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WORKSHOP VI
**THE CHALLENGE OF
CHANGE - BIM AND
HUMAN FACTOR**

Athens, 19 June 2024

WORKSHOP VI

THE CHALLENGE OF CHANGE - BIM AND HUMAN FACTOR

THE WORKSHOP



WHY?

A response to the needs of our members to share their knowledge, experiences, concerns, and challenges related to implementing responsible digitalization in buildings and cities.



WHAT?

Practical experience, insights, case studies, concerns and challenges on the responsible digitalization for buildings and cities.



GOAL:

The workshop was designed to encourage participants to reflect on various aspects of digital responsibility in the construction sector, assess the necessary requirements, and develop suggestions for implementing an effective strategy.



WHO?

The workshop participants were representatives of European Investment Bank and 21 participants from 12 countries (Estonia, Croatia, Denmark, Sweden, Czech republic, Germany, Greece, Hungary, Ireland, Italy, Latvia and Spain).



THE OUTPUT IS INTENDED FOR THE ACHIEVEMENT OF COMMON GOALS

- A free market
- A transparent and non-discriminatory competitive
- Environment
- Efficient spending of public money
- Support for digitalization
- The Green Deal
- Reducing the carbon footprint, etc

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THE CHALLENGE OF CHANGE - BIM AND HUMAN FACTOR FINDINGS

1

Resistance to change is natural; working with it during each step of implementing BIM in an organisation is essential. Therefore, it is crucial to include change management as one of the critical implementation processes and set human factor care as one of the highest priorities, along with appropriate communication, collaboration practices, training, integrated technology, and standards.

2

Consistently **map all actors affected by the change**, both those who see a fundamental change in their work habits and practices and those who see only some of their work practices change. We must include them all appropriately and respectfully in our communication and training plans at the right time and consistently seek their feedback on the benefits and concerns about the change's impact on their jobs.

3

For us, the human factor is involved in various specific activities throughout the development process - **leadership and vision** to set up strategic direction and change management; **workforce training and development** with skill enhancement; **employee engagement and buy-in** securing involvement in the process, incentives and motivation; **collaboration and communication** supporting interdisciplinary collaboration, stakeholder and supply chain engagement; **cultural shift** to embracing innovation, adaptability and flexibility; and **integrating human factors** such as holistic approach, feedback loops, support systems.

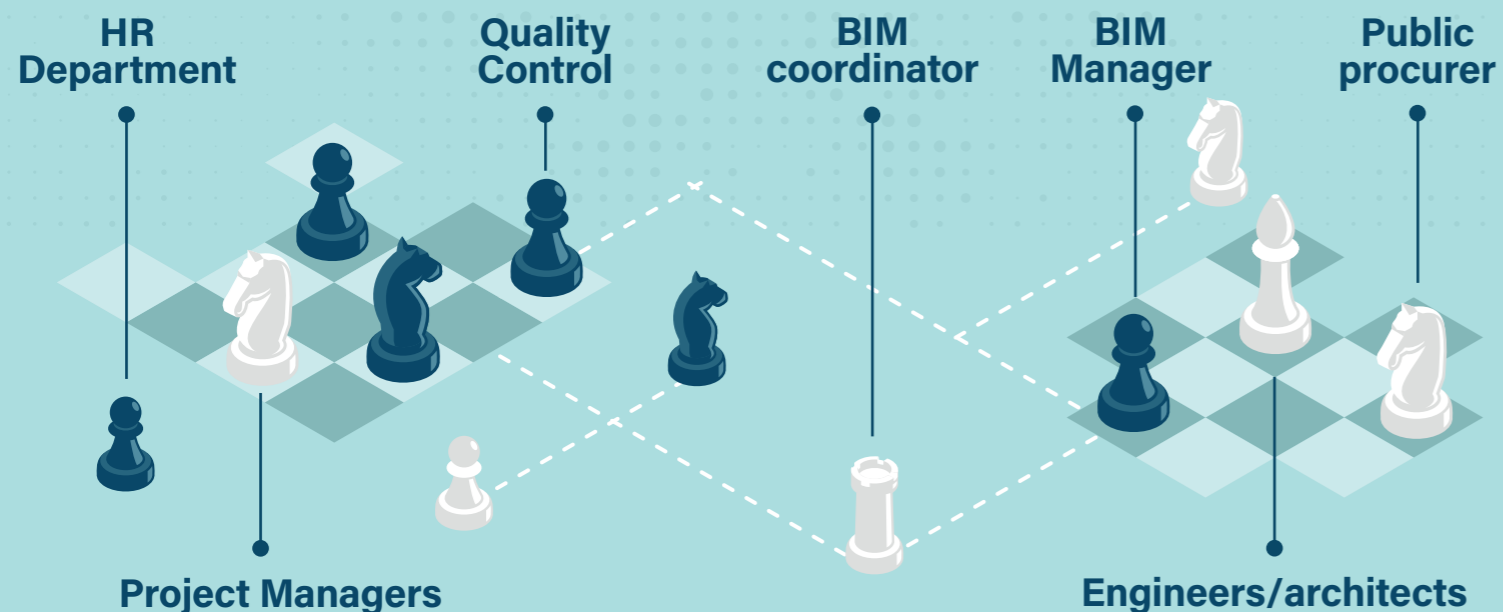
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During this and previous workshops, we believe that **Kotters' model for change management** could be practically used and adopted into the public client's organisation. Kotter's change model is an eight-step approach to effecting significant change in practice and organisations. This model focuses on **creating urgency to make change happen**. It walks through the process of Initiating, Managing, and Maintaining the change.

6

Our organisations are in different countries and at various stages of implementing BIM. However, we see **similar challenges and barriers** related to engaging human factors, such as resistance to change, lack of training and education, communication and collaboration issues, organisational culture, resistance from leadership, and lack of motivation and engagement.

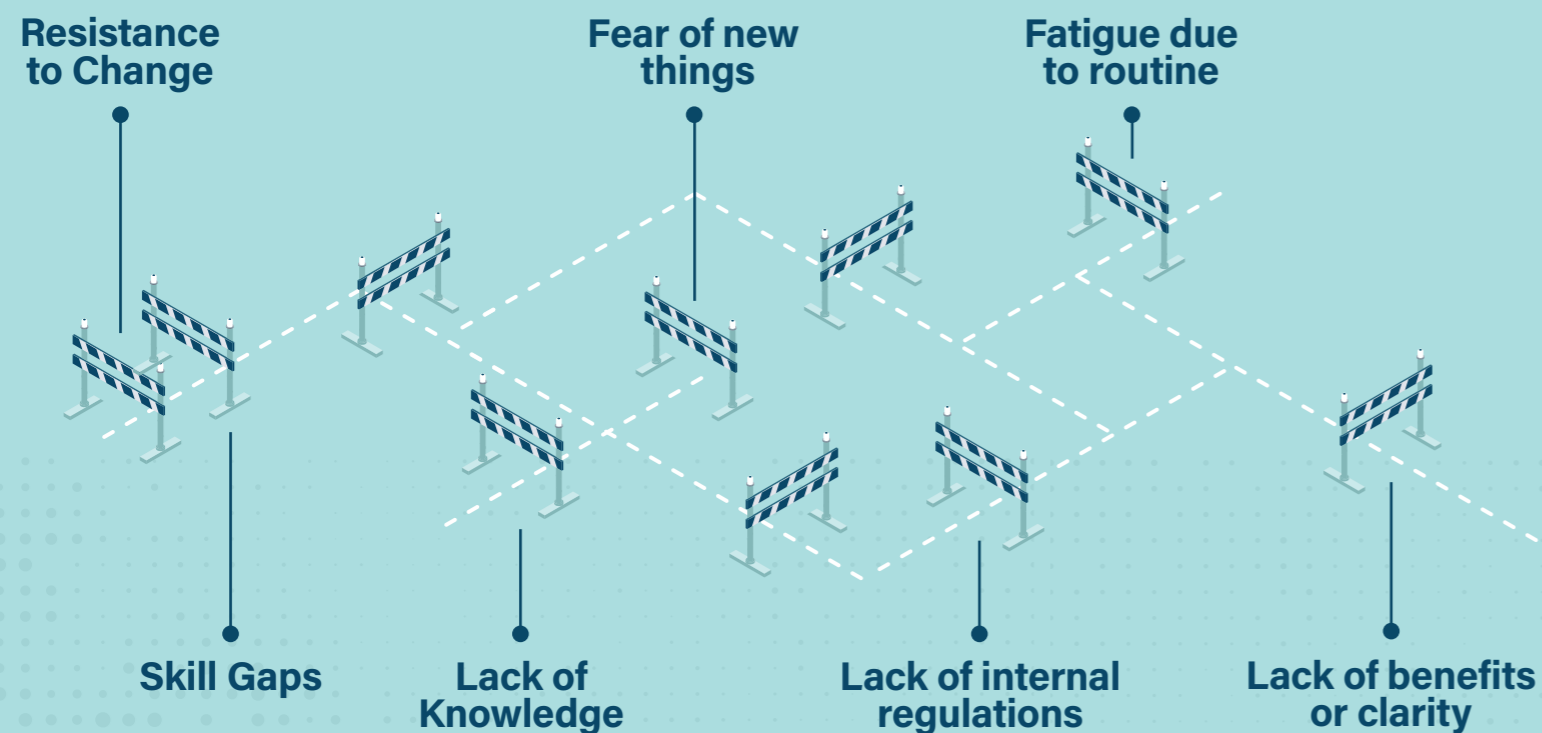




ACTORS (INTERNAL) INVOLVED IN BIM IMPLEMENTATION

If we talk about the human factor, we need to specify it in the form of individual actors so that we can approach the specification of their potential barriers individually. Only then can the plan and activities to treat or remove them be effective and efficient. In one workshop session, we compiled a detailed list of internal actors affected by BIM implementation in public client organisations. That list also includes their roles, responsibilities, skills, costs, personal benefits from using BIM, and even bottlenecks for successful change.

Full details are available to attendees, but we publish here only the list of actors for everyone's inspiration: top management, Project manager, Project executing team, BIM manager, BIM coordinator, Quality control, Facility manager, Asset manager, BI—Business Intelligence manager, Public procurer, HR specialist, IT specialist, Trainers, PR specialist.



BARRIERS POTENTIAL OBSTACLES TO SMOOTH CHANGE

Implementing BIM in public clients' organisations involves technical, financial, cultural, and regulatory challenges. Overcoming these obstacles requires a comprehensive approach that includes education and training, stakeholder engagement, investment in technology and infrastructure, and adjustments to procurement and legal frameworks. By addressing these challenges proactively, public sector organisations can better leverage BIM's potential benefits and help most employees accept and support the change.

In the last session of the workshop, we put together a telling list of the fundamental barriers related only to human factors that you may encounter when implementing BIM related to different actors. For each barrier, we have tried to compile a description, arguments to convince actors, and steps and actions to remove it.

Being aware of all the natural barriers in your organisation and mitigating them will allow you to take a proactive approach, preventing many disappointments and frustrations. Above all, it will enable you to maintain the momentum of change and the positive, realistic attitude of most of the actors.

BARRIER NAME ACTORS INVOLVED	ARGUMENTS TO CONVINC INVOLVED ACTORS	STEPS AND ACTIONS TO REMOVE THE BARRIER
<p>1</p> <p>Resistance to Change</p> <p>Stick to tradition in general</p> <p>Fear of new things</p> <p>General - all actors</p>	<ul style="list-style-type: none"> ● Highlight how BIM improves efficiency and accuracy in project delivery, reducing errors and rework. ● Emphasise the long-term cost savings that BIM adoption can bring through better project management, reduced construction delays and focus on lifecycle costs. ● Point out that BIM adoption is increasingly becoming a standard requirement in public sector projects, highlighting its growing importance. ● To present and explain real benefits (ROI, staff engagement, etc.) ● To provide evidence and key figures from other institutions, countries, research papers, etc. ● To find the momentum, the right time. ● Prioritisation: how to drive these changes within other ongoing initiatives. 	<p>1</p> <ul style="list-style-type: none"> ● Implement training programs to upskill employees. ● Develop a communication plan to explain the benefits and necessity of BIM. ● Start with pilot projects to demonstrate the value of BIM (pilot project should be easy and doable, not have a negative impact) ● Education, communication, awareness. Provide real examples as best practices. ● Incentives, Recognition, Collaboration, Teamwork: Encourage collaboration among different departments and teams. ● Encouraging a culture of continuous improvement will enable public organisations to adapt to changing circumstances and optimise their use of BIM methodologies. ● Pilot projects, learning by doing <ul style="list-style-type: none"> <i>Share success stories from other organisations to build confidence.</i> <i>Establish a feedback mechanism to address concerns and suggestions from employees.</i> <i>Regular workshops and seminars should be conducted to educate employees about BIM.</i> <i>Present non-technical risk analysis including what-if scenarios (what happens if we do it now, or later, or even if we don't).</i> <i>Provide cost-benefit analysis, including impact on the involved internal teams.</i>
<p>2</p> <p>Skill Gaps</p> <p>Lack of knowledge</p> <p>Fears of not meeting expectations</p> <p>HR Department</p> <p>Project Managers</p> <p>Quality Control Engineers/architects</p> <p>All actors</p>	<ul style="list-style-type: none"> ● Emphasise that having BIM skills will make employees more competitive and valuable. ● Highlight potential career advancement opportunities for employees with BIM expertise. ● Argue that skilled staff is essential for the organization's growth and successful project delivery. ● You'll see the benefits after you get the training and start working. ● Highlight case studies and examples where BIM implementation has successfully met or exceeded expectations. ● Explain that BIM benefits can appear incrementally, reducing the pressure to meet all expectations immediately. 	<p>2</p> <ul style="list-style-type: none"> ● Provide regular training and certification programs for employees. ● Hire professionals with BIM expertise to fill skill gaps. ● Promote a culture of continuous learning and professional development. <ul style="list-style-type: none"> <i>Collaborate with universities and training providers to offer BIM courses.</i> <i>Organise internal training sessions and workshops.</i> <i>Establish mentorship programs where experienced BIM professionals can guide less experienced staff.</i> ● Training. <ul style="list-style-type: none"> <i>Transfer of experience, promising use cases.</i> <i>Selecting the correct people for specific cases.</i> ● Define realistic and achievable goals for BIM implementation. ● Ensure continuous support and resources are available to address concerns and issues. ● Participation in research projects on BIM to drive the development that can be used in your company. <ul style="list-style-type: none"> <i>Create a clear implementation roadmap with milestones and success criteria.</i>

BARRIER NAME ACTORS INVOLVED	ARGUMENTS TO CONVINC INVOLVED ACTORS	STEPS AND ACTIONS TO REMOVE THE BARRIER
<p>3</p> <p>Lack of time and capacity during the implementation</p> <p>General - all actors</p>	<ul style="list-style-type: none"> ● Highlight the importance of prioritising time for training and implementation to gain future benefits 	<p>3</p> <ul style="list-style-type: none"> ● Provide training on time management and prioritisation. ● Plan for phased implementation to spread the workload and not overburden people. ● Delegate tasks and responsibilities to spread the workload and reduce individual time pressure. <p><i>Develop a detailed timeline for BIM implementation with specific time allocations.</i></p> <p><i>Regularly monitor progress and adjust timelines and workloads as necessary.</i></p>
<p>4</p> <p>Fatigue due to routine</p> <p>Perception of lack of practical utility</p> <p>General - all actors</p>	<ul style="list-style-type: none"> ● Highlight how BIM can introduce variety and engagement into routine tasks by leveraging advanced technology. ● Point out the potential for professional growth and development through learning new skills. By embracing BIM, employees can enhance their skill set and open up new career opportunities, fostering a sense of optimism and motivation. 	<p>4</p> <ul style="list-style-type: none"> ● Integrate new and challenging tasks to break the monotony of routine work. ● Implement recognition programs to reward employees for embracing new technologies. <p><i>Organise innovation days where employees can work on new ideas and projects.</i></p> <p><i>Create awards and recognition programs for employees who actively engage with BIM.</i></p>
<p>5</p> <p>Lack of internal regulations</p> <p>General - all actors</p>	<ul style="list-style-type: none"> ● Highlight how regulations can help manage risks and ensure compliance with external standards. ● Argue that clear guidelines make it easier for everyone to understand and follow BIM processes. 	<p>5</p> <ul style="list-style-type: none"> ● Establish a schedule for regular reviews and updates of internal regulations. ● Create and implement internal BIM policies and procedures. ● Standardise BIM processes and workflows across the organisation. <p><i>Document all BIM guidelines and make them easily accessible to all employees.</i></p> <p><i>Provide training sessions on new regulations and their importance.</i></p>
<p>6</p> <p>Lack of benefits or clarity</p> <p>General - all actors</p>	<ul style="list-style-type: none"> ● Provide detailed explanations of how BIM benefits each role within the organisation. 	<p>6</p> <ul style="list-style-type: none"> ● Develop clear and detailed communication materials outlining the benefits of BIM. <p><i>Implement a feedback mechanism to continuously gather input and address any lack of clarity or perceived benefits</i></p>

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THE CHALLENGE OF CHANGE - BIM AND HUMAN FACTOR CONCLUSIONS

1

Effective internal communication also helps remove objective and subjective barriers in the organisation and employer's minds. Successful internal communication during change management hinges on clarity, engagement, transparency, and support. By involving leadership, tailoring messages, maintaining open channels for feedback, and providing the necessary resources and training, organisations can facilitate smoother transitions and foster a more positive reception to change among employees.

2

Involving the project delivery external supply chain during the internal change management process can significantly enhance the positive impact of development. Collaboration with the supply chain (planners, contractors, etc.) fosters a more integrated approach to project delivery, improving communication, reducing misunderstandings, and aligning expectations between all parties involved. Involve external partners from the outset of project delivery to **align goals, expectations, and deliverables**. Conduct joint workshops and training sessions before and during project delivery to ensure all parties are on the same page. Establish clear communication channels and protocols for information sharing and collaboration during project delivery.

3

For us, it is essential to **include important messages in suitable activities** related to human factors at the beginning steps of BIM implementation, such as why and how we will do it (strategy, change management and implementation plans). We are focusing on people, and we see natural persons under each general actor; introduce BIM leaders and team to everybody; we are always open to both-side feedback; we are serious - it will be mandatory, creating shared understanding using honest reports, plan updates, and creating wider community to support the change. All messages need to use **clear and understandable language** for everybody.

4

For successful results leading to widely accepted change and development, it is **essential to have the role of a change manager** (internal or external) who will have the capacity, time and knowledge of how to create, update and, first of all, bring in practice the change management plan. That manager must keep activities going to **maintain the momentum of the change**, including those activities - workshops, presenting events to keep people engaged, creating community with success stories and both-way feedback, training with following support, training the trainers to enhance knowledge flow, newsletters or websites to promote/inform, and much more.

Collaboration with tailored, open and honest communication at the right time is the key to success!