

Gathering23

Accelerating BIM adoption

CitA BIM Gathering 2023

An investigation Into Ireland's BIM Skills Gap

by Guadalupe Centanni, Arcadis DPS Group

GUADALUPE CENTANNI

Arcadis DPS Group, Ireland - Architect

TU Dublin, Ireland - MSc in Applied BIM Management (NFQ Level 9)
2020 - 2023

Double Degree Diploma:

Politecnico di Torino, Italy - M Arch (NFQ Level 9)

Universidad de Belgrano, Argentina - BA Hons Arch (NFQ Level 8)
2014 - 2019



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1. Introduction

There is a shortage of professionals with a deep understanding of BIM and data management in Ireland, which is one common barrier that firms encounter when transitioning into BIM.

The absence of a Mandate has posed a challenge to achieving a seamless and efficient implementation of BIM in Ireland. In addition, it affected the clients' tendency to request the adoption of BIM in their projects.

BIM Adoption Challenges:

- Client reluctance to embrace BIM processes.
- Lack of software programming expertise.
- Initial costs of BIM software.
- Investment in computer upgrades.
- Employee training.
- Technical support.

Introducing a BIM roadmap that aligns change management techniques with a BIM implementation plan can help bridge the gap between stakeholders and ensure the successful incorporation of BIM within an organisation.

2. BIM Skills & Their Importance

BIM = Process that generates and assembles all the building's data and enables its management during the entire project.

BIM Skills = Knowledge, abilities, and expertise required to effectively use BIM software and processes in the field of architecture, engineering, and construction.

According to the World Economic Forum (WEF), the **shortage of employees** possessing adequate BIM skills within the construction industry and among its clients is **slowing down the global adoption of BIM**.

“The demand for highly skilled specialists is expected to outstrip supply over the next 6 years”



3. BIM Skills Challenges within Ireland

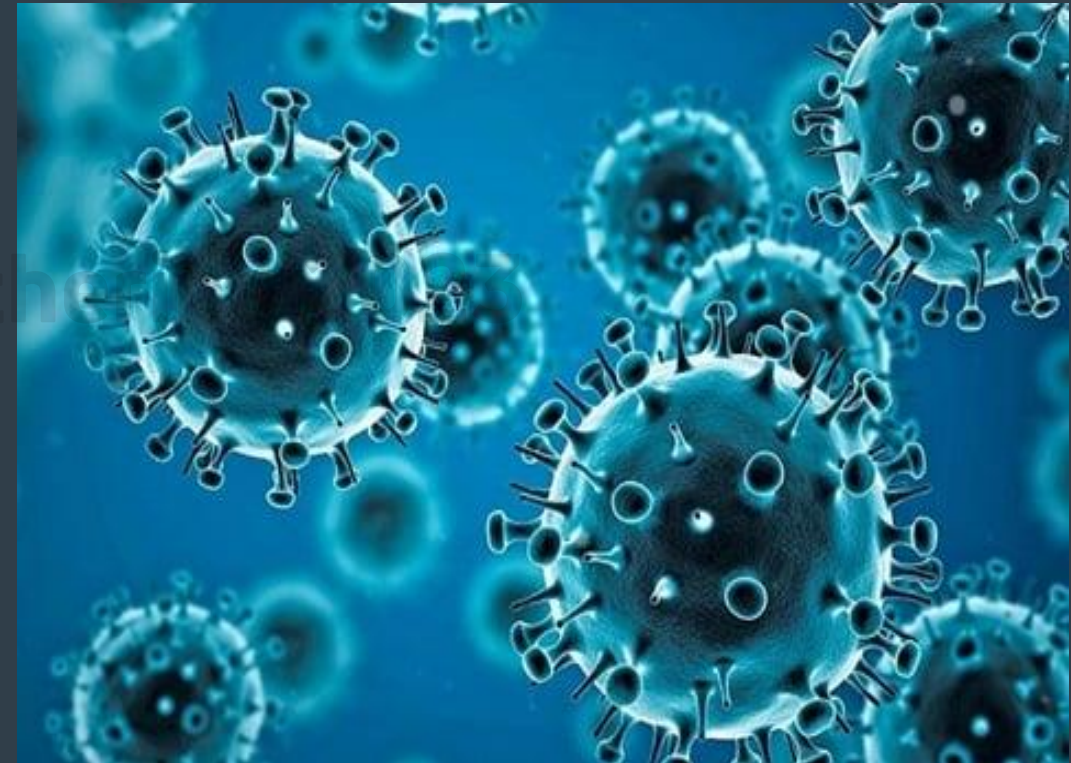
- The economic recession of 2009 negatively affected the Irish construction sector's performance. The most affected areas in the country have been “skills” and “education”.
- Organisations need to improve their change management strategies to reduce employee resistance.
- In order to upgrade an organisation's workflow, a top-down approach from management would be essential.
- The top barriers of BIM adoption in Ireland, includes the absence of in-house expertise, lack of client demand, and training, as well as lack of a mandate.
- Different stages of BIM implementation between clients, contractors, and manufacturers.

4. Ireland's Digitalisation Approach

- The National BIM Council (NBC) introduced the **2018-2021 Roadmap for Digital Transition**, which contains a training pillar to deliver a broad awareness and upskilling learning framework for educators and the industry.
- **Digital Technology in Public Works Projects Strategy** – Aimed to increase the use of digital technology in particular categories of public works projects over a 4-year timeframe ending in 2021. **2023 Update:** BIM requirements will be introduced into the Capital Works Management Framework (CWMF) from January 2024.
- **Project Ireland 2040** - This strategy established a €500m Disruptive Technologies Innovation Fund (DTIF) to facilitate research and innovation growth, higher education, and further education and training (FET) development.
- **Build Digital Project** - created to encourage higher levels of innovation and continuous improvement approaches within the construction sector in Ireland. One of its main priorities is to enhance the skills and capabilities of the AEC workforce to mitigate the skills gap throughout all levels and areas of specialization.

COVID-19

- Forced the Irish industry to re-evaluate lifestyles and work practices.
- Heightened the importance of digital technologies.
- Prompted several organisations that previously underutilized BIM to recognize its significance as a vital component to be incorporated into their business models.



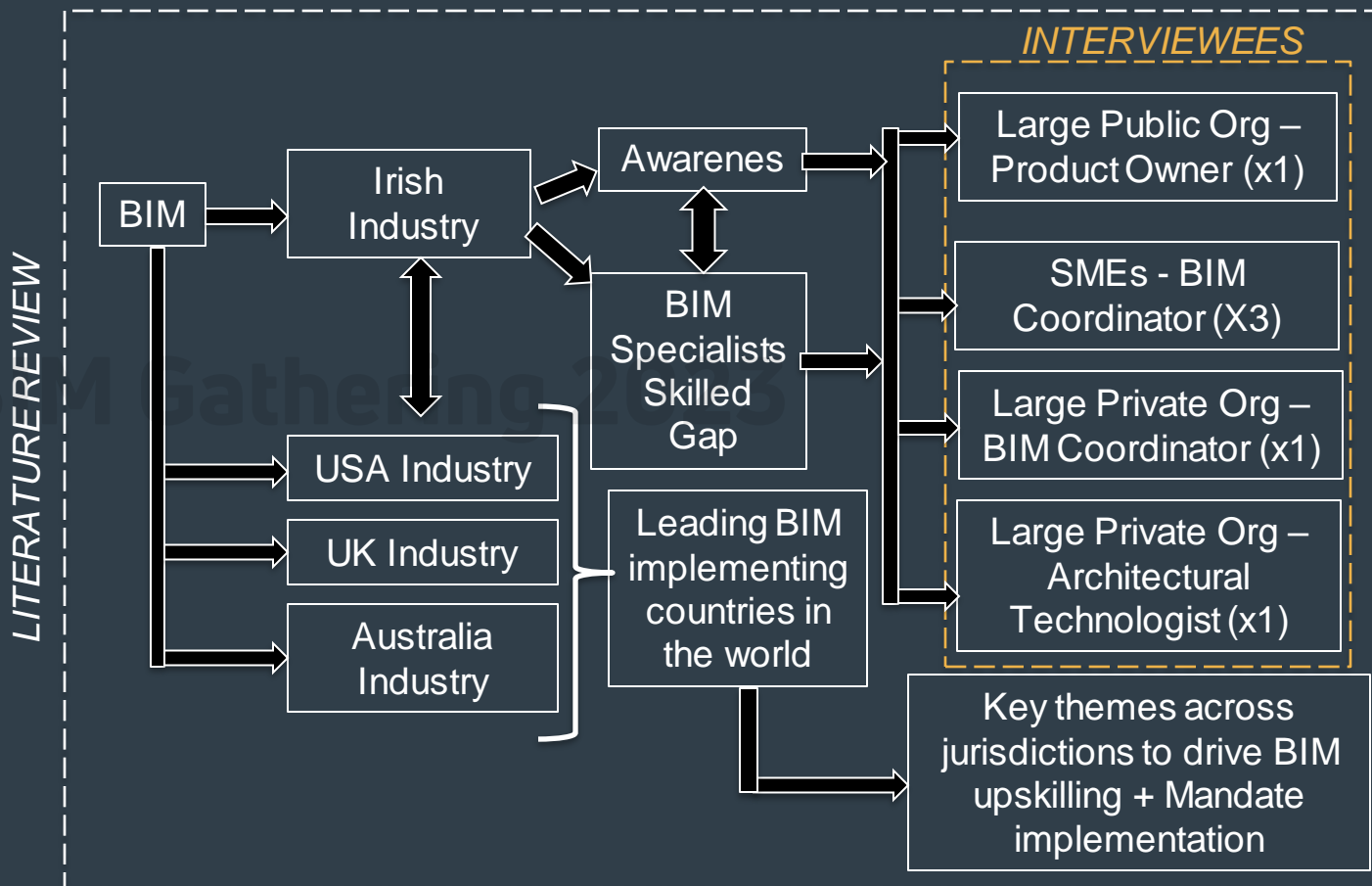
5. Ireland's BIM Education/Training Initiatives

- Multiple construction firms in Ireland collaborate with educational institutions to align with the syllabi. The aim is to offer BIM awareness at schools and BIM-related training programmes at universities that emphasise the growth of future skills and the development of young engineers/architects.
- Some interventions that provide awareness of the diverse employment opportunities available in the industry, as well as upskilling courses are 'Work Placement Initiative', 'WorkXperience Platform', 'Building Your Career Initiative', 'STEPs Outreach Programme', 'Springboard+', 'Architects in Schools', 'Design Engineer Construct' and 'Skillnet Ireland Training Networks'.



6. Research Methodology

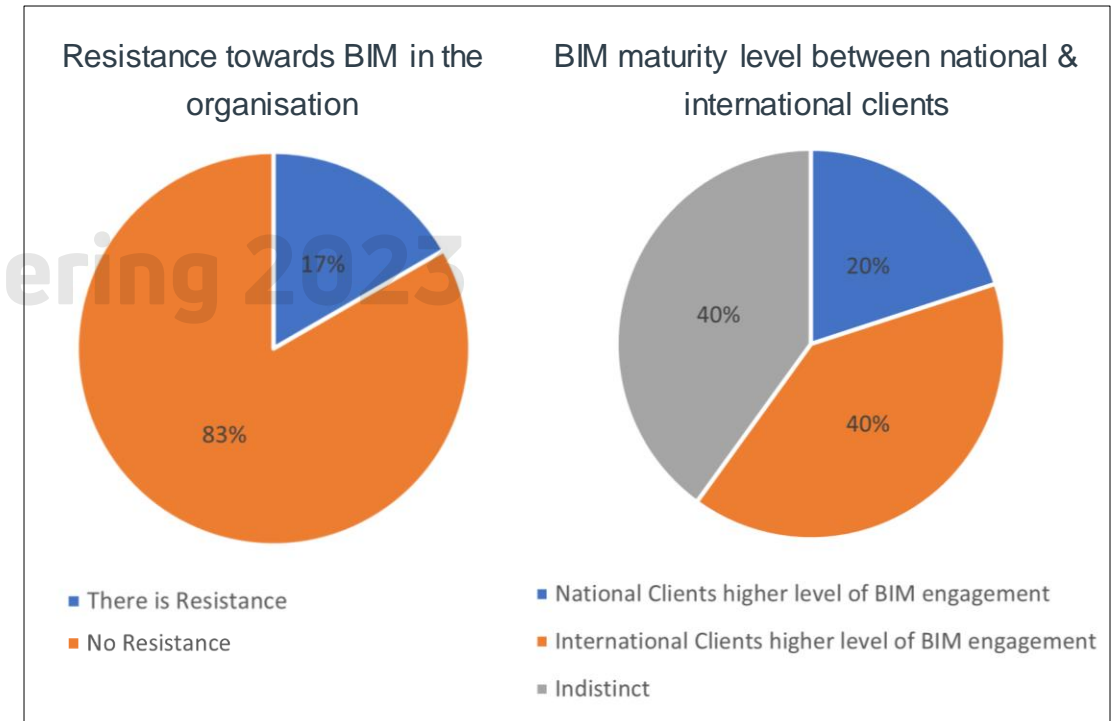
- Pragmatic Mixed Methodology Approach.
- 6 semi-structured interviews were conducted with Irish public and private construction sector representatives.



Methodological Framework

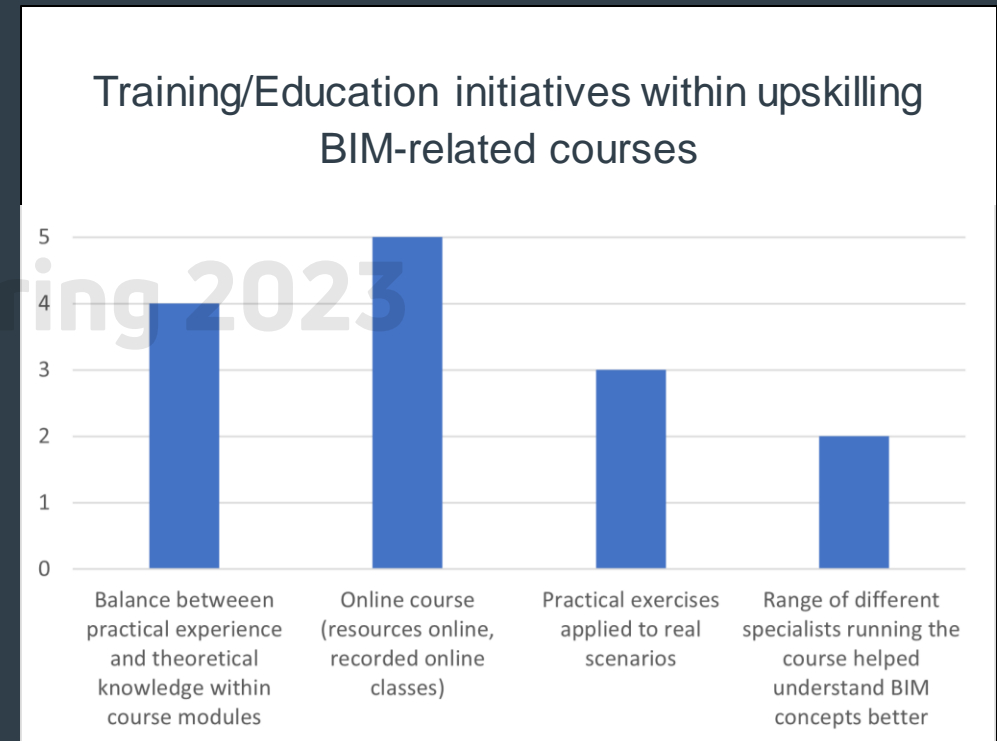
BIM Awareness

- SMEs and large private businesses have been gradually implementing BIM; however, full implementation is yet to be achieved.
- The public body is still in the early stages of its BIM adoption process.
- Engagement between organisations from diverse industry sectors and with different levels of BIM adoption can strengthen the development of companies with lower BIM readiness.
- COVID-19 positively influenced BIM adoption as digital technologies have been adopted in greater scale throughout this period.



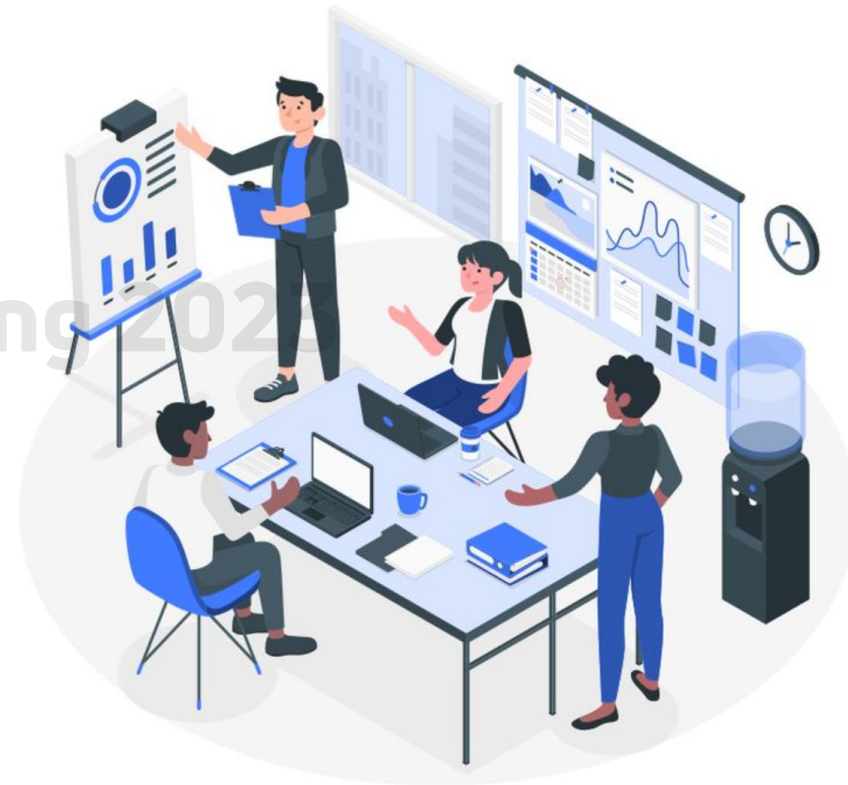
BIM Training/Education Initiatives

- Large private organisations have multiple benefits for pursuing continuing professional development (CPD).
- The situation with SMEs varies. Results indicate that, despite some upskilling initiatives and flexible work/study schedules that may be available, they are not as extensive as those offered by large private organisations.
- Within the large public organisation there are indications of efforts to promote BIM awareness; however, there are currently no upskilling courses available.
- Findings indicate that currently most employees acquire BIM knowledge through on-the-job experience rather than formal courses.



BIM Mandate

- Mandating BIM would provide the necessary push for the industry to continue developing further.
- The main challenges that could impede the mandate's successful adoption are:
 1. The lack of skilled professionals.
 2. The combative nature of the construction industry.
 3. The strict adherence to a predetermined set of requirements.
- Training initiatives should be considered in the event of the introduction of a BIM mandate.



7. FINDINGS

- Mandating BIM speeds up its adoption and diminishes education and training challenges.
- It is recommended that the government should review the mandate strategies employed by other countries as a reference for developing an Irish mandate.
- Educational support schemes should be established to encourage young professionals to pursue careers in the construction industry and attract them to the field of BIM.
- The construction sector should consider implementing BIM-focused CPD programmes and establish a BIM department within the organisation.
- It is recommended that HEIs develop updated curricula that incorporates multi-disciplinary, team-based modules focused on real-world BIM challenges.
- Training programmes in schools could be the catalyst for future social change within the construction sector.

A nighttime photograph of a stone bridge with multiple arches spanning a river. In the background, a large, illuminated church with a dome and two towers is visible. The scene is reflected in the calm water of the river. The sky is dark with some light clouds.

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THANK YOU