

320660

We are BIMing—Why Isn't It Working as It Should?

Maria Minassian
Parsons Corp.

Learning Objectives

- Identify deficiencies in the traditional BIM process and discuss how to improve them.
- Learn how to create new means of communication with all project stakeholders, bringing them all together and maximizing efficiency.
- Learn how to establish improved BIM workflows to bridge the gaps.
- Learn how to produce a better-coordinated project based on BIM transparency.

Description

BIM (Building Information Modeling) has been around for more than a decade. Most firms and disciplines have already adopted it. Why aren't we experiencing the promised ultimate profit of using it? This session will cover the main challenges facing each member of the BIM team. We'll identify the challenges and discuss the means to avoid and overcome these issues. The class will go over examples encountered in our actual projects, discuss the extents of the damage created, and share the ways we overcame it.

Speaker(s)

Maria has been working with Parsons Corp., for the past five years, as a Senior BIM Coordinator for Infrastructure Transportation group, Rail and Water Treatment projects. An Architect by education, with many years of experience in Architectural Design, Urban Planning, BIM and GIS in building and Infrastructure projects, Maria was, previously, part of the BIM implementation team in several prominent multidisciplinary international firms in the world, specializing in large complex projects with design and construction teams scattered over the globe.

We are “BIMming” but it is not happening

Everyone wants to be successful in BIM. Who doesn't?

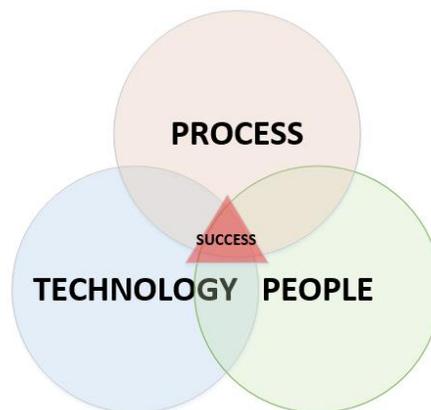
What is preventing BIM to succeed as promised? Where did we go wrong?

Today, we will:

- Examine the whole process
- Identify the problem(s)
- Find out how to resolve it.

In order to have successful and complete implementation of any new System, we need to look at all three aspects of the Trilogy of success:

Process, Technology and People.



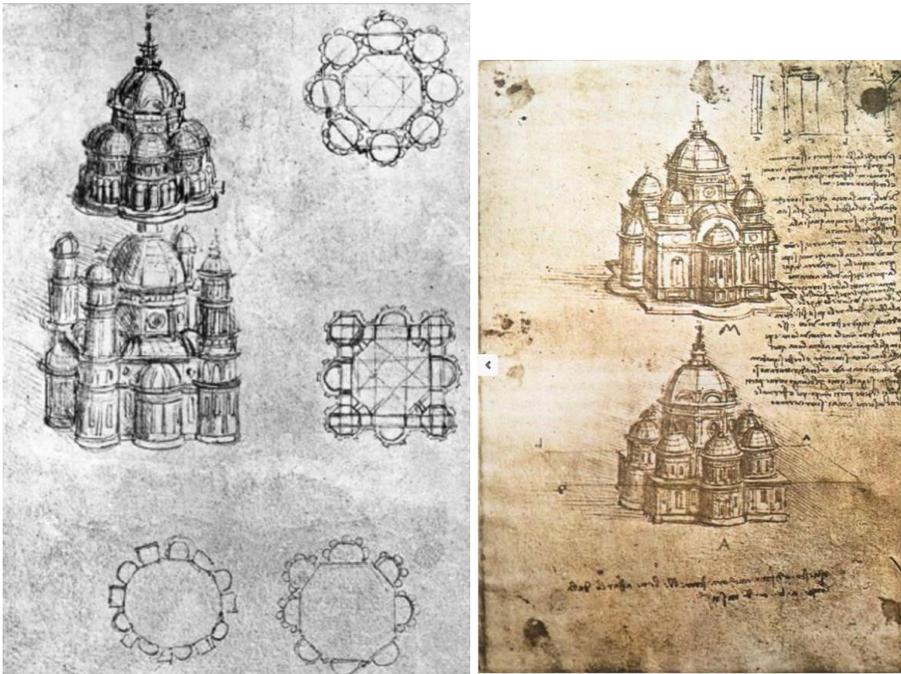
Trilogy of Success

To achieve SUCCESS, all three components of the Trilogy must be running not only at the same time, but also at the same pace. If one component fails, the whole the structure will fail.

The Process

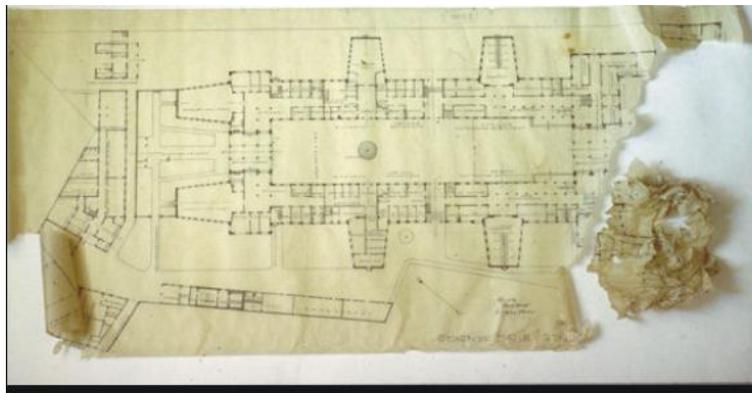
How did the Process evolve?

- Conversion of 3D building ideas into 2D rigid sketches in order to convey concepts and design intent to others.



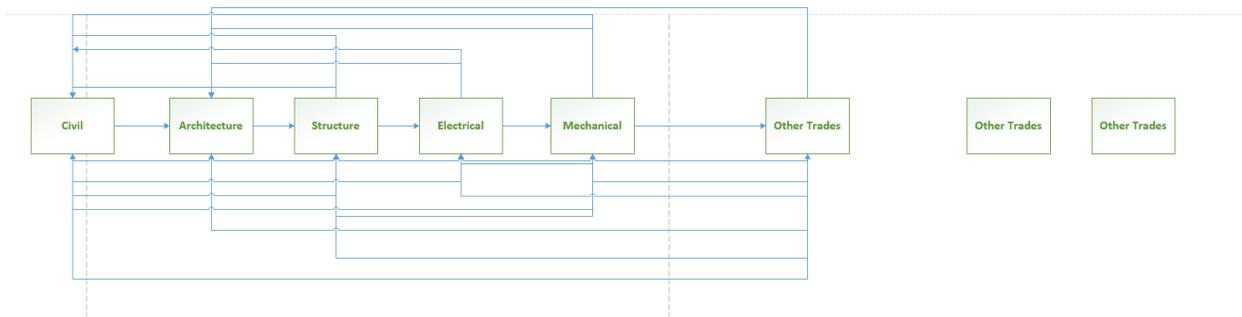
Architecture studies sketches by Leonardo Da Vinci
Courtesy of LeonardoDaVinci.net

- Use of transparent media for transmitting ideas – one surface where design input evolves.



Design Drawings on transparent paper

- Design and Coordination process was done “in series”: Spider web.



Design and Coordination “in series” – Spider Web

The Process was slow, but it was working.
This Process lasted for a very long time.



Engineering and Architecture wonders of the world

... Then, BIM kicked in!

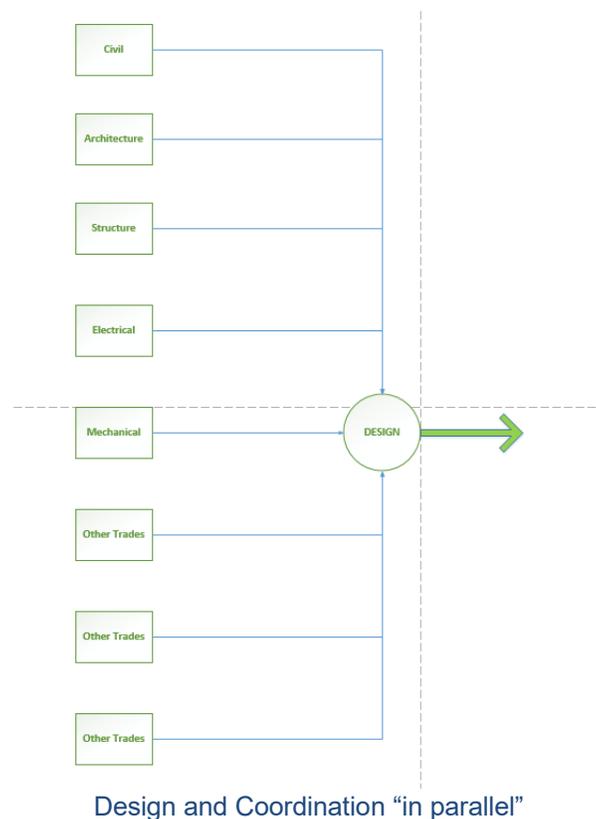
- Think in 3D, Communicate in 3D and Resolve issues in 3D.

- Models became intelligent, they started to be aware of each other and they started to react with each other.
- The bag of information was a digital model. It could contain anything and everything.

As a result, we ended up communicating less. The BIM Model was intelligent enough to assess the situation and to react as it should!

- All design teams started working on the same design model, at the same time.

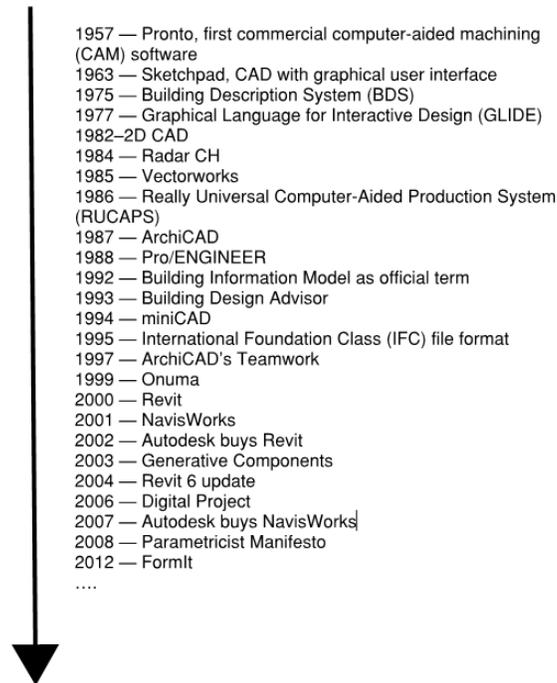
Design and Coordination time got reduced: Design and Coordination was done “in parallel” and no more “in series”!



The Technology

- Old tracing paper got replaced by computers
- Drafting tools were replaced by Software.

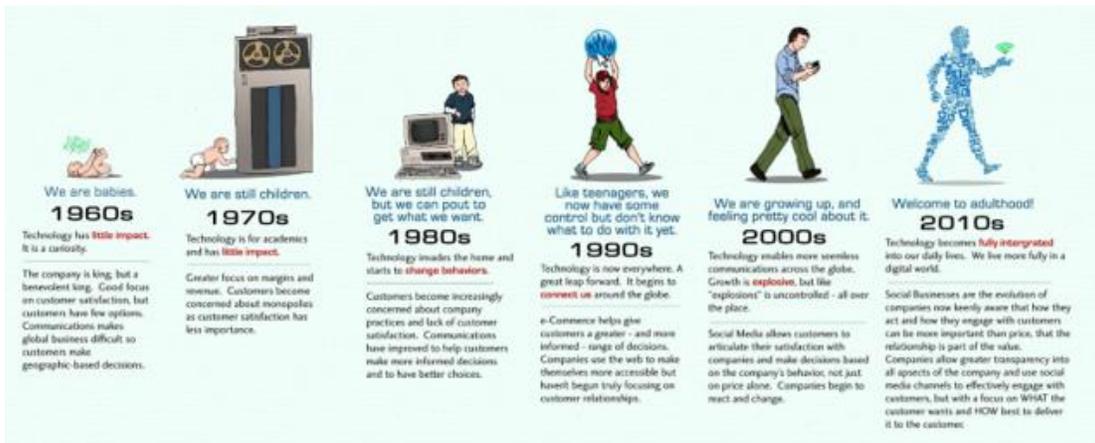
Advanced features, more intelligence, more sophistication in technology and in software industries.



Timeline of BIM Software - history

For each new software, a new technology was needed: faster, more complex and more intelligent. *Powerful Processors, mobile devices, drones, cloud computing, ..*

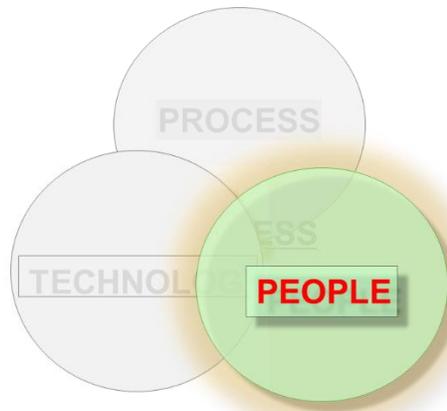
The sky is the limit!



Timeline of Technology - history

- Process and the Technology are evolving successfully
- Wheels are not turning as they should => we need to take a closer look at the third component: People.

... and the People ... and People's Silos



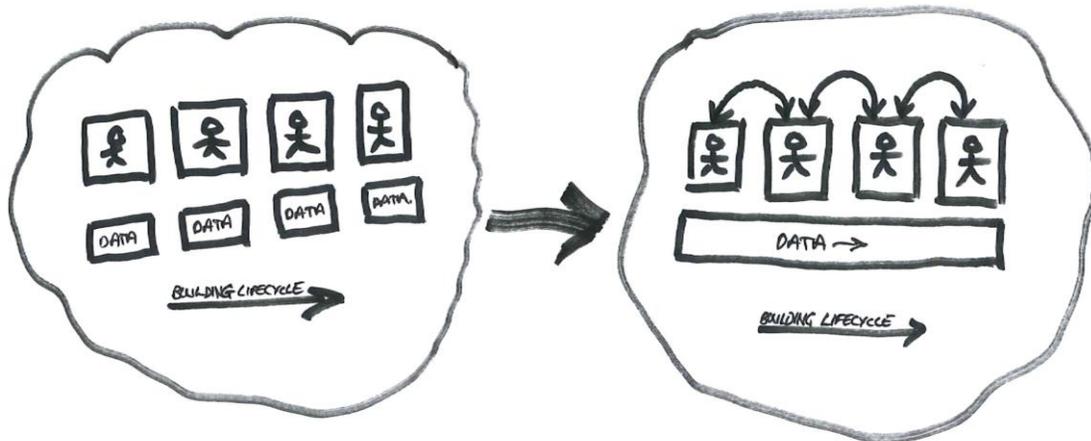
Trilogy of Success

As BIM gets more and more open, more and more transparent and more sophisticated, we noticed that people sink more and more into deep silos.

➤ Different types of silos:

- People Silos

- People mindsets
 - People old mindsets.
 - “Knowledge and Information is power!”



DIFFERENT mindsets

- Management mindsets: Because we do BIM and they are supposed to know how to BIM!

How are you BIMming? What is the BIM environment in your company?

BIM is one, but each office has its own “flavor of BIM”.

- Do you have written procedures for BIM in your office?
 - Do you brief the newcomers on BIM procedures?
 - Do you train them on the BIMming process in your office?
 - Do you tell them how much BIM is involved in your project?
- People Silos lead to Data Silos: no Data flow
 - Does everyone on your team know what is happening in the Project?
 - Do you communicate all relevant information with all concerned people?
 - Is everyone on your team aware of the changes: in design. New decisions, new procedures, newcomers,..



DATA AND INFORMATION Silos

In one of the recent webinars I have attended, I was surprised of these numbers.

- Unclear communication lines between teams – \$15 Billion/year: cost of rework.
- Inaccurate field data such as design changes – 55% of rework
- Poor construction documents from poor communication – 3-5% added cost per project

The BIM project is alive, and it evolves => no place for Data and Information Silos.

- Environment Silos
 - Open Spaces ... open, but a silent environment
 - Virtual Invisible walls
 - No communication



We learn:

- BIM is not about the Process, but about HOW we put that Process in action
- BIM is not about Software or Technology but about CULTURE CHANGE.
- BIM and Digital Communication CANNOT REPLACE real life communication.
- Process and Technology are the starting points with a potential to grow=> This is when BIM begins.

What is the Solution?

Encourage>>Engage>>Educate

In BIM, if we succeed, we all succeed and if we fail, we all fail.

- Encourage communication!!



- Encourage making video calls or meeting face to face, when possible to discuss issues.
- Encourage using brainstorming/coordination room.
- Encourage talking about the issues and asking for clarifications. Even when they “know how”. Better to “measure twice and cut once”.

- Make BIM Transparent again!
- Engage
 - Make a showcase out of little things, successes, accomplishments.
 - Schedule tips and tricks sessions. Let your team share their experiences and their little successes.
 - Create contact groups on outlook and add it to your BIMPxP. Remember to UPDATE it when needed => all the teams need to be informed of everything *in the project*.
 - Treat all teams equally, even if they are not part of your company - once they work on the same project, they are ONE TEAM! Your team!



- Make BIM a meeting place again
- Educate
 - Teach your team how to use a federated model for coordination meetings – even when the meeting is “one to one” –
 - Educate and delegate simple tasks:
 - Promotes sense of belonging
 - Encourages teamwork
 - Minimizes wait time
 - Explain to your team how things are done. Even if they are not, directly, concerned with that.
 - Expose the team to novelties in BIM world: seminars, articles, lectures, tips and tricks sessions.

- There is no place for mystery in BIM.



Conclusion

Communication=> Trust=> Transparency=> Excellence