EU BIM TASKGROUP

WORKSHOP VIII.

BIM IMPLEMENTATION AND TRAINING OPPORTUNITIES

7th November 2024, Budapest

EUBIM TASKGROUP

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THE WORKSHOP

WHY?

Response to the need of public sector client organizations to implement Building Information Modelling (BIM) in a structured and efficient way as part of the broader digital transition, the workshop aimed to bring together experiences from different countries.

WHAT?

The program consisted of three main sections:

- A SWOT analysis of the practical implementation of BIM, based on internal and external factors;
- Examination of the role of education and training in supporting organizational implementation;
- Formulation of common conclusions and recommendations for future development.

The workshop sessions were organized around small-group work, joint question raising, and structured discussions to process experiences collaboratively.

GOAL:

The objective was to apply a practice-oriented approach that:

- supports the understanding and promotion of BIM implementation in the public sector,
- enables knowledge sharing and networking among stakeholders,
- identifies technological, human, organizational, and regulatory challenges,
- emphasizes the strategic role of education and training in achieving successful BIM implementation.

WHO?

Fifteen delegates from countries, such as The Czech Republic, Italy, Spain, Germany and Hungary attended the workshop.

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 digitization
- reducing the carbon footprint, etc.

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FINDINGS

Based on the detailed exploration of the SWOT analysis, it becomes clear that the implementation of Building Information Modelling (BIM) in the public sector is **not merely a technological shift**, but also a **profound organizational and mindset transformation**. The following lessons and forward-looking conclusions may **support decision-makers** and professionals on the path **toward successful implementation**:

Strengths and Opportunities – A Foundation for a Sustainable Future

- The growing demand for digital transformation within the public sector is increasingly supported by **internal motivation**, **more open dialogue**, and **recognition at leadership levels**. This creates the conditions for a gradual and strategic implementation process.
- The introduction of BIM can make the **public sector more attractive** to young, technology-oriented professionals while also offering existing employees opportunities for professional development and new career paths.
- **Adapting** both international and national **best practices** (e.g. EUBIM Task Group) can accelerate the learning curve, reduce the risk of common mistakes, and support a harmonized European development of public sector BIM strategies.
- New technologies, open standards, and advanced **tools are already available**, allowing public organizations to enter the digital operation space with lower risk – through a gradual, pilot-tested approach.
- BIM-based operations can open doors to **new service models, markets, and business opportunities**, such as digital twins, predictive maintenance, or energy optimization. These developments not only stimulate the economy but also enable the inclusion of new suppliers and innovation ecosystems in the public domain.

Weaknesses and Threats – Challenges That Can Be Overcome Through Strategic Management

- Outdated technological infrastructure, software incompatibilities, or licensing issues may **limit the functionality of BIM processes**. These challenges can be effectively addressed through targeted and phased investments in **IT development**.
- Higher salaries and faster career progression in the private sector can lure away highly skilled public sector professionals unless **proactive retention strategies** are implemented – such as **continuous training, mentoring programs, and dedicated innovation environments.**
- Organizational resistance, overestimation of internal capacity, or overly rapid legislative changes may become serious obstacles to successful BIM adoption if i**nternal coordination and preparatory processes are lacking**.
- **Overly complex regulations**, software malfunctions, or inadequate cybersecurity protocols (e.g. risk of data loss or cyberattacks) can **undermine trust in the system**. However, these risks can be mitigated through realistic, practical regulation and user-friendly digital tools.

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Recommendations and Positive Outlook

- Use of **pilot projects** allows for **risk-free experimentation** and learning. The insights gained from these initiatives can support the creation of tailored, organization-specific BIM implementation strategies.
- Developing a **predictable and supportive regulatory environment**—such as public procurement BIM requirements and training subsidies—**can lay the groundwork** for long-term institutional commitment and confidence.
- Digital transformation improves not only **operational efficiency** but also **enhances the image of the public sector**—making it more attractive to young professionals, innovators, and international partners alike.
- **Open standards** and a **harmonized European approach** foster collaboration, flexibility, and data security. These are the cornerstones of a digital future in which the public sector can become not just a follower but also a leader in innovation.

To summarize, the public sector stands before significant opportunities with the implementation of BIM. However, these opportunities can only be transformed into real results if preparation, **human capacity, and technological infrastructure evolve in a coordinated way**. The key to success lies in gradual implementation, openness to change, and strong partnerships — both at the national and international levels.

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SWOT ANALYSIS

INTERNAL FACTORS

STRENGHTS (+)			WEAKNESSES (-)		
1.	Communication and engagement	HUMAN FACTOR	1.	Lack of dedicated implementation teams	HUMAN FACTOR
2.	Presence of staff with versatile expertise (BIM, IT, process management)	HUMAN FACTOR	2.	Missing tranings	HUMAN FACTOR
3.	Strong internal motivation for digital switchover	HUMAN FACTOR	3.	Lack of executive-level commitment to implementation and digitisation processes	HUMAN FACTOR
4.	Open minded leaders understanding it takes time, money etc	HUMAN FACTOR	4.	Lack of interests in change management	HUMAN FACTOR
5.	Attracting ambitious staff with a forward-thinking organisational reputation	HUMAN FACTOR	5.	Change management does not get enough attention	HUMAN FACTOR
6.	Better information management	PROCESS/ MANAGEMENT	6.	The knowledge required is limited to a narrow group of actors, the process is highly dependent on them	HUMAN FACTOR
7.	Efficiency	PROCESS/ MANAGEMENT	7.	Insufficient motivation and knowledge base within the organisation	HUMAN FACTOR
8.	Dedicated internal team for strategic development	PROCESS/ MANAGEMENT	8.	No formal change management strategy	HUMAN FACTOR
9.	Possibility of implementing pilot projects	PROCESS/ MANAGEMENT	9.	No funding for the necessary improvements	PROCESS/ MANAGEMENT
10.	Well defined goals and requirements for the operational phase	PROCESS/ MANAGEMENT	10.	The lack of BIM implementation concept	PROCESS/ MANAGEMENT
11.	Regular evaluation of processes and results	PROCESS/ MANAGEMENT	11.	The time available is not sufficient for proper implementation	PROCESS/ MANAGEMENT
12.	Decision-makers with expert background	REGULATIONS	12.	Objectives and milestones were set imprecisely or at the wrong time	PROCESS/ MANAGEMENT
13.	Well-defined rules and processes are available	REGULATIONS	13.	Gaps and inconsistencies in documentation	PROCESS/ MANAGEMENT
14.	Is there a professionally responsible authority to promote BIM	REGULATIONS	14.	Lack of integration of risk management in the BIM process	PROCESS/ MANAGEMENT
15.	High levels of automation and digital maturity already exist	TECHNOLOGY	15.	The mandatory application framework is imprecisely or ambiguously defined	REGULATIONS
16.	Recycling elements from previous projects	TECHNOLOGY	16.	Not flexible internal regulations or too complicated existing regulations	REGULATIONS
17.	The necessary technology is already available	TECHNOLOGY	17.	Equipment is not up to date (hardver and software)	TECHNOLOGY
18.			18.	The technology implemented does not work reliably in practice	TECHNOLOGY

EXTERNAL FACTORS

OPPORTUNITIES (+)			THREATS (-)		
1.	Motivation and new carrier opportunities	HUMAN FACTOR	1.	Losing talented and trained people	HUMAN FACTOR
2.	Attract talent	HUMAN FACTOR	2.	Constant learning is not for everyone	HUMAN FACTOR
3.	Arriving new people with experinces	HUMAN FACTOR	3.	Salaries in private sector	HUMAN FACTOR
4.	External educational system (high schools uni-s,), life long learning for public	HUMAN FACTOR	4.	Getting involved in projects with partners without BIM experienceses	HUMAN FACTOR
5.	Establish a collaborative mindset	HUMAN FACTOR	5.	Transparency vs. fair competiteveness	HUMAN FACTOR
6.	Improve competitiveness on a national level (public sector)	HUMAN FACTOR	6.	Overestimate your capacitives	HUMAN FACTOR
7.	Getting best practice form other companies, countries	PROCESS/ MANAGEMENT	7.	Risk of too much technology, less social interaction	HUMAN FACTOR
8.	A good cause for improvement and change (technology and process improvement)	PROCESS/ MANAGEMENT	8.	Less creativity due to easy and serial design and production	HUMAN FACTOR
9.	Sharing eperience in public sector, for example : EUBIM TG	PROCESS/ MANAGEMENT	9.	Start and stop early without earning the benefits	PROCESS/ MANAGEMENT
10.	Exploring new businesses - creating new opportunities	PROCESS/ MANAGEMENT	10.	Resistant people winning the battle	PROCESS/ MANAGEMENT
11.	New projects with new requirements can generate new processes	PROCESS/ MANAGEMENT	11.	Funding problem	PROCESS/ MANAGEMENT
12.	New regulation (on higher level)	REGULATIONS	12.	Rapid Change of the regulatory framework within a short period of time	REGULATIONS
13.	Open standards	REGULATIONS	13.	New regulation (on higher level)	REGULATIONS
14.	Harmonise existing EU BIM standards	REGULATIONS	14.	Over-complicated BIM rules	REGULATIONS
15.	Support a strong EU single market	REGULATIONS	15.	Cyber attack	TECHNOLOGY
16.	Growth of software market - brings new tenchologies	TECHNOLOGY	16.	Technology crash (servers, cloud systems ect.)	TECHNOLOGY
17.			17.	Software difficulities (bugs or compatibility)	TECHNOLOGY

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SWOT ANALYSIS

EU BIM TASKGROUP

INTERNAL FACTORS

	STRENGHTS (+)			WEAKNESSES (-)		
1	**Communication and engagement**	It is becoming increasingly common for different professional and organizational stakeholders – such as designers, operators, decision-makers, IT and legal staff – to be involved in coordination already during the early stages of the project. This early involvement facilitates the definition of shared goals and expectations. A more open dialogue not only improves collaboration but also increases transparency and the legitimacy of decisions, contributing to smoother implementation and greater staff engagement during the digital transition.	Human factor	**Lack of dedicated implementation teams**	Many public institutions lack a dedicated BIM or digitalization team, which hinders focused implementation at the organizational level. It is crucial that these roles are not filled by reallocating existing staff with additional responsibilities.	Human factor
2	**Presence of staff with versatile(BIM, IT, process management)**	This multidisciplinary mindset promotes integrated thinking and system-level approaches. Such a perspective is crucial during digital transformation, as BIM implementation is not just a technical issue – it affects organizational structures, decision-making processes, and collaboration culture. Professionals with broad skillsets can bridge gaps between different domains, align expectations, and help establish a shared vocabulary among stakeholders.	Human factor	**Missing tranings**	The lack of training is a major barrier to knowledge dissemination; many public sector employees have no access to BIM-related thinking. Education is a foundational pillar for successful implementation.	Human factor
3	**Strong internal motivation for digital switchover**	This growing interest often stems from employees' own experiences, external examples, or day-to-day operational challenges, indicating a genuine need for innovation. However, this internal drive can only become a real development enabler if leadership is capable of recognizing, reinforcing, and channeling it strategically – for instance, by setting clear goals, offering training, incentives, and providing a supportive environment.	Human factor	**Lack of executive-level commitment to implementation and digitisation processes**	Disinterest or uncertainty at senior leadership levels often slows down digital transition—especially when there is no political or strategic backing. If all leaders do not support the initiative, implementation efforts can ultimately fail.	Human factor
4	**Open minded leaders understanding it takes time, money etc**	Leaders are increasingly acknowledging that digital transformation – especially BIM implementation – cannot be achieved quickly or with minimal effort; it requires significant time, human resources, and financial investment. This marks a key shift in mindset, as long-term planning and realistic timelines enable organizations to implement new technologies sustainably, without overcommitting or losing employee trust.	Human factor	**Lack of interests in change management**	There is limited interest in change management, and often no designated personnel to systematically coordinate the process.	Human factor
5	**Attracting ambitious staff with a forward-thinking organisational reputation**	Initiatives such as BIM implementation send a clear message to external partners and potential employees that the organization is forward-thinking, open to innovation, and capable of adapting to 21st-century expectations. This is particularly important for younger, digitally fluent generations, who are more likely to choose a workplace that offers modern tools and values progressive thinking. As a result, digital developments can also contribute to attracting and retaining talent in the public sector.	Human factor	**Change management does not get enough attention**	Some employees are resistant to using technology, particularly older generations or those unfamiliar with digital tools. Implementation may fail if a highly influential employee opposes the changes.	Human factor
6	**Better information management**	The coordination of various data sources and design versions takes place in a centralized digital model, allowing real-time information access and version control. This reduces the risk of errors, misunderstandings, and duplicate work, while increasing transparency across all project phases. More accurate and timely information helps decision-makers make well-informed choices and strengthens collaboration between different disciplines and partners – including designers, contractors, and facility managers.	Process/ management	**The knowledge required is limited to a narrow group of actors, the process is highly dependent on them**	Digital competence is concentrated in a small group, which creates risk: if a key person leaves or is unavailable, the project may stall. Knowledge must be distributed broadly and made accessible across the organization.	Human factor

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INTERNAL FACTORS

	STRENGHTS (+)			WEAKNESSES (-)		
7	**Efficiency**	Through digitized data recording, document-based and model-based collaboration, redundancies and errors stemming from paper-based or parallel record-keeping can be significantly reduced. Maintenance processes also become more predictable and precise when building data, maintenance schedules, and issue reporting systems are stored in a shared platform with up-to-date access. Monitoring project progress, optimizing resources, and meeting deadlines also become more efficient when real-time data updates are accessible to all relevant stakeholders.	Process/ management	**Insufficient motivation and knowledge base within the organisation**	A common barrier is the combination of low motivation and lack of knowledge, which makes implementation difficult and risky. It is important to communicate that change takes time but ultimately benefits the individual.	Human factor
8	**Dedicated internal team for strategic development**	These internal teams do more than handle technical tasks – they coordinate collaboration between stakeholders, contribute to training and regulatory framework development, and supervise the execution of pilot projects. The formal acknowledgment of BIM responsibility at the organizational level signals that digitalization is not a one-time initiative, but part of a long-term institutional strategy. This significantly increases the likelihood of success, as strategic focus, resource allocation, and accountability are ensured.	Process/ management	**No formal change management strategy**	Most institutions do not have a formally approved organizational procedure for managing cultural and operational changes triggered by digital transformation. This lowers employee confidence and hinders adoption of new technologies. A phased, realistic BIM rollout plan is necessary to avoid over- or under-management.	Human factor
9	**Possibility of implementing pilot projects**	These limited-scope, well-defined projects provide an ideal environment for various stakeholders – including project managers, designers, technical experts, and decision-makers – to gain direct experience in using BIM tools and process-oriented thinking. At the same time, they offer an opportunity to identify and address potential technological, organizational, or communication issues before a broader implementation takes place. Lessons learned from pilot projects help fine-tune the overall implementation strategy and build trust among stakeholders regarding the effectiveness and applicability of the new system.	Process/ management	**No funding for the necessary improvements**	The investments required for introducing digital solutions are either unavailable or not specifically allocated. In the case of BIM implementation, it is essential to invest more than average in the early project phases in order to achieve long-term returns across the building's full lifecycle. This upfront commitment is often the biggest source of hesitation for many stakeholders.	Process/ management
10	**Well defined goals and requirements for the operational phase**	Clearly defined expectations – for example regarding maintenance schedules, energy efficiency, or life-cycle costs – help ensure that BIM adds value not only during the design and construction phases, but also throughout the long-term operation of the building. Well-structured data and models support informed decision-making in facility management, reduce maintenance costs, and enhance sustainability across the entire life cycle of the built asset.	Process/ management	**The lack of BIM implementation concept**	In many cases, the detailed implementation plan required for BIM deployment is missing, leading to unstructured or ad hoc processes. As a result, the expected financial and scheduling returns often fail to materialize.	Process/ management
11	**Regular evaluation of processes and results**	The introduction of BIM-based operations does not merely involve the adoption of new technologies, but requires a fundamental rethinking of the entire organizational workflow. To support this, it is essential that institutions periodically review and update their operational processes and the related internal regulations. This enables the organization to learn from implementation experiences, respond to new challenges, and fine-tune its functioning to support more efficient, digitally enabled work practices.	Process/ management	**The time available is not sufficient for proper implementation**	The time available is often insufficient for properly executing the digital transition, especially when additional administrative pressures are present. Setting a clear timeline and defining maturity milestones is essential to ensure that the implementation is allocated an adequate timeframe.	Process/ management
12	**Decision-makers with expert background**	When decision-makers truly understand how digital construction processes – including BIM – work, not just on a theoretical level but also in terms of their technological and practical aspects, they are better positioned to create regulations, guidelines, and support mechanisms that realistically align with industry operations. This helps ensure that the regulatory environment does not merely impose compliance requirements but also acts as a genuine incentive for public institutions and market participants to adopt and benefit from BIM.	Regulations	**Objectives and milestones were set imprecisely or at the wrong time**	Objectives and milestones are often poorly defined—either overly ambitious or too vague. Implementation cannot succeed if progress is constrained by hundreds of pages of documentation, but it will also falter if the strategy provides only superficial guidance. Striking the right balance is essential.	Process/ management

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INTERNAL FACTORS

STRENGHTS (+)

13	**Well-defined rules and processes are available**	These existing documents – whether they pertain to operational procedures, responsibilities, or approval chains – provide a stable starting point for the structured implementation of digital transformation. Instead of having to build entirely new systems from scratch, organizations have the opportunity to adapt these established frameworks to be BIM-compatible, for example by supplementing them with additional content, converting them into digital formats, or standardizing them through templates.	Regulations
14	**Is there a professionally responsible authority to promote BIM**	In several member states, BIM support and enforcement are increasingly appearing at ministerial level – this can serve as a crucial catalyst for public sector adoption. When governmental bodies – particularly ministries responsible for construction, transport, or digitalization – formally commit to BIM, it lends significant political and strategic weight to its implementation. This not only sets a strong example for lower-level institutions, but also creates opportunities to launch central guidelines, funding frameworks, standardization initiatives, and pilot programs.	Regulations
15	**High levels of automation and digital maturity already exist**	Digital tools that automate repetitive or error-prone tasks during the design and construction phases – such as generating quantity take-offs, conducting design checks, or performing clash detections – can lead to significant time savings and increased accuracy. Through BIM, automation can also extend to the integration of building automation systems, enabling intelligent control, energy management, and real-time monitoring. This adds further efficiency and cost savings during the operational phase.	Technology
16	**Recycling elements from previous projects**	Lessons learned from previous, similar public sector projects can serve as a valuable foundation, helping to reduce uncertainty and accelerate the learning process. It is crucial, however, not to rely on duplicate templates or outdated practices, but rather to integrate new insights and experiences from each project into organizational templates and workflows.	Technology
17	**The necessary technology is already available**	A wide range of technologies – including software, hardware, and standards – are now broadly accessible, and their current level of maturity enables public sector organizations to implement digital workflows in a phased, low-risk manner. This is particularly important in the public sector, where large-scale organizational and regulatory transformations can only be effectively realized through well-planned and gradually executed development steps.	Technology
18			

WEAKNESSES (-)

	Gaps and inconsistencies in documentation	The project documentation system is often incomplete or lacks sufficient detail, leading to traceability and compliance issues. When documentation is poorly structured—such as missing version control, inconsistent file formats, or the absence of a centralized data repository—it becomes difficult to retrieve and validate information from the model. This is especially critical during the operational phase, in legal compliance, or in audit situations. Moreover, it increases the risk of data duplication and information loss.	Process/ management
	Lack of integration of risk management in the BIM process	Due to the lack of proper risk assessment and mitigation measures, the project is less capable of responding to challenges arising from technological, organizational, or human resource factors. As a result, the likelihood of errors, delays, or cost overruns increases, while the organization misses the opportunity to proactively manage uncertainties associated with the digital transition. This can also lead to a loss of trust across all levels of the project.	Process/ management
	The mandatory application framework is imprecisely or ambiguously defined	Stakeholders often lack clarity regarding the required level, tools, and project phases where BIM compliance is necessary. As a result, instead of aiming for full compliance, many actors either meet only the bare minimum or avoid implementation altogether. Furthermore, an ambiguously defined framework introduces legal and procurement risks, as contracting authorities and contractors may interpret the requirements differently, potentially leading to disputes and project delays. Therefore, the BIM framework must be concrete, legally unambiguous, and technologically relevant in order to provide real guidance for implementation.	Regulations
	Not flexible internal regulations or too complicated existing regulations	Outdated or overly prescriptive internal regulations hinder the adoption of digital solutions, as they are misaligned with the dynamic and iterative nature of BIM-based workflows. As a result, there is often a need to revise or simplify these regulatory frameworks to ensure that the organization can genuinely keep pace with technological advancements and fully leverage their benefits.	Regulations
	Equipment is not up to date (hardver and software)	Inadequate computer performance, outdated operating systems, missing licensed software, or incompatible software versions significantly limit capabilities related to model management, visualization, and data extraction. This not only slows down workflows but also leads to employee frustration, ultimately hindering BIM integration and reducing its acceptance within the organization.	Technology
	The technology implemented does not work reliably in practice	This may include software bugs, system instability, version conflicts, network outages, slow data processing, too big files, too much polygon, or file format incompatibilities. All of these factors significantly reduce system reliability and data handling security. Users—especially those less experienced with digital tools—can easily lose trust in the system under such conditions, leading to frustration, resistance, and a tendency to revert to familiar analog or traditional workflows.	Technology

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	OPPORTUNITIES (+)			THREATS (-)		
1	**Motivation and new carrier opportunities**	The digital transition requires new types of expertise, such as data management, model coordination, IT, and project integration knowledge. This creates an opportunity for the public sector to offer modern, competitive job profiles that are more attractive to younger, digitally oriented professionals. In addition, it opens new career paths for existing employees through continuous learning and reskilling, helping them take on new roles and progress professionally.	Human factor	**Losing talented and trained people**	Employees with competitive skills—particularly in the areas of digital technologies, BIM, data management, or project management—are in high demand in the private sector. If public institutions are unable to offer attractive career paths, opportunities for professional development, a modern working environment, or motivating benefit systems, these professionals are very likely to move toward better-paying and more flexible market actors.	Human factor
2	**Attract talent**	Positions related to BIM can become appealing for skilled professionals from the private sector—especially if the public sector can offer stability, professional development opportunities, and long-term career prospects.	Human factor	**Constant learning is not for everyone**	The digital transition – and particularly the introduction of BIM – often requires the acquisition of new skills, learning new software, and adopting a different mindset. While this can present an opportunity for younger generations, for more experienced employees with established work routines, it may pose a challenge. A lack of time, the dominance of previous knowledge systems, or even technological anxiety can hinder the willingness or ability to engage in continuous learning.	Human factor
3	**Arriving new people with experinces**	Involving professionals who have already participated in digital design, construction, or operation projects brings significant added value to public sector organizations. These individuals contribute practical experience, tried-and-tested solutions, and lessons learned from previous challenges. They can also take on mentoring roles, contributing to internal capacity building and fostering a BIM-oriented culture within the organization.	Human factor	**Salaries in private sector**	The lack of competitive salaries poses an ongoing challenge for public sector organizations, especially when it comes to retaining professionals with advanced digital competencies. Positions related to BIM – such as modelers, coordinators, or data managers – typically offer significantly better financial conditions in the private sector. If compensation is not supplemented by other benefits – such as development opportunities, a stable working environment, or a sense of societal value – public institutions may easily lose their most valuable human resources.	Human factor
4	**External educational system (high schools uni-s,), life long learning for public**	External educational systems – including high schools, universities, and adult learning programs – play a key role in making BIM-related competencies accessible for the public sector. These institutions can support upskilling and reskilling efforts and provide a steady pipeline of digitally literate professionals.	Human factor	**Getting involved in projects with partners without BIM experienceses**	Partners who are not familiar with BIM-based workflows often fail to understand the logic of model-based collaboration, the role of data management, or the importance of consistently fulfilling information requirements. It can also happen that they bypass CDE (Common Data Environment) systems by providing or requesting information through alternative channels, undermining the fundamental principle of a „Single Source of Truth."This can lead to communication misunderstandings, incorrect or incomplete data, and disruptions in the rhythm of collaboration.	Human factor
5	**Establish a collaborative mindset**	A core element of the BIM mindset is integrated collaboration between different professional domains – from design through construction to operation. Introducing this approach in the public sector requires not only technological but also cultural change, encouraging open communication, information sharing, and collective goal setting across organizational boundaries.	Human factor	**Transparency vs. fair competiteveness**	One of the main advantages of BIM-based collaboration is the sharing of detailed, real-time information. However, this level of openness can create tension for market actors who consider certain solutions, cost estimates, or technologies as competitive advantages. Due to the expectations of transparency, there is a risk that such confidential information may become accessible to unauthorized parties or create competitive disadvantages. This may hinder the willingness to collaborate—especially if the legal and data management frameworks are not sufficiently clear to protect all parties involved.	Human factor
6	**Improve competitiveness on a national level (public sector)**	The adoption of digital methods and BIM can improve the competitiveness of the public sector, especially in large and complex projects where efficiency and transparency are critical. Better data management and process coordination can lead to faster execution and more cost-effective delivery.	Human factor	**Overestimate your capacitives**	The digital transition and the implementation of BIM require significant resources, time, and competencies. If an organization lacks a clear understanding of its professional, technical, or human capacities, it may set overly ambitious goals that cannot be realistically achieved in practice. As a result, projects may stall, deadlines may slip, or the expected quality may not be delivered. Such experiences undermine internal commitment, erode trust in digital tools, and can delay the acceptance of future developments.	Human factor

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EXTERNALNAL FACTORS

	OPPORTUNITIES (+)			THREATS (-)		
7	**Getting best practice form other companies, countries**	„Best practice" models help identify critical points – such as regulatory barriers, organizational resistance, or technical pitfalls – that others have already successfully addressed. Integrating these adaptable practices into local processes can save time and money, increase implementation success, and enhance cooperation with other countries and institutions across Europe.	Process/ management	**Risk of too much technology, less social interaction**	Excessive digitalization can reduce personal interaction, which may negatively impact the quality of organizational collaboration, the flow of informal knowledge, and overall creativity. When communication is limited to digital platforms, opportunities for spontaneous idea sharing, problem-solving through informal dialogue, and interpersonal trust-building may diminish. This can particularly affect interdisciplinary teamwork and innovation, which often rely on personal engagement and dynamic exchange beyond structured workflows.	Human factor
8	**A good cause for improvement and change (technology and process improvement)**	Implementing BIM can serve as a clear and communicable goal around which organizational commitment can be built. It can help align different departments and stakeholders, and provide a strong foundation for change management initiatives within public institutions.	Process/ management	**Less creativity due to easy and serial design and production**	Flexibility and creative freedom are especially important in conceptual design, unique architectural solutions, or innovative technical approaches. If professionals rely solely on templates, automation, and predefined protocols, there is a risk that fewer new ideas will emerge, designs may become standardized, and the uniqueness or aesthetic value of projects could decline. This poses a particular challenge for public buildings, which often serve important social and cultural functions.	Human factor
9	**Sharing eperience in public sector, for example : EUBIM TG**	International initiatives such as the EUBIM Task Group provide opportunities for public institutions from different countries to share their experiences, successes, and challenges related to BIM implementation. These forums foster mutual learning and allow for the comparison of regulatory, technological, and organizational approaches. Public sector actors can gain a realistic picture of where they stand in comparison to other countries and identify their own areas for development.	Process/ management	**Start and stop early without earning the benefits**	The implementation and application of BIM is a time-intensive process, with its true benefits often becoming evident only in the later phases of a project – such as construction or operation. If a BIM-based initiative is terminated too early, for example after a pilot phase or initial application, the system may not have the opportunity to demonstrate its effectiveness. As a result, the time, energy, and financial investments may not yield returns. This can lead not only to the failure of the specific project, but also to a broader erosion of trust in the technology, making stakeholders more reluctant to support or invest in similar initiatives in the future.	Process/ management
10	**Exploring new businesses - creating new opportunities**	Based on the data from building information models, it is possible to develop digital twins, predictive maintenance systems, energy efficiency optimization, or smart building automation solutions. These developments can lead to the emergence of new business models and open the public market to new suppliers, startups, and innovative service providers, thereby stimulating economic activity and technological progress.	Process/ management	**Resistant people winning the battle**	The digital transition and the introduction of BIM often require significant changes to existing work methods, which can naturally trigger resistance among some employees. If those who oppose the changes hold key positions, exert informal influence, or even enjoy managerial support, they can seriously hinder—or even completely block—the transformation process. Such situations are particularly dangerous because resistance to innovation can deepen at the institutional level, leading to demotivation among more open-minded, development-oriented staff members.	Process/ management
11	**New projects with new requirements can generate new processes**	Building information models can support the creation of digital twins, predictive maintenance systems, energy optimization strategies, and smart automation solutions. These innovations lay the foundation for new business models, enabling startups, technology providers, and niche suppliers to enter the public sector market, thus fostering economic growth and innovation.	Process/ management	**Funding problem**	Digital transformation—including BIM implementation—frequently requires considerable investment in IT equipment, software licenses, training, and organizational restructuring. For smaller public institutions with limited budgets, these costs can represent a disproportionately large burden, especially in the absence of targeted national or EU-level funding. Due to financial constraints, these institutions may be forced to postpone developments, reduce their scope, or abandon modernization elements altogether.	Process/ management
12	**New regulation (on higher level)**	Regulatory or policy changes – such as introducing BIM requirements in public procurement or launching support programs – can accelerate digital transformation in the public sector. Clear expectations and standardized frameworks reduce uncertainty, empower decision-makers and project owners, and encourage long-term investment in BIM adoption.	Regulations	**Rapid Change of the regulatory framework within a short period of time**	Digital transformation often requires the introduction of new legislation or internal regulatory changes—such as mandating the use of BIM or clarifying data delivery expectations. If such changes are introduced suddenly and with short deadlines, public institutions may not have enough time to adapt their internal processes, systems, and competencies. Poorly planned and rushed regulations can lead to operational disruptions and create tension among staff, especially when clear guidance or support is lacking.	Regulations

WORKSHOP VIII.

BIM IMPLEMENTATION AND TRAINING OPPORTUNITIES

SWOT ANALYSIS

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EXTERNALNAL FACTORS

	OPPORTUNITIES (+)			THREATS (-)		
13	**Open standards**	In the case of BIM, open standards – such as those related to IFC, BCF or CDE – make it possible for tools from different manufacturers to operate together within a unified digital environment. This reduces dependency on proprietary, vendor-specific systems and gives greater flexibility to both procurers and developers. Moreover, open standards promote sustainable data management by ensuring that information remains accessible and reusable over time.	Regulations	**New regulation (on higher level)**	A lack of detail, multiple possible interpretations, or insufficient understanding of how to apply new rules may lead to misinterpretations by stakeholders. This can result in poor decisions, regulatory non-compliance, or excessive caution. Ultimately, these issues undermine the intended impact of the legislation and reduce the overall effectiveness of its implementation.	Regulations
14	**Harmonise existing EU BIM standards**	Current European BIM practices and regulations vary significantly between member states, which can hinder the smooth implementation of international projects. Harmonized, EU-level BIM standards – such as common data formats, model structures, and process definitions – facilitate collaboration across borders and enable designers, contractors, and operators from different countries to work together more efficiently.	Regulations	**Over-complicated BIM rules**	Overly complex BIM standards – such as excessively detailed model structure requirements, exhaustive data field lists for all disciplines, or strictly enforced file-naming conventions – can pose serious barriers to practical application. This is particularly true for public institutions or smaller organizations that are only beginning to adopt BIM and lack established methodologies or experienced internal teams.	Regulations
15	**Support a strong EU single market**	The concept of a Digital Single Market directly supports the spread of a unified BIM requirements framework across Europe.	Regulations	**Cyber attack**	The risk of cyberattacks is increasing alongside the expansion of digital systems, and this is especially relevant in BIM-based workflows, where large volumes of often sensitive data – such as detailed design documentation of public buildings, security system layouts, and operational data – are stored and shared digitally. If these data sets are not properly protected, a successful attack can have severe consequences: not only data loss or service disruption, but also potential security risks.	Technology
16	**Growth of software market - brings new tenchologies**	The expansion of the software market and the emergence of new technologies can offer more flexible and customizable tools for public sector projects.	Technology	**Technology crash (servers, cloud systems ect.)**	Server or cloud system failures – whether due to technical issues, overload, network problems, or malicious attacks – can cause major disruptions to BIM-based workflows. Since project stakeholders often work in real time on shared models and exchange documents, such a failure can immediately slow down or even halt data management, communication, and coordination processes. Without an adequate backup strategy, redundant systems, or offline access options, data loss or delayed recovery can cause further delays, mistakes, and a loss of trust among stakeholders.	Technology
17				**Software difficulities (bugs or compatibility)**	Software issues such as unexpected crashes, data loss bugs, or faulty functions – as well as compatibility problems like mismatches between different software versions – can significantly slow down project execution. These issues often require additional time for debugging, workarounds, and technical support, all of which disrupt productive workflows and increase stress for users.	Technology
18						

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CONCLUSIONS

1. During the workshop, we thoroughly explored the experiences, challenges, and potential opportunities related to the implementation of BIM in the public sector. Based on the SWOT analysis, it became clear that although structural, organizational, and technological barriers significantly hinder digitalization in the public sphere, the direction and intent for progress are present at multiple levels. Participants agreed that the **key to success lies in a conscious, step-by-step implementation process** that takes into account institutional specificities, human resource capacities, and available funding.

2. One of the most important lessons learned was that digital transformation—particularly the adoption of BIM—is not only a technological shift but also **requires a change in mindset and organizational structure.** Effective change management, the continuous involvement of staff, and real competency development are essential to ensure that implementation becomes not just a formal, but a functional success. **Carefully selected pilot projects**, leadership commitment, and the gradual integration of regulatory frameworks all play a vital role in building trust.

3. Special emphasis was placed on the **risks of overly detailed or poorly prepared BIM regulations**, which may hinder rather than support practical application—especially in smaller or less experienced institutions. The goal of standardization and the use of open formats should be to enable flexible adaptation and bridge institutional differences. However, this requires clear, consistent guidelines and strong governmental support.

4. On the opportunity side, several positive trends emerged: **BIM can serve as a key driver of international collaboration, talent attraction, and increased economic competitiveness.** The growth of the digital market, the maturity of software tools, and progress in standard harmonization are all factors that can support public institutions in entering the world of BIM-based operations gradually and with reduced risk.

5. To summarize, the main takeaway of the workshop was that although the path is challenging, **the long-term benefits are undeniable: more efficient data management, greater operational transparency, and a more sustainable built environment.** The key to success lies in flexibility, gradual development, and conscious strategic planning—capable of transforming the entire organizational culture, not only through technology, but through strengthened collaboration as well.