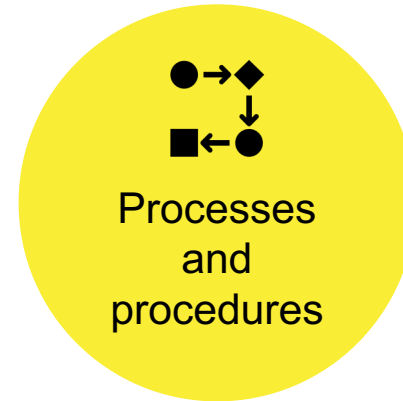


Adopting Digital Technologies in Housing and Construction industries

Dr Reyhaneh Shojaei

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Inhibitors to the take up of digital innovation



Inhibitors to the take up of digital innovation

Technology

- Different levels of digital literacy to use digital technology
- Cost
- Time consuming
- Ease of use
- Complexity
- Usability and applicability
- Interoperability

Goals

- Focus on maximising profit
- Focus on reducing cost

Buildings and infrastructure

- Construction processes taking place on site

Inhibitors to the take up of digital innovation

People



- Resistance to change
- Inappropriate leadership
- Lack of training
- Lack of knowledge about the benefits of digital innovation
- Negative perceptions
- Lack of management support
- Lack of skills



Inhibitors to the take up of digital innovation

People

Lack of knowledge about the benefits of digital innovation

- There is still a significant gap at the individual level, and employees are not clearly informed about the positive impacts that digital technologies can have on their role and day to day performance

Lack of skills and training

- It is unclear what kind of competencies and skills are required from each party and at what stage of project
- Disconnection between two skillsets: digital skills and construction knowledge

Resistance to change

- Resistance to change varies according to personality type and attitude to change
- Resistance may be more prevalent among senior staff who are nearing retirement

Inhibitors to the take up of digital innovation

Culture

- Technology-centric mindset rather human-centric
- Organisational resources and support
- Competitiveness
- Lack of clarity in current roles regarding digital responsibility
- Risk aversion
- Lack of collaboration
- Lack of organizational resources and support



Inhibitors to the take up of digital innovation

Culture

Technology-centric rather human-centric mindset

- Managers with a human-centric vision of BIM are more successful in bringing changes into their organisation, as they engage with people and bring them on board

Lack of clarity in current roles regarding digital responsibility

- The wider workforce, especially those who are in a non-digital role, need to have clear, role-specific, digitally-relevant responsibilities, as well as generic competencies

Lack of collaboration and communication

- There is a need for clear documentation indicating deliverables and data expected from each department, inside the organisation and through the supply chain

Inhibitors to the take up of digital innovation

Process and procedures

- Involvement with supply chain at different levels of competency
- Coordination issues
- Lack of communication and collaboration
- Difficulty in keeping employees on board throughout the digitisation journey
- Challenges in designing digital strategy implementation path



Process and procedures

Challenges in designing digital strategy

- Absence of a clear and communicable digital transformation strategy that set out the steps to digital transformation

Difficulty in keeping employees on board throughout the digitisation journey

- The need to bring all employees on board and help them to understand and believe in the need for organisational change is neglected

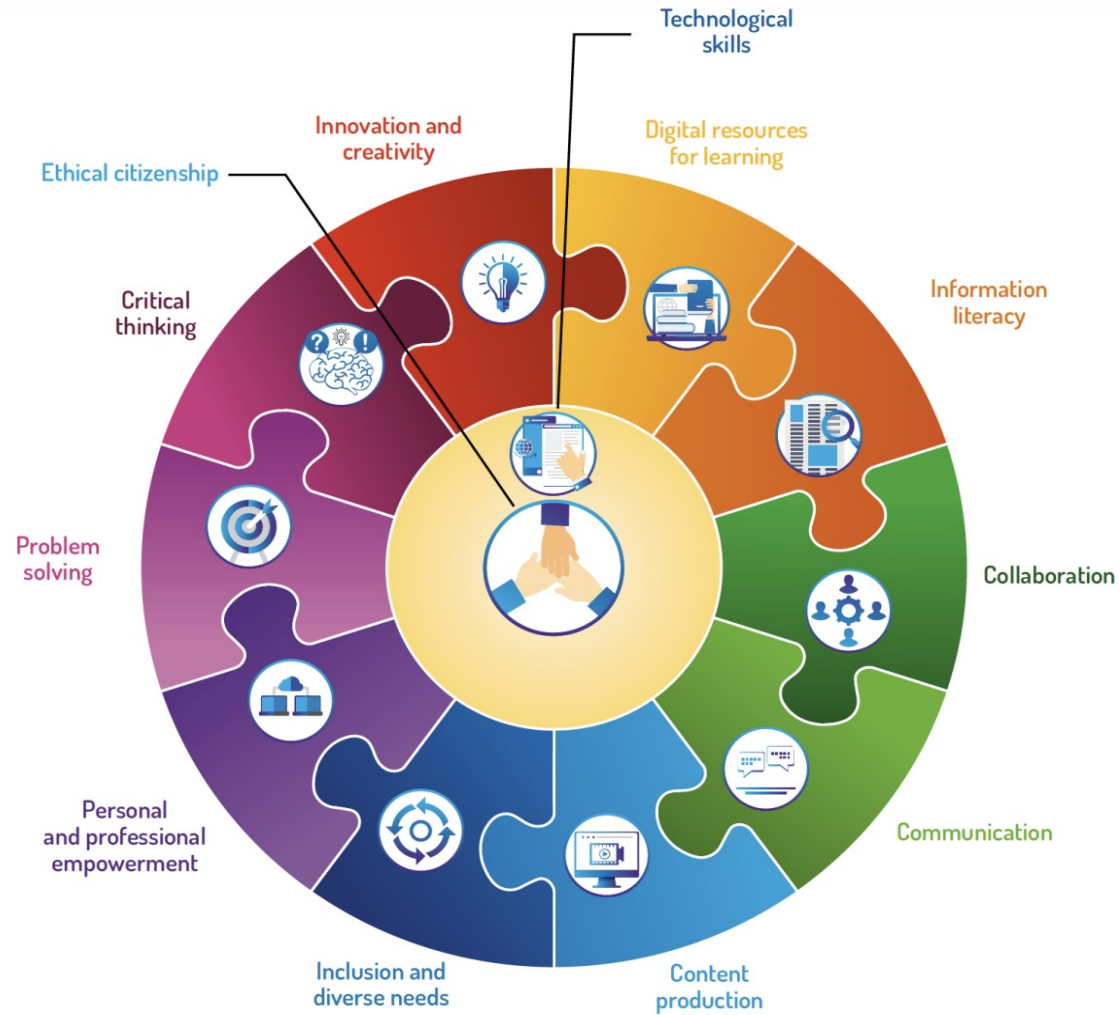
Involvement with supply chain at different levels of competency

- SMEs and micro businesses are more likely to lack the time and money needed for investment in BIM technologies or their use

Digital Competency

Complex know-how developed through the effective mobilization of a range of internal and external resources in a variety of related situations

Digital Competency Framework



Critical thinking

Evaluating Sources

Analysing Data

Problem-Solving

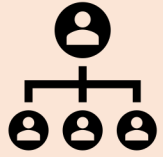
Ethical
Considerations

Innovating

How can these barriers be tackled?

There are enablers to adopt digital technologies (e.g. BIM) successfully

Successful adoption of digital innovation

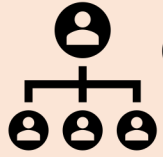


Committed leadership and management

A firm needs committed leadership to support the process of change who:

- believes in the strategies they are implementing
- believes in the urgency of digital transformation, its long-term benefits and who is committed to implementing the necessary strategies to achieve the vision
- supports personalised and people-focused; and
- values employee suggestions

Successful adoption of digital innovation



Committed leadership and management

Industry example: Multiplex

Recommendation:

- Appoint a digital transformation leader-champion
- Lead by example
- Lead people, don't focus solely on technology





A digital transformation strategy with realistic objectives

A successful digital transformation strategy:

- provides a step-by-step map of how to create a new firm culture around the use of new technologies
- gears towards establishing new routines and practices and creating a new firm culture, with a focus on people, processes, routines and technology
- uses simple language to communicate the goal of transformation;
- gives employees a sense of 'shared ownership' in what is to be achieved;
- is consistent and can be repeated across the firm;
- considers the needs of people (employees) in introducing new technologies and processes; and
- provides the needed internal support structures for implementation (e.g., training and support for staff, appropriate software).

Successful adoption of digital innovation



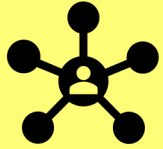
A digital transformation strategy with realistic objectives

Industry example: Willmott Dixon

Recommendation:

- Design a simple, clear and people-focused digital transformation strategy that can be easily communicated



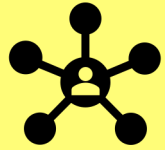


Robust structures for effective collaboration and communication

There is need for establishing new ways of communicating that facilitate greater collaboration and the sharing of data and information.

- Creating cross-functional teams with structures that promote freer communication encourages collective creativity in problem solving
- Encourages employees to take the initiative when working with new tools, technologies or implementing new processes
- Setting out the deliverables and data expected from each department inside the firm and from each party in the project supply chain

Successful adoption of digital innovation



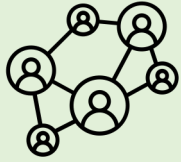
Robust structures for effective collaboration and communication

Industry example: ISG

Recommendation:

- Create enabling structures for effective communication and collaboration

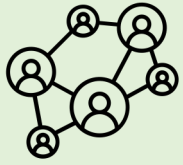




Building a capable supplier network through a 'growing together' approach

- Firms operating as suppliers in the construction supply chain are critical for successful project execution as contractors are heavily reliant on their supplier networks
- This supportive approach involves hosting workshops, training sessions and company visits to learn of capability challenges and to offer training support to suppliers

Successful adoption of digital innovation



Building a capable supplier network through a 'growing together' approach

Industry example: Skanska

Recommendation:

- Support your supply chain to develop their digital capabilities





Training and skills development initiatives for employees

- Training course, bespoke or one to one training which is tailored to individual digital literacy is crucial.
- Provide all employees with the basic skills for operating any underlying platform prior to introducing application software.
- Soft skills training including collaborative skills, system thinking, and communication are as fundamental as hard skills.



Training and skills development initiatives for employees

Industry example: Kier

Recommendation:

- Upskill employees in the use of new software and adapting to modified processes
- Provide tailored training based on employee digital competency levels





Building trust-based relationships with clients

- Building a trust relationship usually takes time and involves honest communication, offering reliable information about the inherent risks and the benefits associated with these innovations



Building trust-based relationships with clients

Industry example: Multiplex

Recommendation:

- *Build transparent, long-term trust-based relationships with clients*



<https://www.cchpr.landecon.cam.ac.uk/>

rss64@cam.ac.uk

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