New Cooperation Models in BIM Contexts

by

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ETS, Montréal - February 2, 2018
BIM in an Architectural Context

Architectural firm: value creation tailored to the customer

Global integration of costs, environment, esthetic, coherence, local integration
One deep conversation and then a visualization process starts

Client:
Bernard Arnault, Fondation Louis Vuitton

Architect: Frank Ghery
One idea

Client: Bernard Arnault, Fondation Louis Vuitton

Architect: Frank Ghery

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One concept

Client: 
Bernard Arnault, Fondation Louis Vuitton

Architect: Frank Ghery
1,000 hand made mock-ups

Client: Bernard Arnault, Fondation Louis Vuitton

Architect: Frank Gehry
One digital transfert

FINAL HAND MADE MOCK-UP

VIRTUAL MOCK-UP

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2018-02-13
What does BIM really mean for the whole design - construction - maintenance - recycle process?
## From pre-BIM to BIM (1970-1995)

**Why?** Less waste, less people, less delays, less costs

**What?** Automate drawing and documenting work through Product data models

## BIM to Manage (1991-2011)

**Why?** Processes integration from design to maintenance

**What?** New integrative processes

**How?** BIM and LEAN, integrated software, IT platform

## BIM 2.0 Since 2004?

**Why?** Value creation

**What?** Learning through collaboration; New business models

**How?** IT platform; IoT, GIS; Cloud; Sensors; Semantic web; BIM for the city

## Levels of analysis

**Business Ecosystem**

**Firm strategic level**

**Innovation project**

**Individual work**

### Collaboration
WHERE IS BIM?

In Finland? In Québec?

In the hand made digitized mock-up?
In the IT streamlined construction process?
In the software industry and predefined virtual objects?
Inside new end-users design practices?
In the AEC business ecosystem?
DESIGN DOMAIN
Ideas, Concepts, Mock-ups

VIRTUAL DOMAIN
Virtual mock-ups, Virtual Objects

CONSTRUCTION DOMAIN
Organizations, Guilds, Skills, Machines...

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Contributor: contributors that have created a number of success models (Wikipedia) by breaking down the boundaries between producers and consumers
Collaborator: an emphasis on collaboration and co-creation facilitated by putting the tools rather than the object of design in the hands of users.
Meta-designer: design for designers

Figure 1. Different Levels of Participation and Engagement

Familiarity with software applications has become an essential requirement for professionals in a variety of complex domains: architects, engineers, etc.
<table>
<thead>
<tr>
<th>Category</th>
<th>Consumers</th>
<th>Contributors</th>
<th>Collaborators</th>
<th>Meta-designers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architects</td>
<td></td>
<td>F02 F16</td>
<td>F20</td>
<td></td>
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<tr>
<td>Engineers</td>
<td></td>
<td>Q07 Q12</td>
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<tr>
<td>Owners</td>
<td></td>
<td>Q06 Q08</td>
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<td>National Innovation System’s Managers</td>
<td>F01 F13 F18 F12</td>
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<td>F14</td>
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<td>Academicians</td>
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<td>Q02</td>
<td>F19 Q10 F05</td>
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</tbody>
</table>
Cognition, soutenabilité, infrastructures, modèle d’affaires et architectures

COSIMA²

À la frontière de l’écologique, du social, de l’intelligence, de la technologie, des affaires et des architectures organisationnelles
ICIS 2016 Dublin

Intergroup Collaboration: An Examination through the Lenses of Identity and IT Affordances

Marie-Claude Boudreau, Hamid Nach and Albert Lejeune

Read Paper
Albert Lejeune
Professeur-chercheur
Université du Québec à Montréal

Hamid Nach
Professeur-chercheur
Université du Québec à Rimouski

Marie-Claude (Maric) Boudreau
Professeur-chercheur
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Hamed Motaghi
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Université du Québec en Outaouais

Guinaz Aksenova
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University of Liverpool
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Levels of analysis
- Business Ecosystem
- Firm strategic level
- Innovation project
- Individual work

Collaboration
THE END
“We (architects) are all hackers...We’ve always been a profession of hackers. Every building is a one-off made up of countless elegant hacks, each bringing disparate materials and systems together into a cohesive whole.”
“But when it comes to the software that designers have come to rely on, most of us have been content with enthusiastic consumerism, eagerly awaiting the next releases from software developers like Autodesk, McNeel (Rhino) and Bentley (MicroStation)”. 