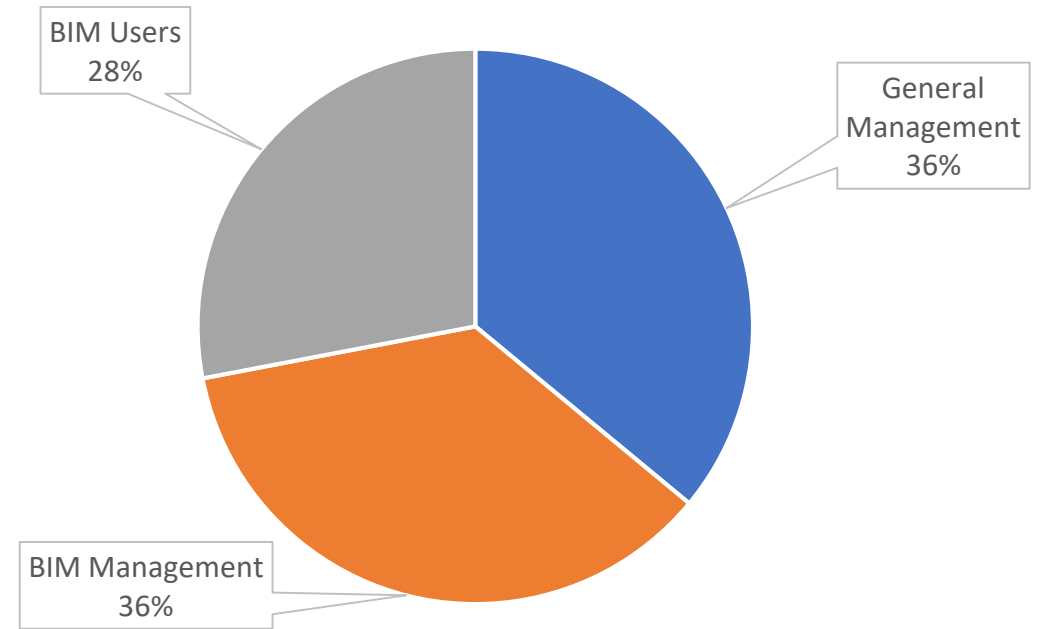


Pre-Interview Questionnaires

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Interviewee Company Position



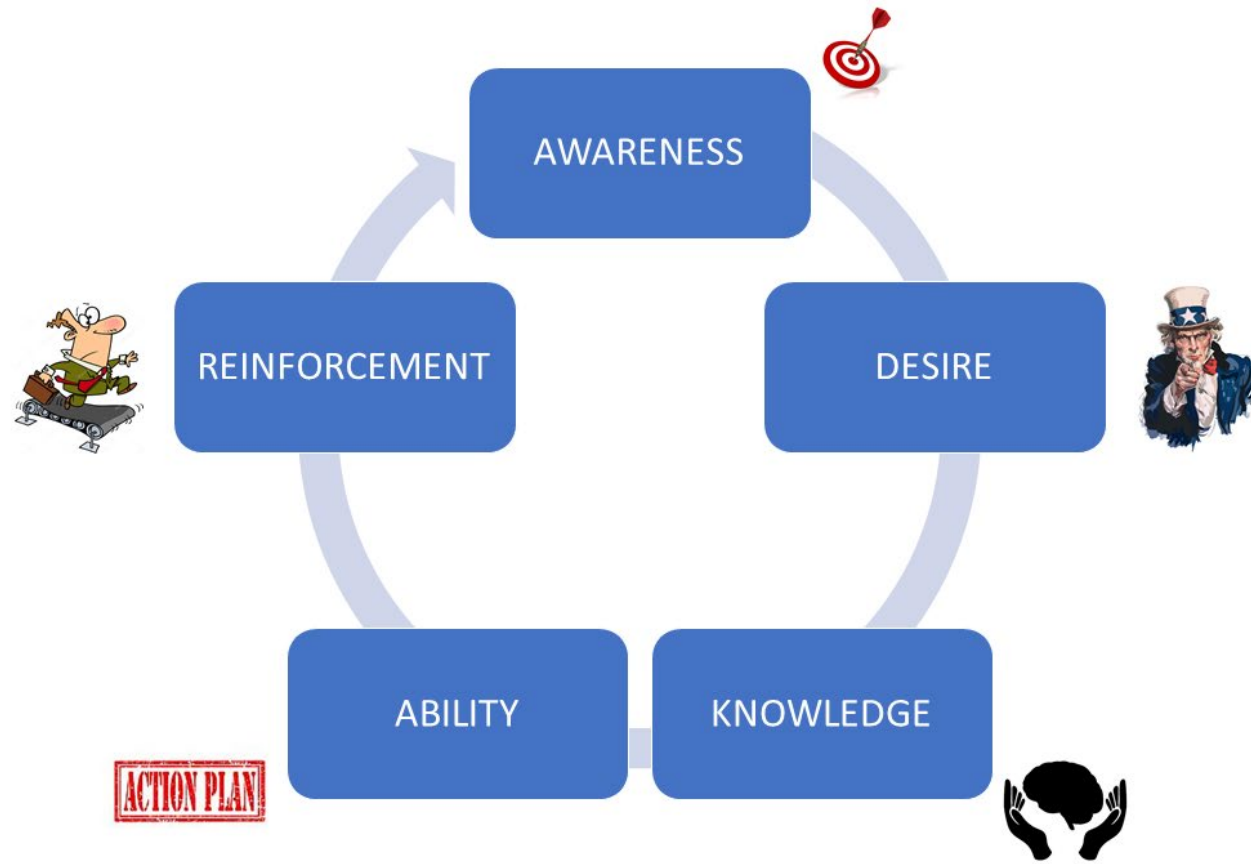


Findings

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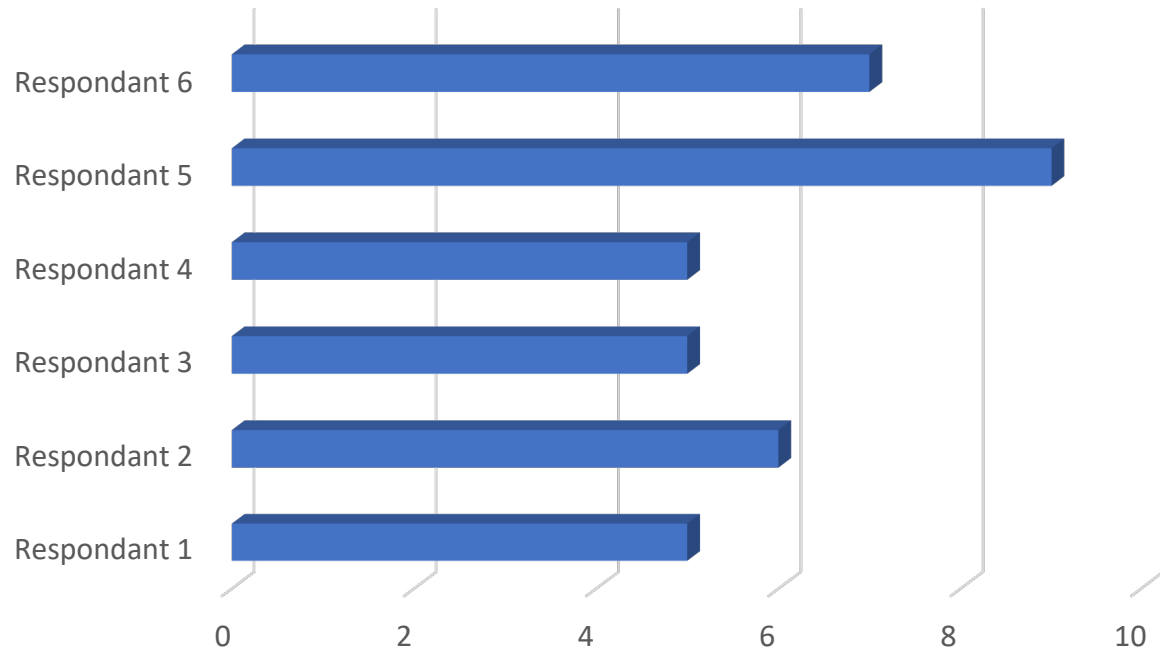
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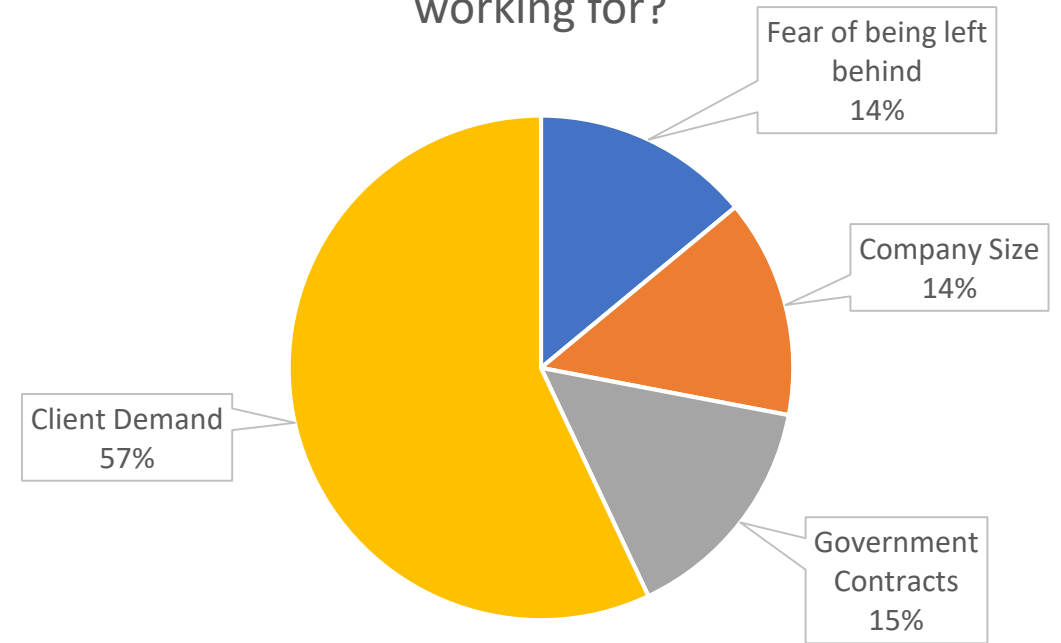
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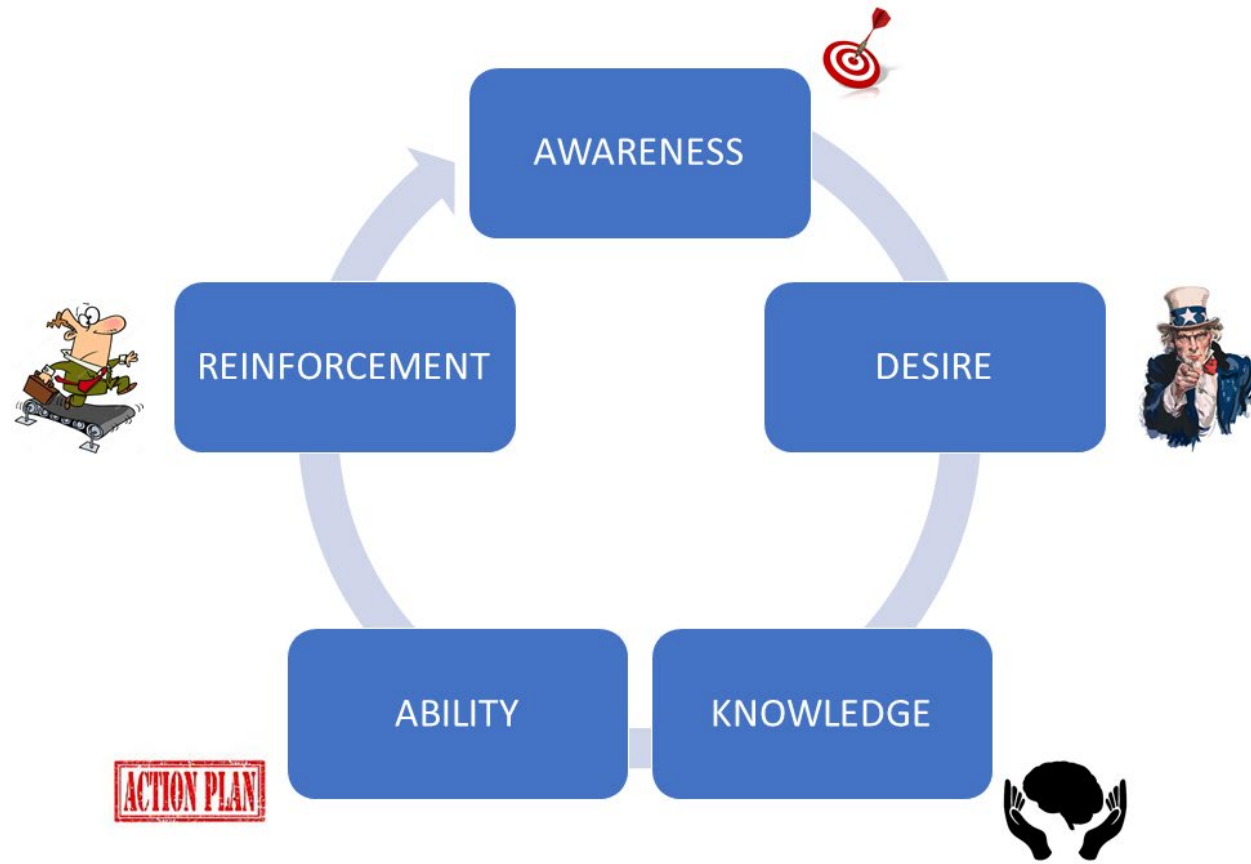
On a scale of 1-10 how well do you feel you understand your organisation's vision for BIM?



Why do you feel there is a need to implement BIM within the company you are currently working for?



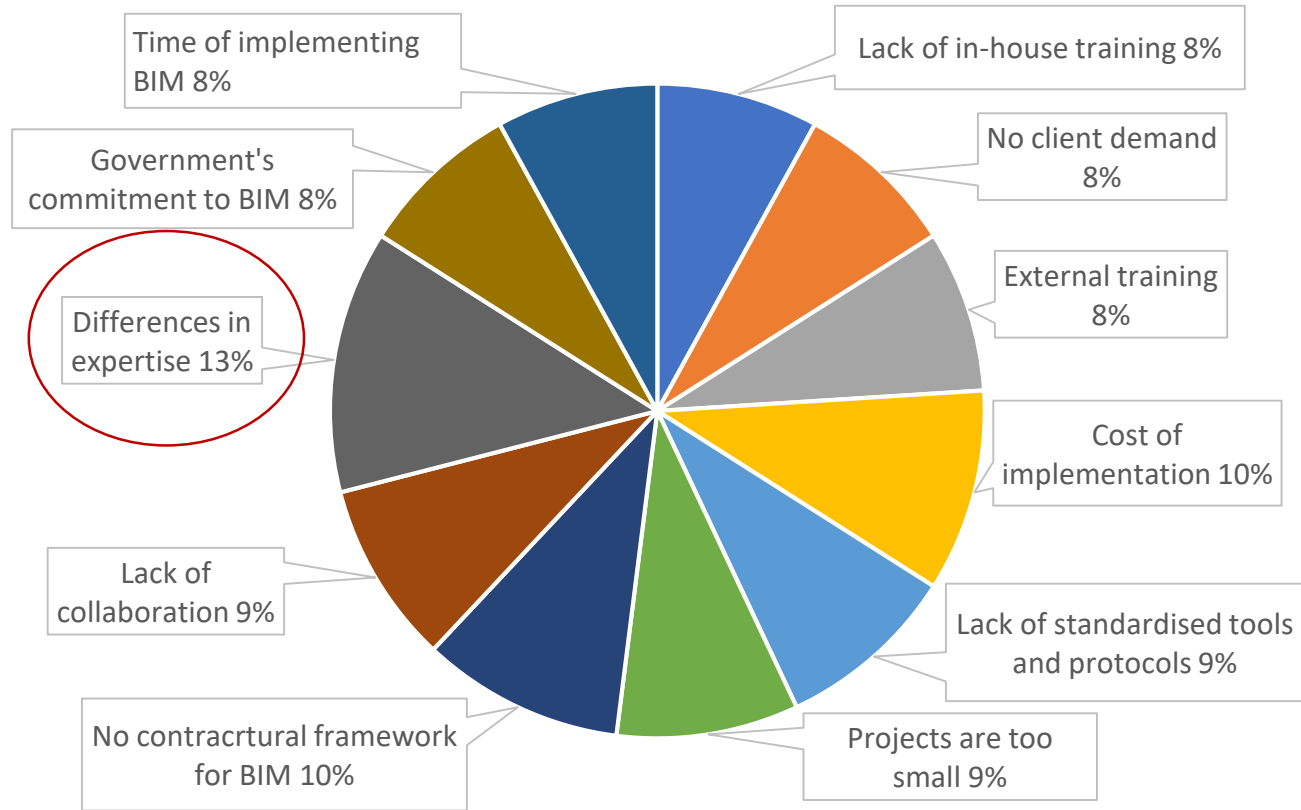
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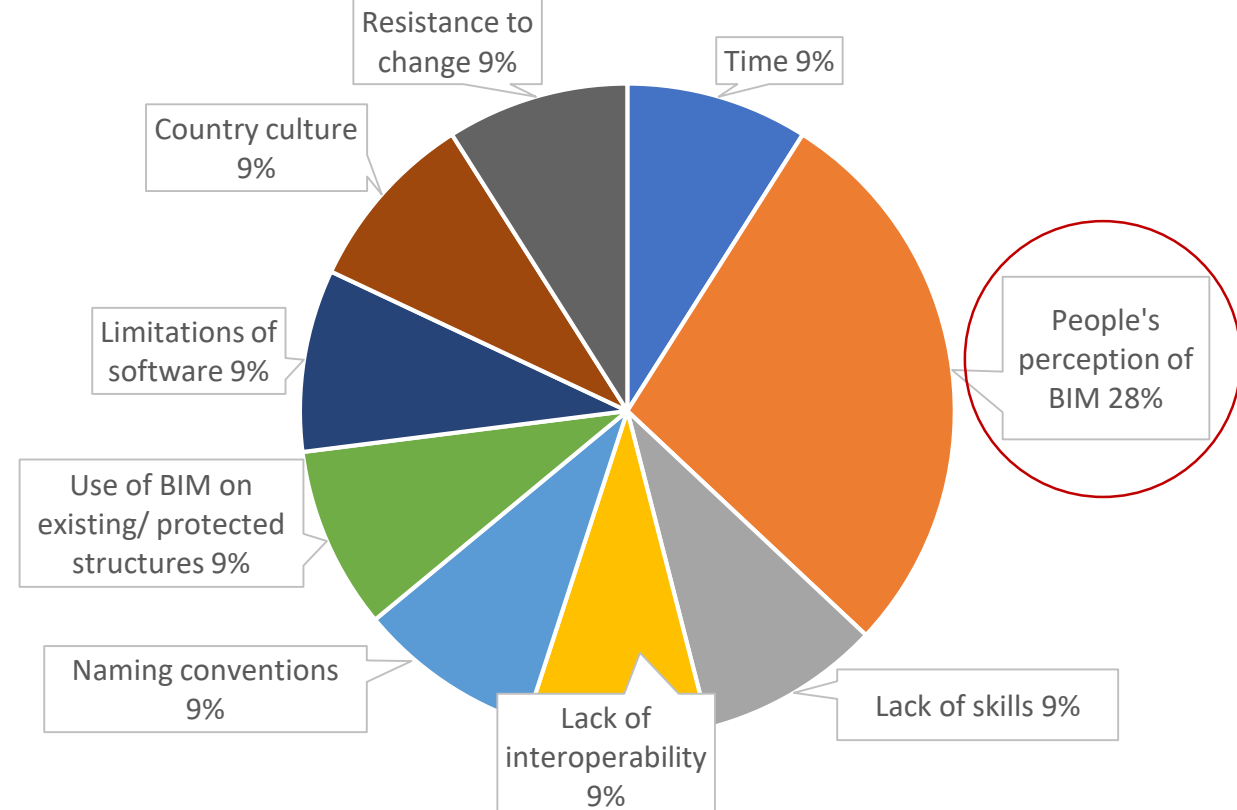
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What do you feel are the most significant barriers to BIM adoption?



What barriers have you experienced with BIM implementation thus far?



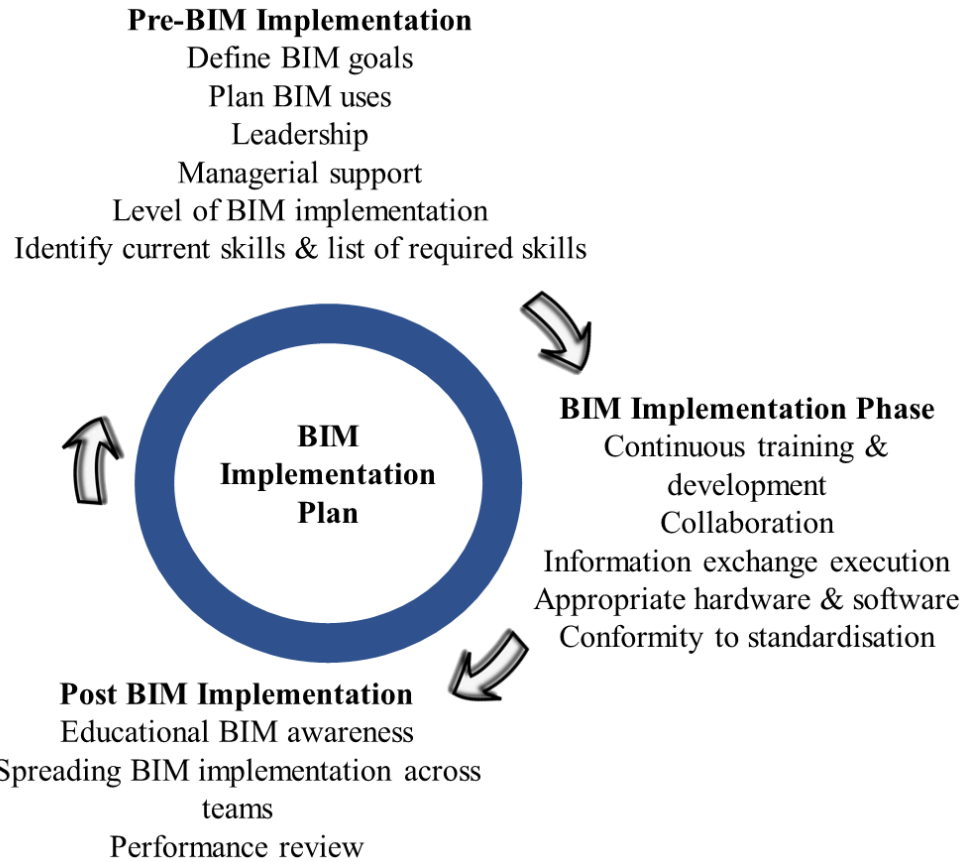


Conclusion

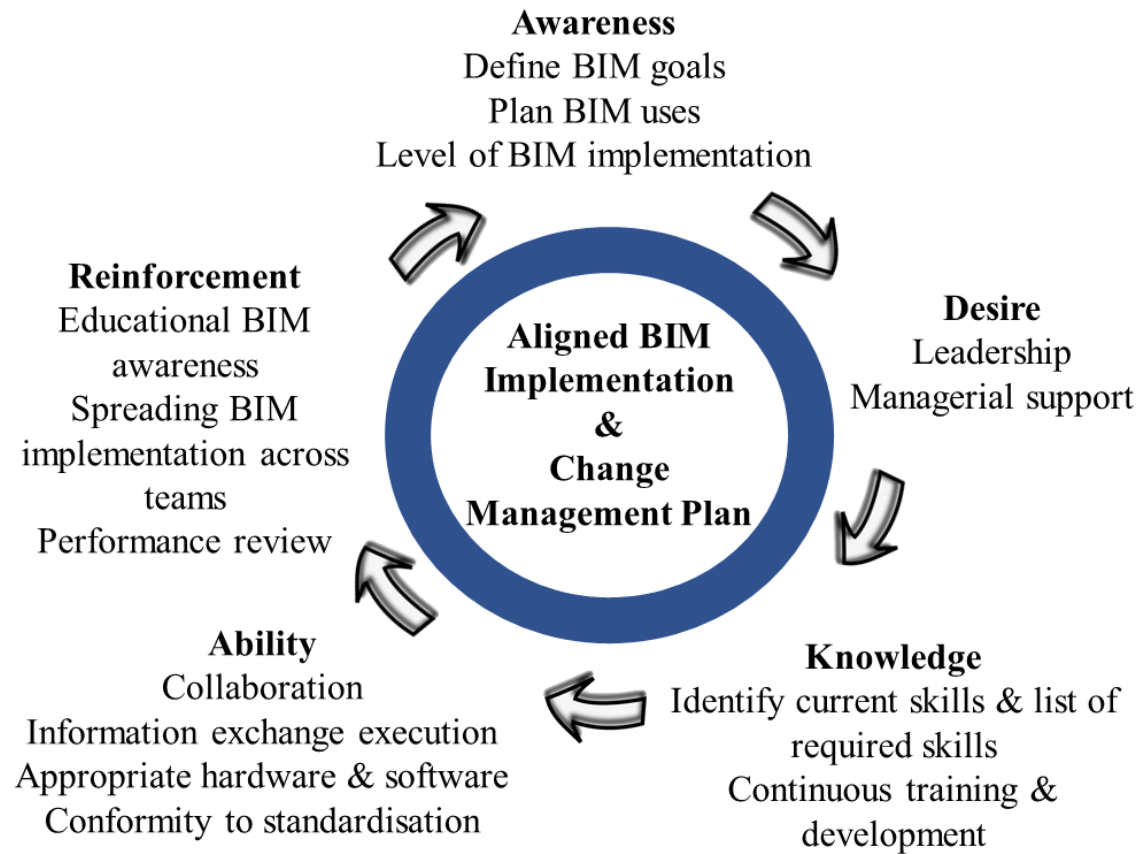
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- N. B. Council, "Roadmap to Digital Transition For Ireland's Construction Industry 2018-2021," 2017.
- M. Farmer, "The Farmer Review of the UK Construction Labour Model ", 2016.
- E. Ireland. "SME Definition." <https://www.enterprise-ireland.com/en/about-us/our-clients/sme-definition.html> (accessed 24 March, 2019).
- E. a. I. Publications, "The new SME definition - User guide and model declaration," 2005. [Online]. Available: <https://www.enterprise-ireland.com/en/About-Us/Our-Clients/SME-Definition-Guide.pdf>
- K. Flemming, P. Flood, and J. Bosak, "Strategic leadership of architectural firms in Ireland: The role of emotion management and innovation," Doctor of Philosophy, Dublin City University, Dublin City University, 2011.
- H. Lindbald and S. Vass, "BIM implementation and organisation change: A case study of a large Swedish public client," presented at the 8th Nordic Conference on Construction Economics and Organisation, 2015.
- R. Deutsch, BIM and Integrated Design: Strategies for Architectural Practice. New York: Wiley, 2011.
- A. Hore, B. McAuley, and R. West, "Building Information Modelling in Ireland 2017," 2017.
- R. Howard, L. Restrepo, and C.-Y. Chang, "Addressing individual perceptions: An application of the unified theory of acceptance and use of technology to building information modelling," International Journal of Project Management, no. 35, pp. 107-120, 2017.
- S. Laumer and A. Eckhardt, "Why Do People Reject Technologies: A Review of User Resistance Theories " in Information Systems Theory: Explaining and Predicting Our Digital Society vol. 1. Centre of Human Resources Information Systems, University of Bamberg: Springer Science + Business Media, 2012, ch. 4, pp. 63-86.
- NBS, "National BIM Report 2018," 2018.
- T. S. o. C. S. Ireland, "Irish Construction Prospects to 2016," 2015.

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- M. Uddin and A. R. Khanzode, "Examples of How Building Information Modelling Can Enhance Career Paths in Construction," Practice Periodical on Structural Design and Construction, vol. 19, pp. 95-102, 2014.
- W. WU and R. R.A. ISSA, "Key Issues in Workforce Planning and Adaptation Strategies for BIM Implementation in Construction Industry ", 2014.
- F. Marley, "Exploring the impact of the aging population on the workforce and built environment," The Chartered Institute of Building, 2015. [Online]. Available: <https://policy.ciob.org/wp-content/uploads/2016/01/CIOB-research-Exploring-the-impact-of-the-ageing-population-on-the-workforce-and-built-environment.pdf>
- C. Dictionary, "Organisational Change," ed, 2019.
- R. McGuckian, "Communicating for Organisational Change," Doctor of Philosophy, School of Business, Dublin City University 2000.
- A. Watson, "BIM - A driver for change," presented at the International Conference on Computing in Civil and Building Engineering, 2010. [Online]. Available: <http://www.engineering.nottingham.ac.uk/icccbe/proceedings/pdf/pf69.pdf>.
- B. Succar, "Building information modelling framework: A research and delivery foundation for industry stakeholders," Automation in Construction, no. 18, pp. 357-375, 2009.
- T. M. Froede, "The impact of emerging information technology on project management for construction," Automation in Construction, no. 19, pp. 531-538, 2010.
- J. Dudovskiy, "Implications of Individual Resistance to Change," 2nd July 2012,
- D. C. Yuh-Shy, "Individual Resistance from Employees to Organizational Change," The Journal of Global Business Management, Unknown.
- P. Inc. "An introduction to change management guide." <https://empower.prosci.com/introduction-to-change-management-guide> (accessed 24th April, 2019).
- A. M. Ahmad, P. Demian, and A. D.F Price, "BIM implementation plans: a comparative analysis," presented at the Annual ARCOM Conference, Edinburgh, UK, 2012.



Thank you

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