Survey Report

The Role of openBIM in the Regulatory Process

Introduction

Regulatory approval processes are a major source of delay and risk for building projects worldwide. Software vendor-independent international conventions will encourage development and adoption of digital data interoperability based on Open Standard (openBIM) to reengineer the process.

The buildingSMART Regulatory Room's purpose is helping project owners and regulatory authorities benefit from the use of openBIM; from this privileged global observatory we are seeing a rising number of institutions, supported by the regulated business representatives, who are working on how to transform their organizations and introducing interoperable digital standards in their regulatory processes.

The Role of openBIM in the Regulatory Process : why a global survey

The Regulatory Room strategy is to engage actors of the regulatory process to support the adoption of openBIM to improve the whole process. To achieve this goal buildingSMART (and we think the global building ecosystem) **is tremendously interested in regulated firms and regulatory bodies expectations.**

Unsurprisingly, expectations are not the same everywhere, and change over time, so in 2020 we decided to launch a survey to fix a point and discover and analyse a general perception about openBIM adoption in the compliance processes, collecting the points of view of both regulators and regulated industry.

The final goal of the assessment was to find the best messages and communications channels to improve the engagement needed to foster openBIM adoption in regulatory processes.

The survey

The survey was hosted on the Typeform® web platform and promoted through the buildingSMART International Website.

The survey was launched during the Spring 2020 buildingSMART International Virtual Summit, and the responses were collected from March 2020 to March 2021.

The questionnaire consisted of 22 questions, initially published in English, then translated into Italian, Spanish, German and Japanese languages.

The ongoing and final survey outcomes were discussed during the buildingSMART Virtual Summits in October 2020 and March 2021.
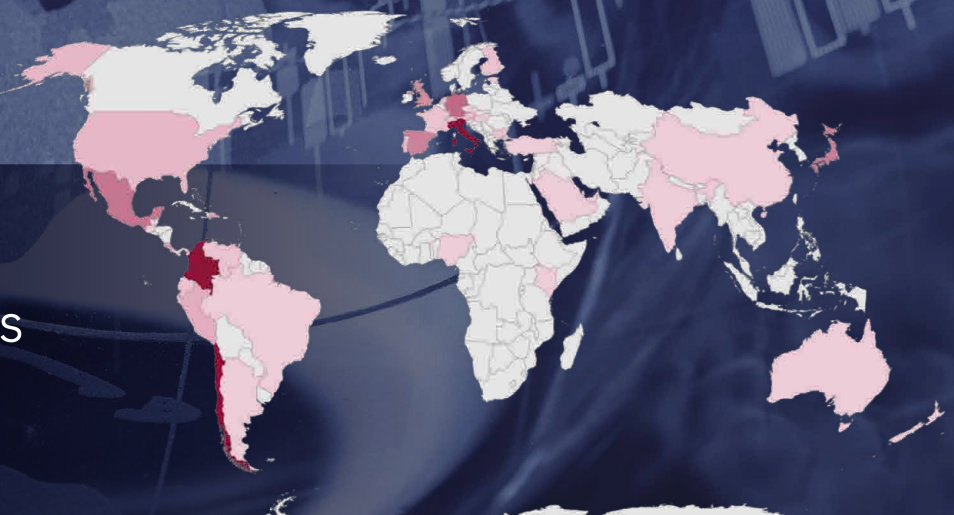
Survey outcomes

160 participants from 38 countries[2] participated in the survey.

The most represented geographical areas were Europe (34%), South America (27%) and Central America (10%).

The most used language was Spanish (50%) followed by English (37%), Italian, German and Japanese.

Used languages

| SPANISH | ENGLISH | ITALIAN | GERMAN | JAPANESE |

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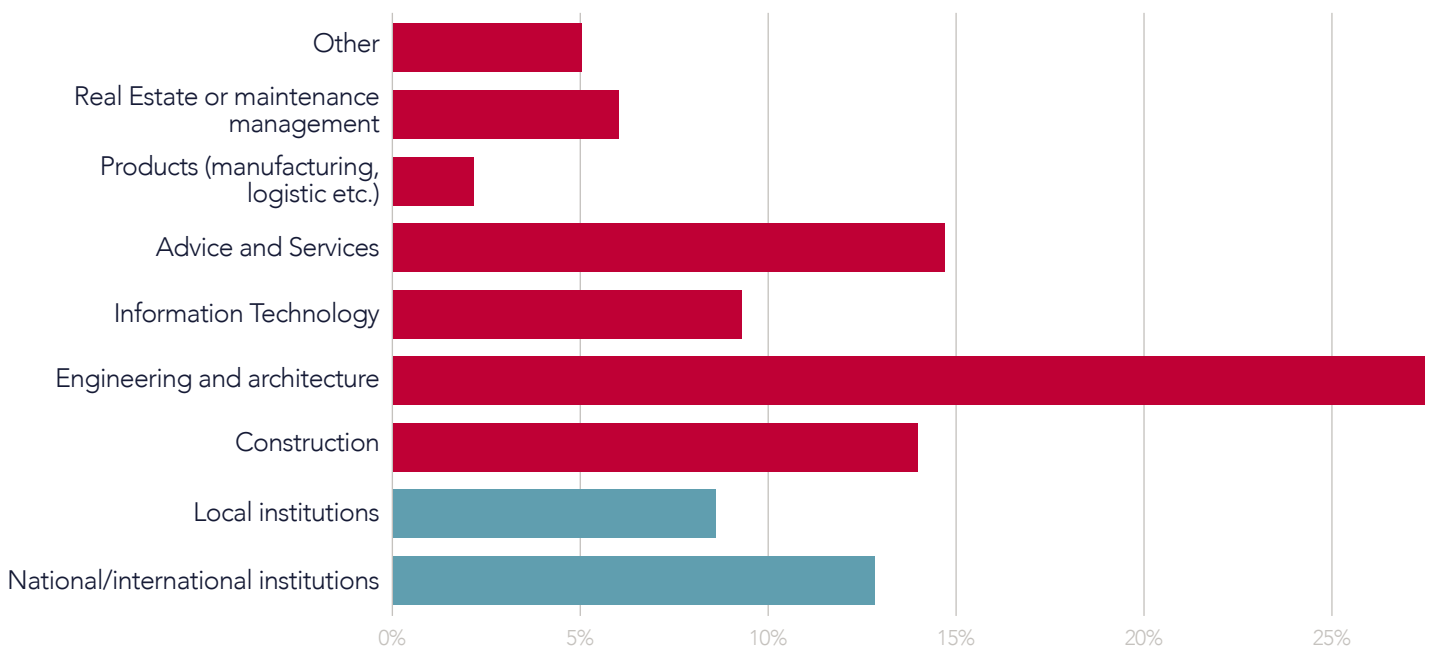
Survey panel composition

46% of the panelists declared they were not personally involved in building regulatory, that is indicative that BIM in regulatory is becoming a general topic in the building ecosystem.

About 18% of attendants belonged to regulatory bodies, that we consider a significative share giving good consistency and representativity to survey data.

33% of panelists declared they were inolved in global business; this indicates that, as expected, people involved in international activities is much sensible to building regulatory digital standards.

Slicing respondants by job (see picture), you can see the most interested are, other than insititutions, AEC, ICT and other services providers. It seems that real estate and building products managements businesses are not so involved in the topic (overall 8%), which makes sense as their activity is not so close to the project approval processes.
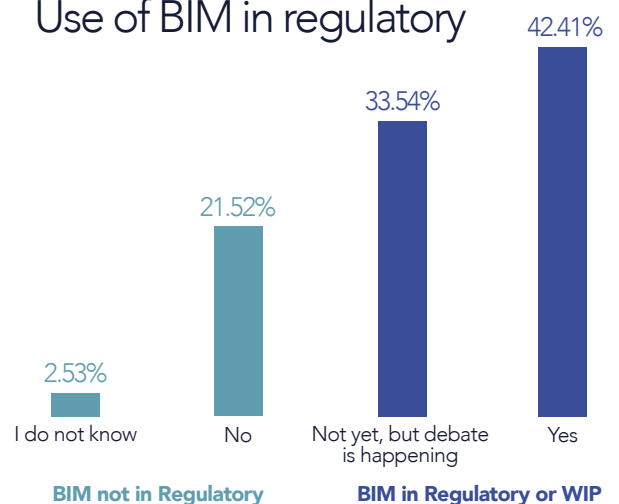
Survey panel by job

BIM adoption

More than 75% of panelists declared they are debating and/or using BIM in regulatory process (see figure).

Focusing on the 42% that are already using BIM in regulatory, analytics data reported most of them (74%) declared they have been involved in activities during the last 12 months, and 71% of them uses OpenBIM

This confirming that adoption of Open Standards is becoming an unavoidable expectation in regulatory processes, which looks to be strategically the most interoperable digital environment in building ecosystem, and adoption is fast growing.

Use of BIM in regulatory
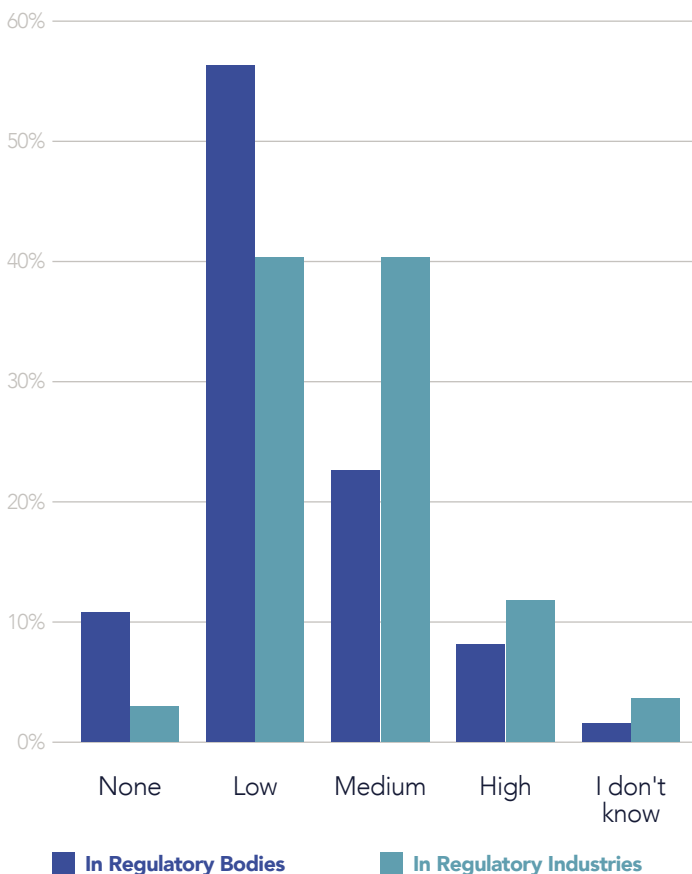
Trends in perceptions

The survey intended to then explore the perception about professionals' awareness of open standards in both regulated industry and regulatory bodies. As expected, the results (see picture) reported a medium to low awareness perceived in regulated industries and a little lower knowledge in regulatory bodies.

Another interesting outcome is that analytics showed the opinion is absolutely the same if you ask to one part to evaluate the awareness of the other, that confirms this perception of BIM awareness is a good representation of a real situation.

Attitudes to adopt BIM in regulatory, as reported in the picture on the left-hand side, showed a global moderate positive attitude to use BIM in regulatory.

The concerns in adopting BIM in regulatory was the last perception the survey explored and, as in the picture here below, showed that technical worries (25% overall) have been dramatically overwhelmed by the worries of complexity in adoption and reorganization of regulatory services, and from the consequent BIM adoption costs.

Average BIM awareness PERCEPTION

In Regulatory Bodies
In Regulatory Industries

Attitudes to adopt BIM in regulatory

1. Are/will be happy to use digital in regulatory processes and to support its adoption

2. Are/will be moderately happy to use digital in regulatory processes but concerned about potential issues

3. Are/will be worried to use Digital but they are aware this could support/improve the process if responsibly managed

4. Are/will be NOT confident in using Digital in permitting

Perceived worries

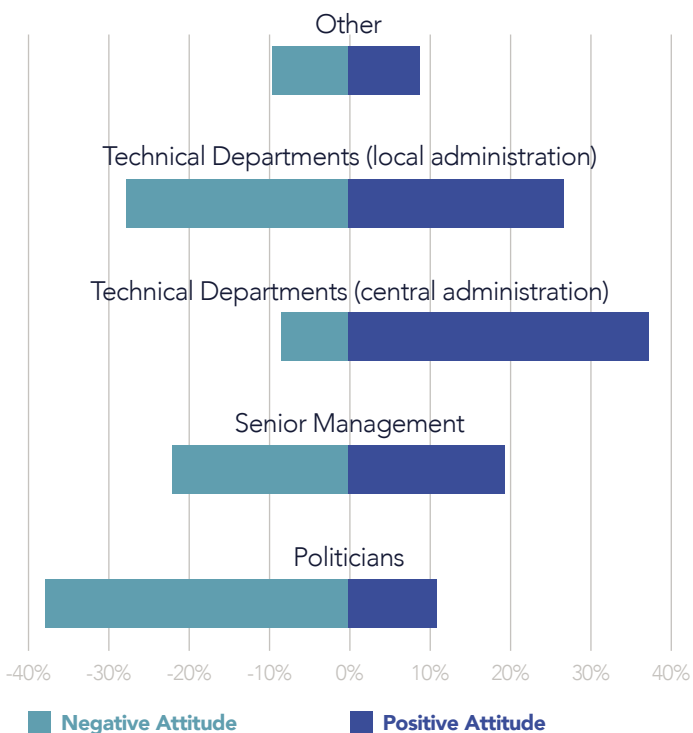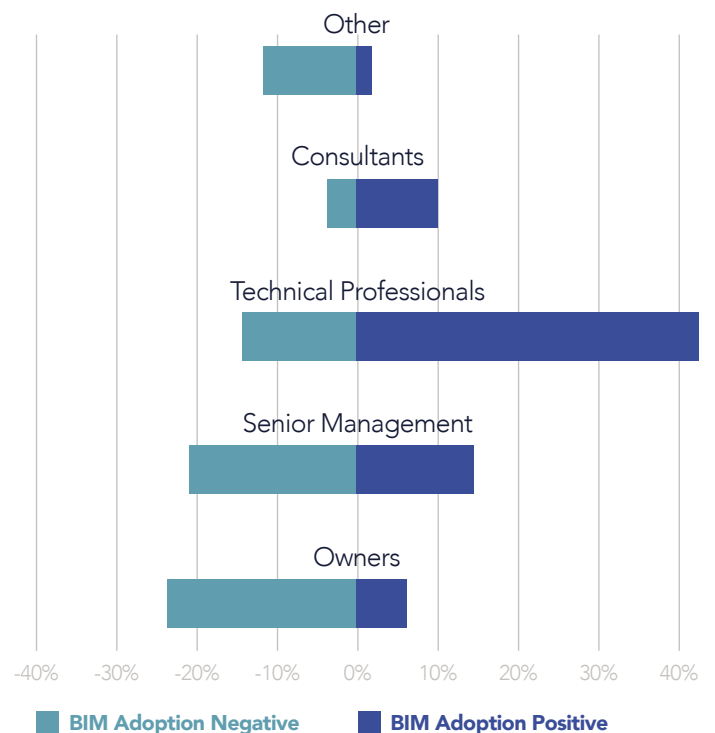| Complexity of BIM adoption | Difficulty of business reorganisation | Costs of BIM adoption | Security concerns | Loss of discretion |
| | | | Other | Unreliability |

Different personas and roles think differently

The last section of the survey was intended to segment 'ecosystem' requirements and perceptions by role and personas, again by comparing data for regulated industry and regulatory bodies.

As in the picture below, the situation in regulatory bodies is reflected in regulated industries, and the perception is that technical roles in both parts agree in supporting widely the BIM adoption, while management looks less confident.

Who in Regulatory Bodies has...

Other

Technical Departments (local administration)

Technical Departments (central administration)

Senior Management

Politicians

-40% -30% -20% -10% 0% 10% 20% 30% 40%

Who in Regulated Industries has...

Other

Consultants

Technical Professionals

Senior Management

Owners

-40% -30% -20% -10% 0% 10% 20% 30% 40%

■ Negative Attitude   ■ Positive Attitude   ■ BIM Adoption Negative   ■ BIM Adoption Positive

BIM in regulatory Champion

The last survey questions aimed to identify the personal profile of a "BIM in regulatory Champion", that is an ideal professional person that could support and promote the BIM transformation in an organization.

The outcome has been coincident both for regulators and regulated bodies, and identified an architect or engineer, 31 to 45 years old with a high technical and project-oriented attitude.
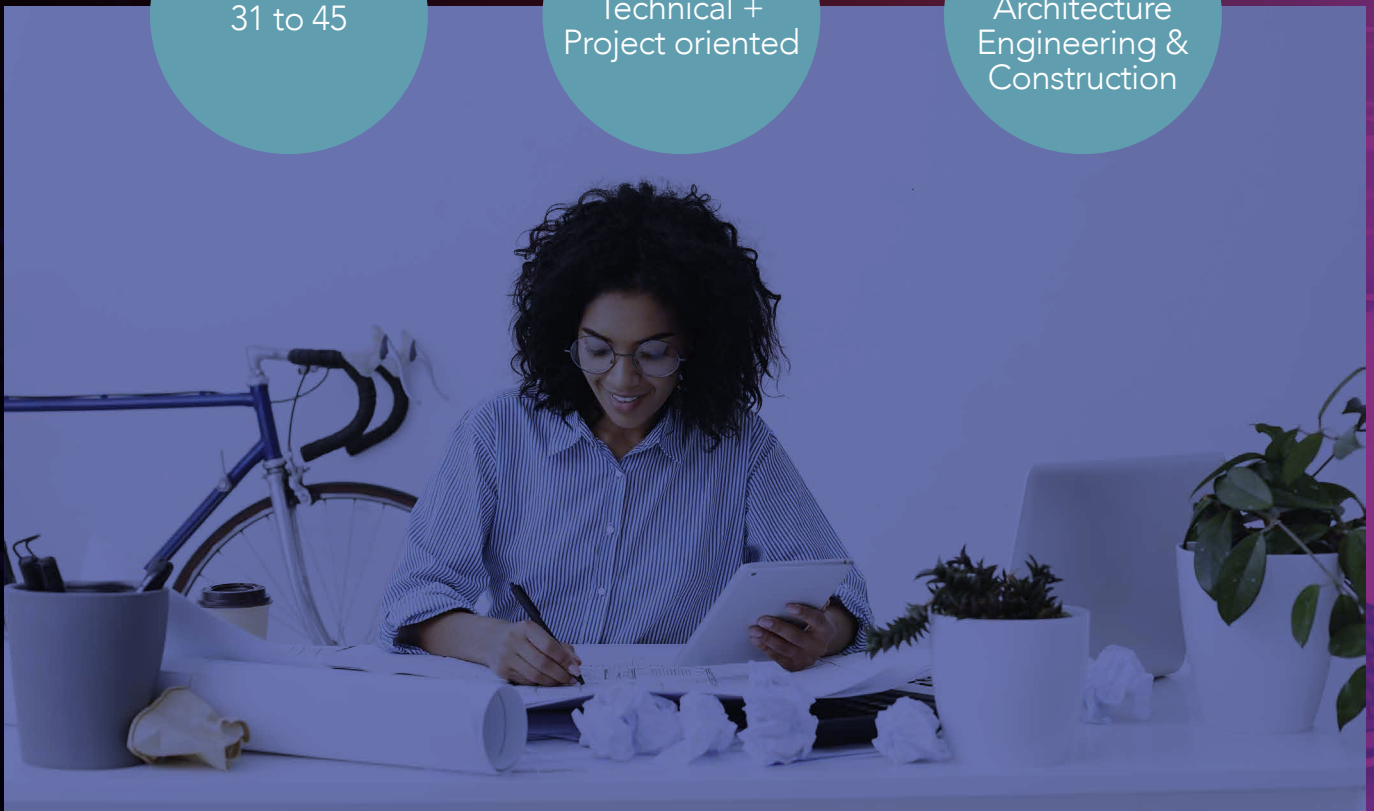
AGE
31 to 45

ATTITUDE
Technical +
Project oriented

BACKGROUND
Architecture
Engineering &
Construction

Conclusion

The survey participation has been global and wide, even though necessarily restricted to professionals involved in the BIM processes; this gives collected data and analytics a good significance.

An interesting outcome, highlighted especially by the Spanish speaking attendance, is that language matters for the wider diffusion of messages of BIM, especially when talking about regulatory topics, that are typically strictly linked to national laws and codes.

Data about adoption showed that openBIM in regulatory is an established topic for the building ecosystem, and this is enforced by considering that almost one half of the attendance was not directly involved in the matter. The awareness about the advantages of using open digital standards for compliance is growing fast around the world and accelerate in areas such as Latin America.

Good awareness combined with the moderate positive attitude to adopt it shows that the ecosystem is generally ready to start the transformation but conscious about the gaps in knowledge and training.

Another major outcome of the survey is the global highlight on the worries about openBIM adoption complexity. This need efforts from all actors to define a clearer and more complete path to the change, including understanding digital standards.

To achieve simplification, it looks essential to work on BIM in regulatory messages and documents to make them more understandable and fit to the target, primarily for regulatory bodies, and considering more detailed target requirements in their language and appropriate to their code regulation structure.

To support this, it appears essential to involve proactively "BIM in regulatory" champions to support and promote the diffusion of messages and opportunities especially to their management.

Acknowledgements