

7th International Workshop WHEN SOCIAL SCIENCE MEETS LEAN AND BIM

The BIM impact on stakeholder management in airport construction projects

Taís Scherer
Daniel Forgues

École de technologie supérieure - États

Contact: taisscherer77@gmail.com

CONTEXT



LAX - Los Angeles Airport



LAX renovations

Airport industry:

- complex business
- multiple stakeholders
- divergent goals

Construction on airports:

- many restriction
- documentation challenges
- difficult decision-making process

Research question:

How the use of BIM technologies, here translated into 3D visualization, can impact the efficiency of stakeholders' management in airport construction projects?

Research objectives:

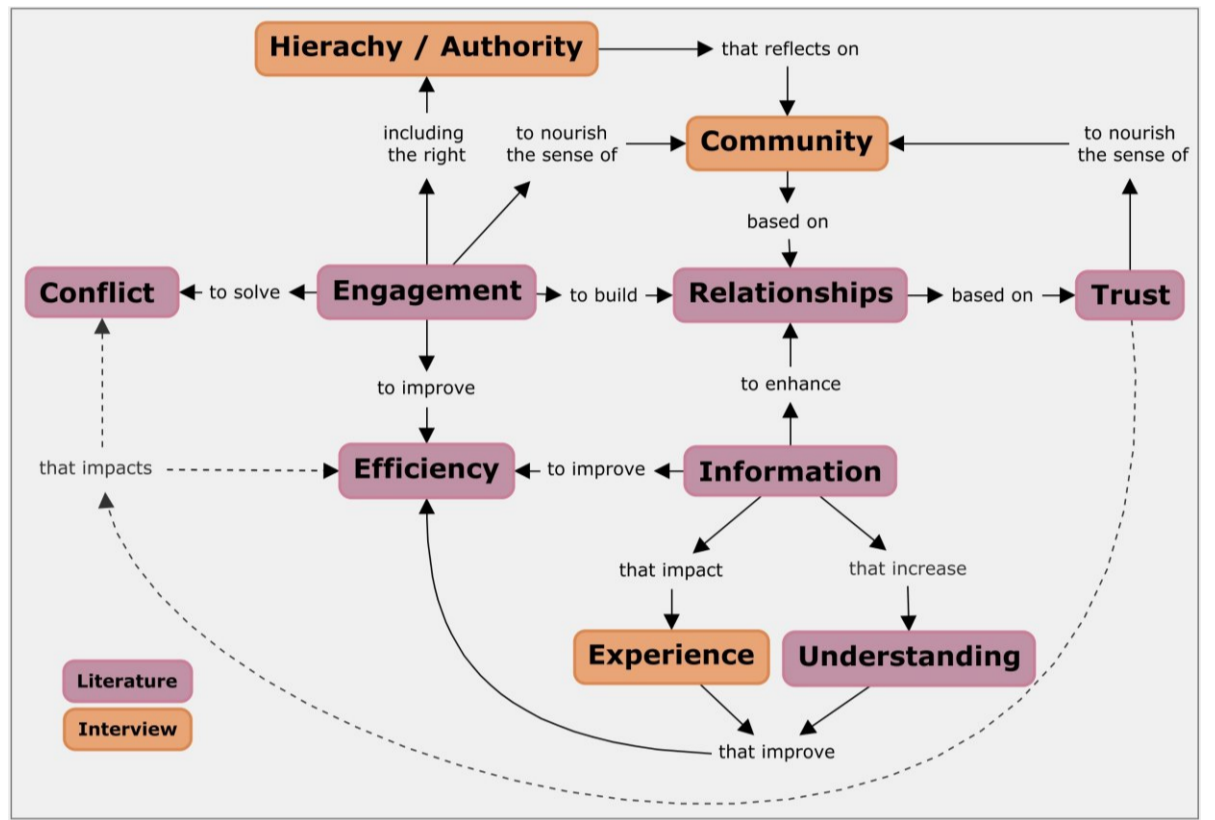
- to study the relationship between the improvement of information quality and stakeholders' engagement;
- to understand the impact of BIM uses on the decision-making process.

METHODOLOGY

Research design:

- exploratory case study - YQB
- unit of analysis - stakeholders
- semi-structured interviews with airport stakeholders from YQB, YUL and LAX
- sampling: Director level - 4
Project Manager - 3
BIM Manager - 2
Clients - 4
- framework and findings validated with two airport specialists

Coding:

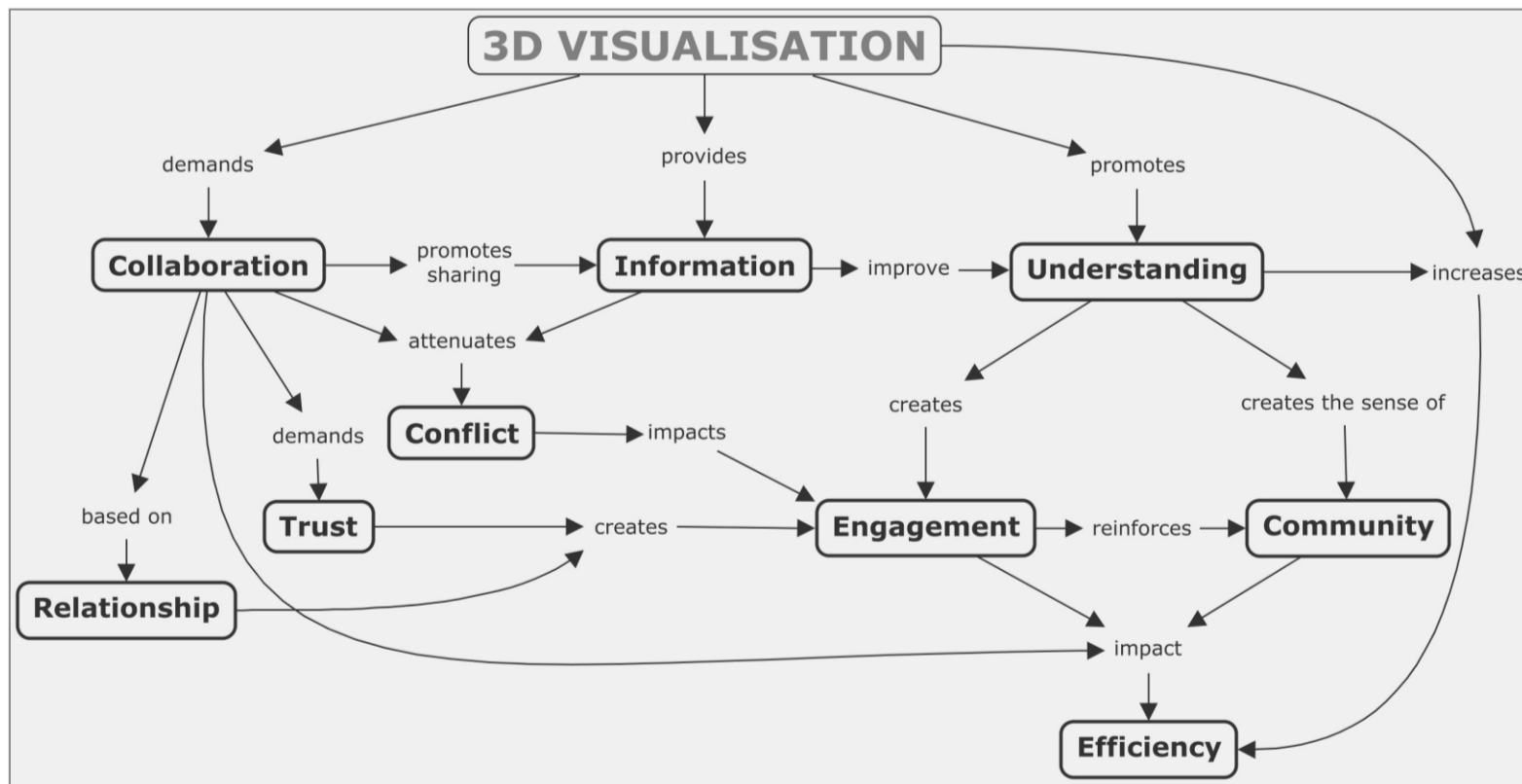


Framework:

DOMAINS	Airport Industry Project Management Construction Industry
DIMENSIONS	Stakeholder Management Communication Processes Decision-making Processes
CATEGORIES	Conflict Engagement Relationships Efficiency Trust Information Understanding Experience Community Hierarchy/Authority

- it is through engagement that efficiency on stakeholder management can be reached;
- this engagement built through trustworthy relationships can impact conflict situations;
- engaging the ones with the right level of hierarchy and authority to make decisions can, through those relationships, create a sense of community among all participants;
- the characteristics of the information being used might impact stakeholders' relationships, as their understanding about the subject, decreasing their lack of experience;
- the efficiency of stakeholder management depends on their engagement, the information they received and how included they are in the project processes, as it is also a reflex of their understanding concerning project solutions.

DISCUSSION



- understanding can create engagement and the sense of community that is also reinforced by a better level of engagement;
- engagement and community impact the efficiency of project processes themselves;
- providing information in 3D format demands collaboration, which promotes sharing information, improving understanding and, consequently, the efficiency of all processes using that information;
- collaboration also attenuates the conflicts, impacting directly on stakeholders' engagement;
- because collaboration depends on trustworthy relationships among actors to be achieved, it might also impact significantly stakeholders' engagement.

CONCLUSION

The findings report that 3D visualization impact stakeholder management in three main elements: because it provides good quality information, it promotes better understanding of project propositions, increasing the stakeholders' engagement. These three elements improve the efficiency of project processes, which is an accordance with the literature review and the interviews.

Contributions:

- the conceptual framework build to answer the research question: domains, dimensions and categories;
- the categories from the interviews: hierarchy / authority; experience; sense of community.

Future researches:

- the conceptual framework could be further explored and tested on other airports and project context to verify how strong it is;
- the BIM affects the human behavior on project environment.