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

Maria Minassian

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AUTODESK. UNIVERSITY



About the speaker

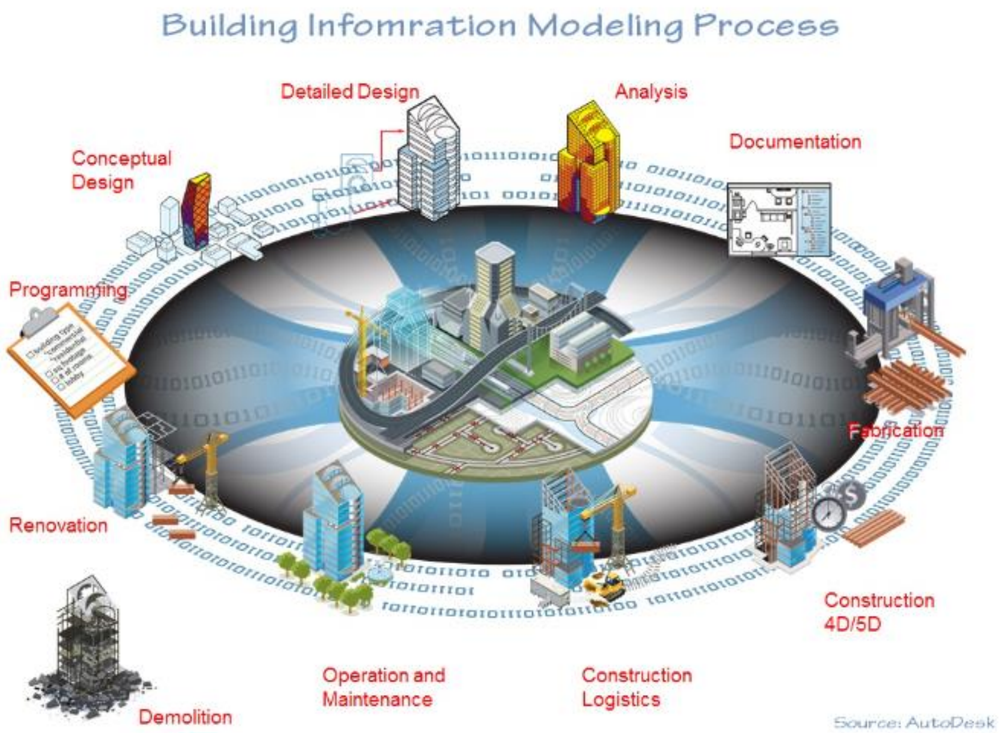
Maria Minassian

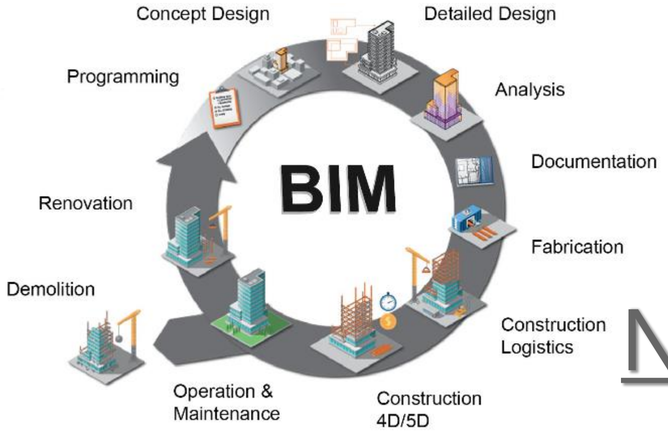
Maria has been working with Parsons Corp., for the past five years, as a Senior BIM coordinator for Infrastructure Transportation group, Rail and Water Treatment projects. An Architect by education, with many years of experience in Architectural Design, Urban Planning, BIM and GIS in building and Infrastructure 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..


BIM

Shorter time

BIM

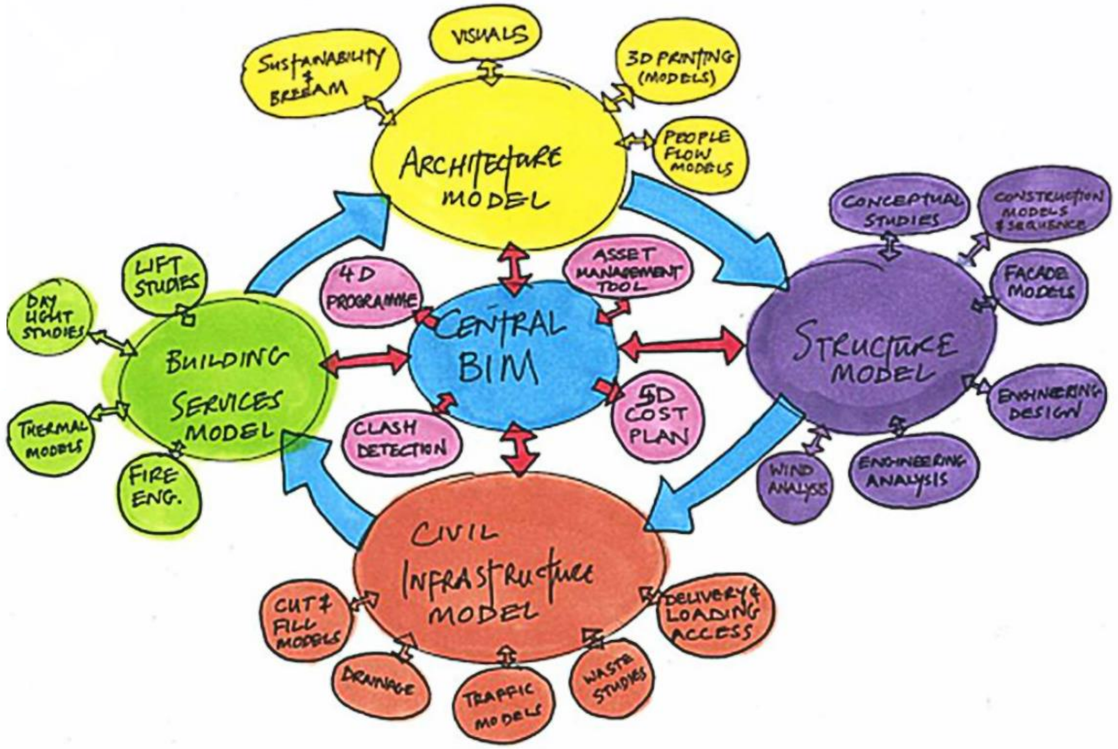




No reworks

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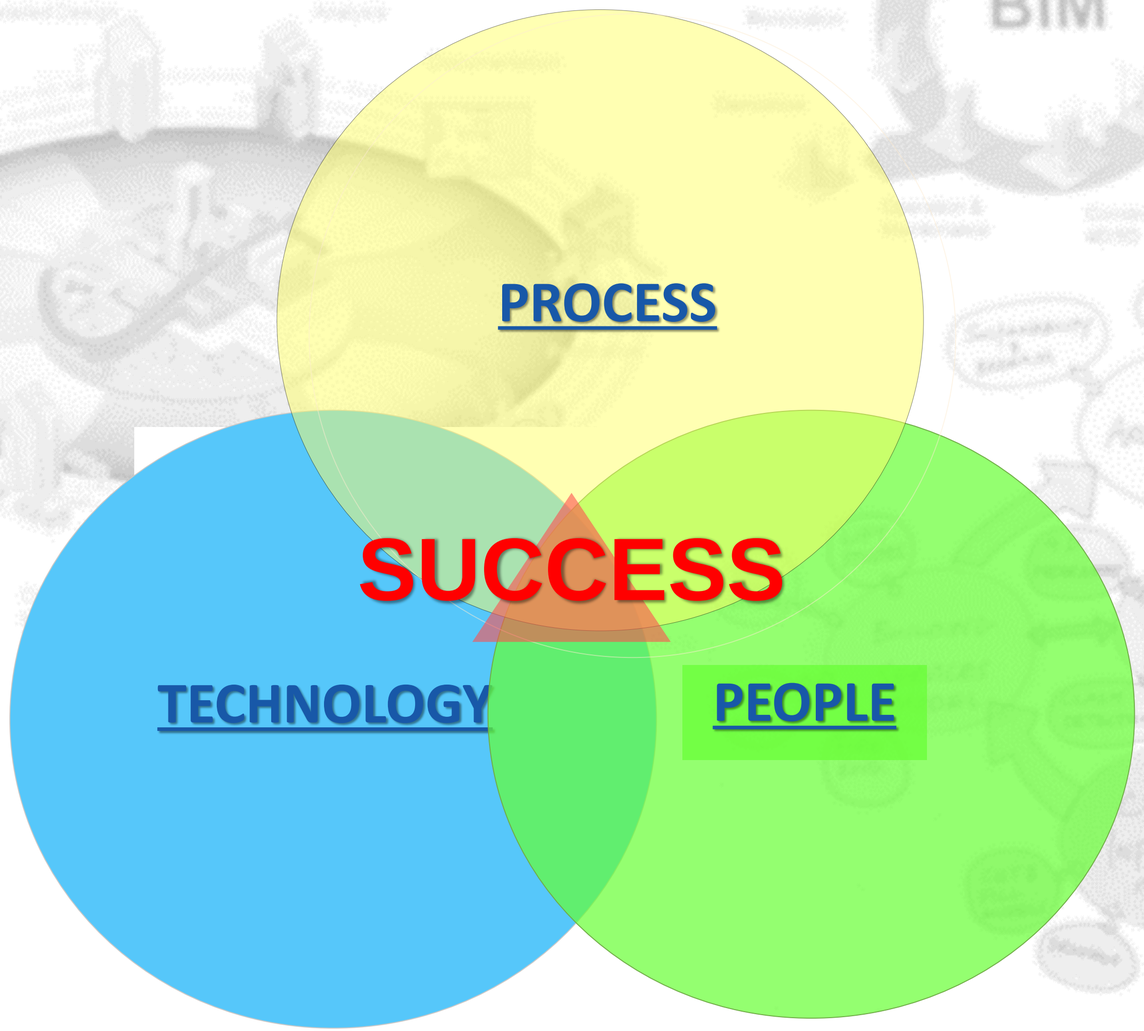
We are *BIMming! But the magic is not happening*…

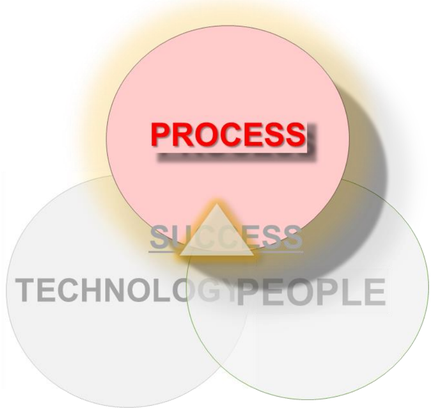
Where is the Promised Land?

Where did we go wrong?

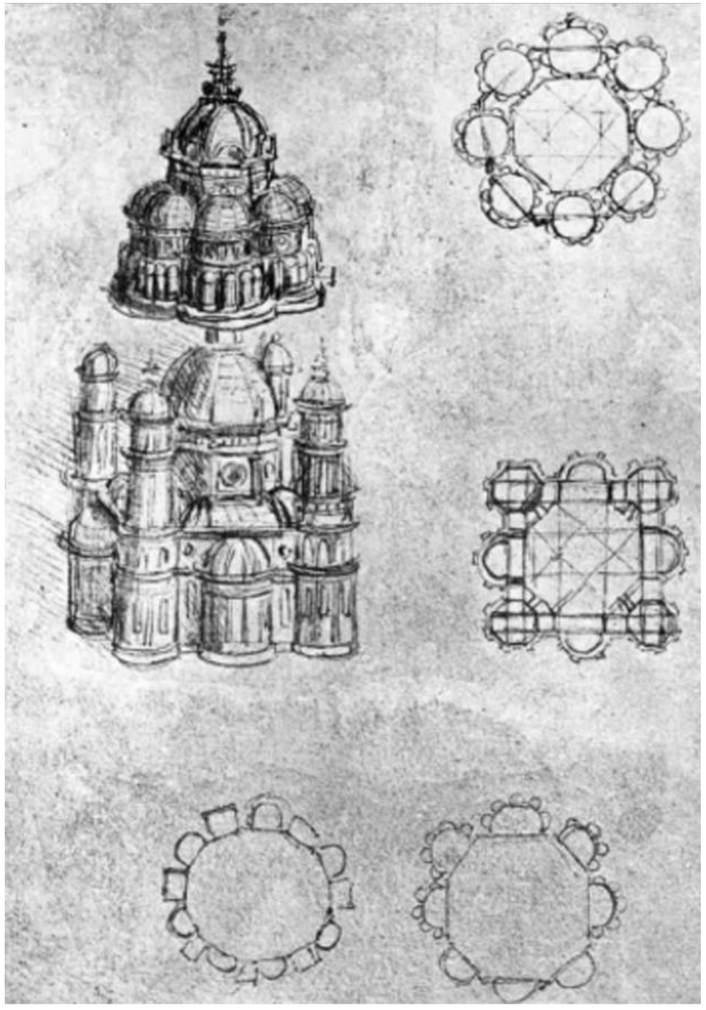
- Examine the process
  - Identify the problem(s)
    - Find out how to resolve it.

The Trilogy of Success



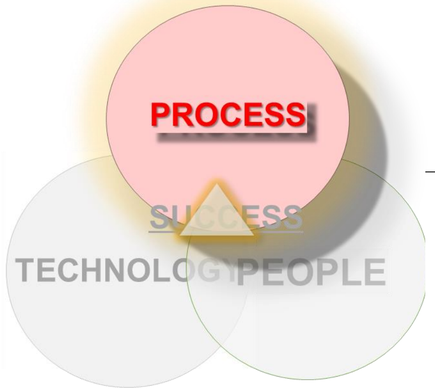


The Process



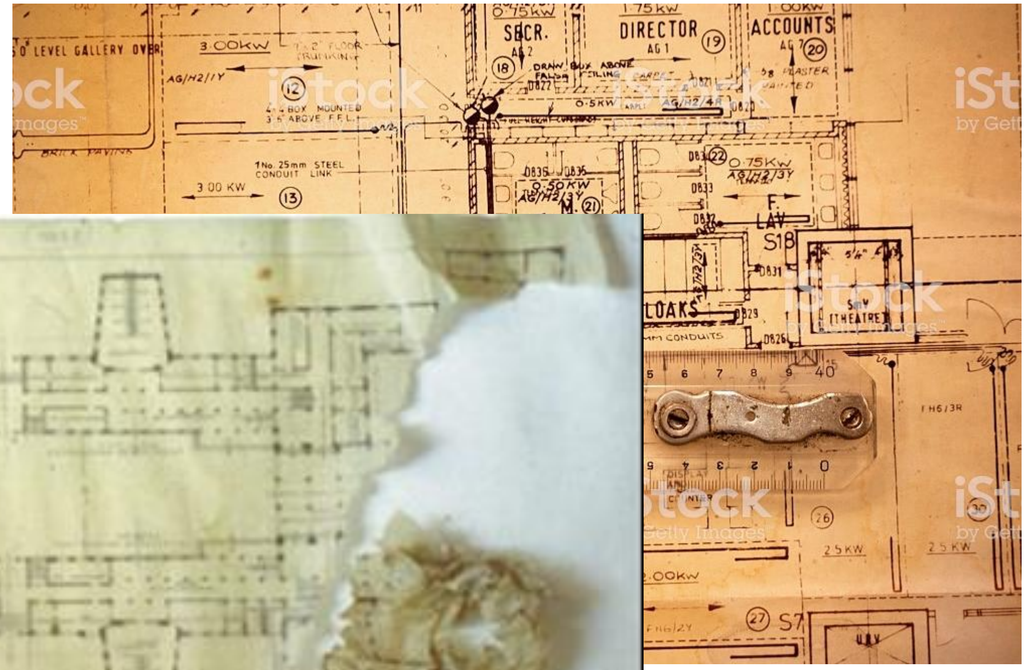
Convert 3D visions into 2D flat surfaces for communication

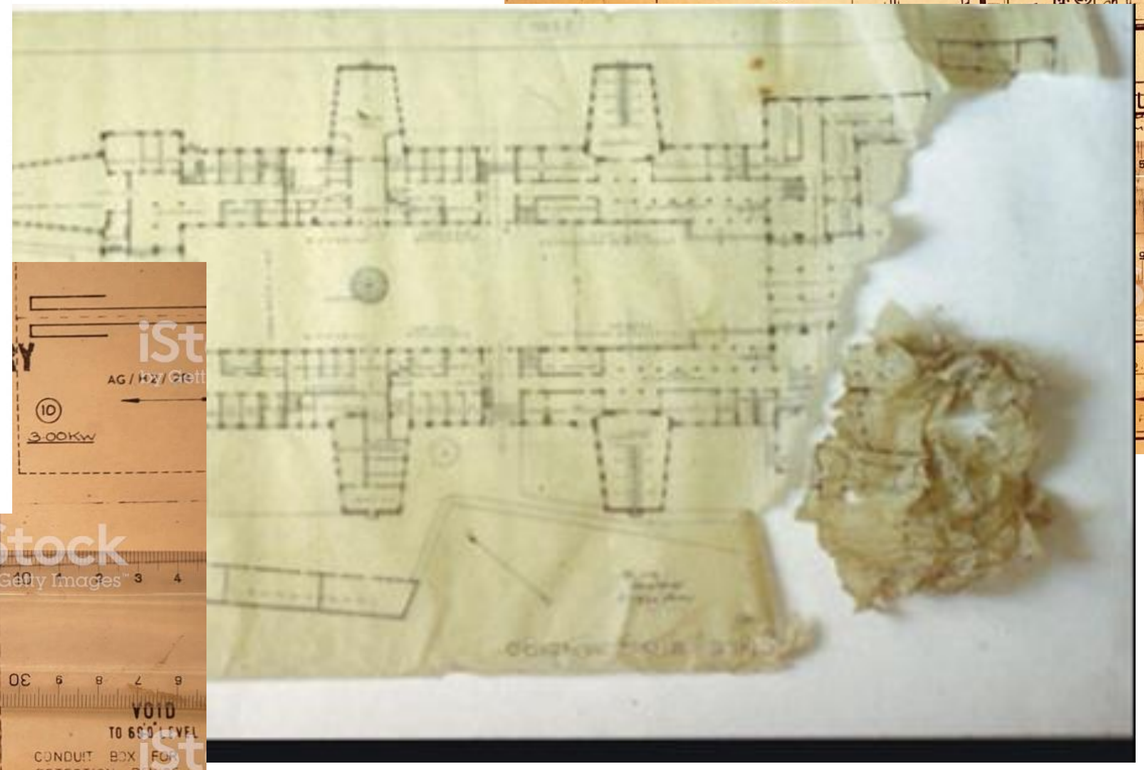


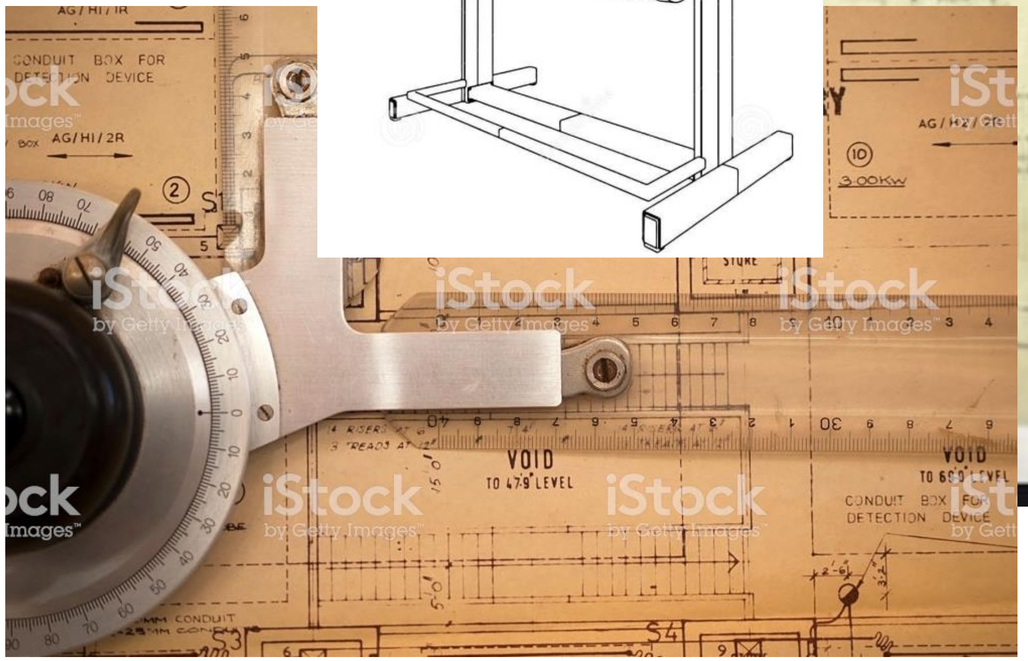


The Process

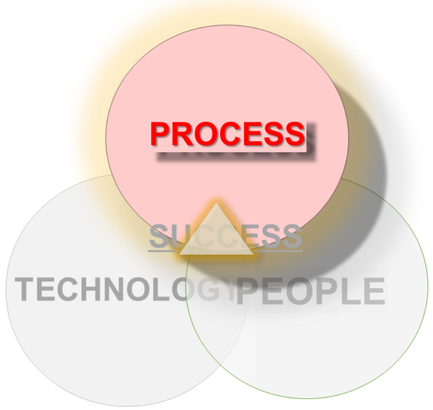








[Drafting Boards and Drafting Tools]

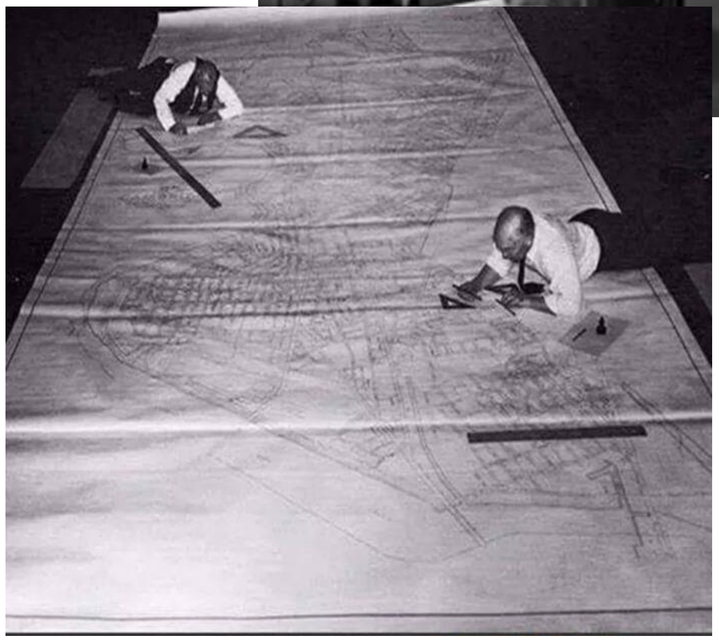


The Process

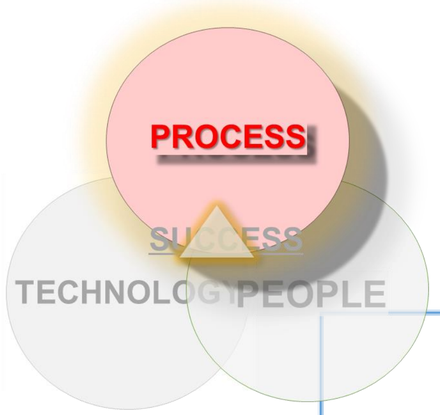






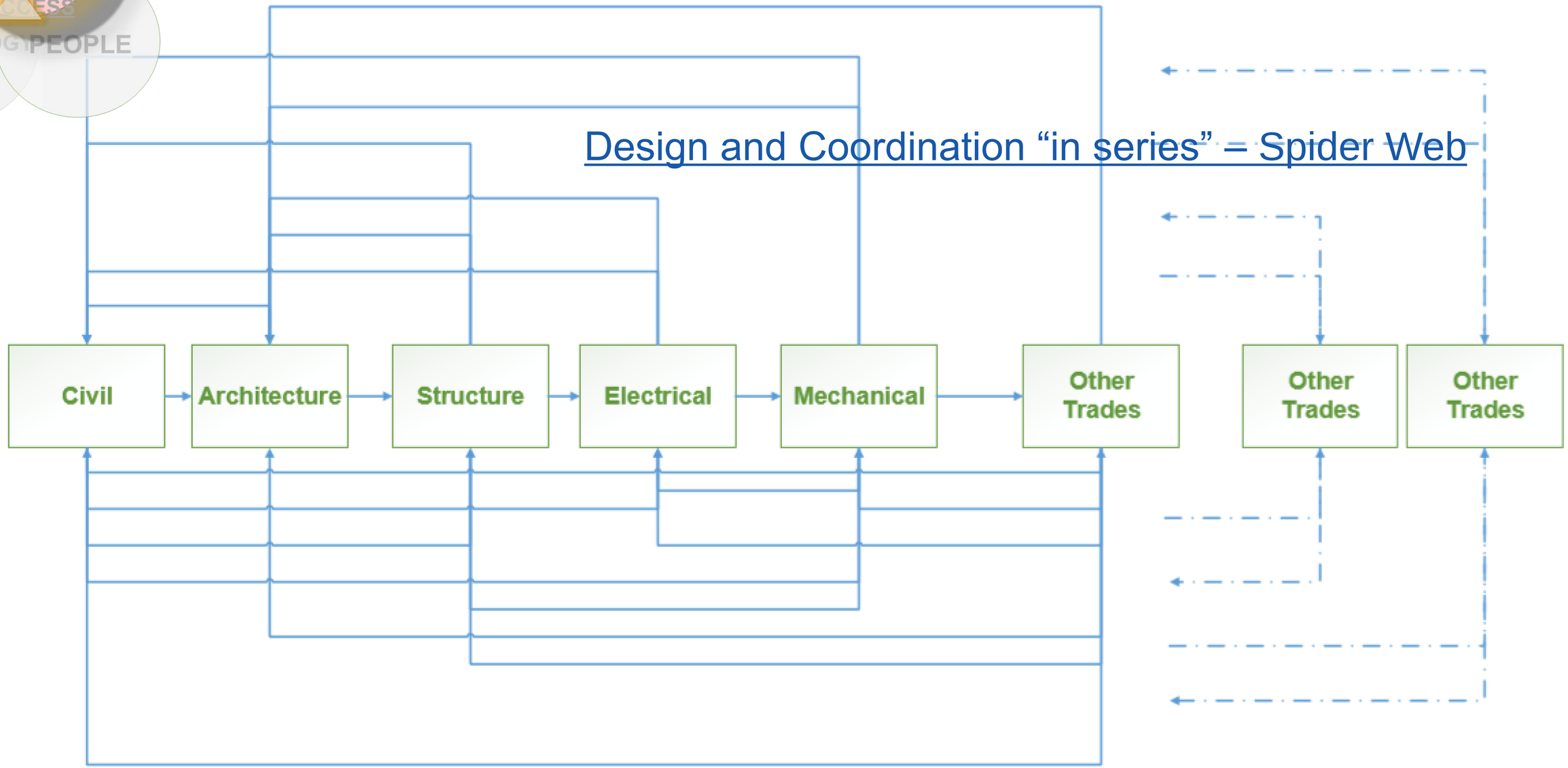


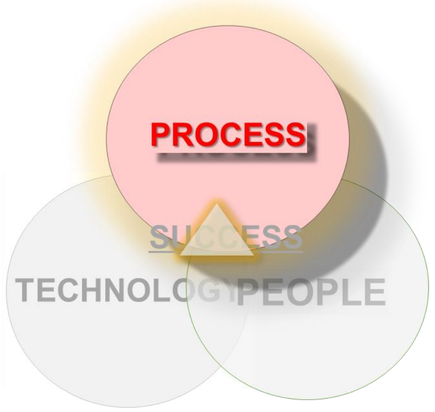
[Drafting Boards and Drafting Tools]



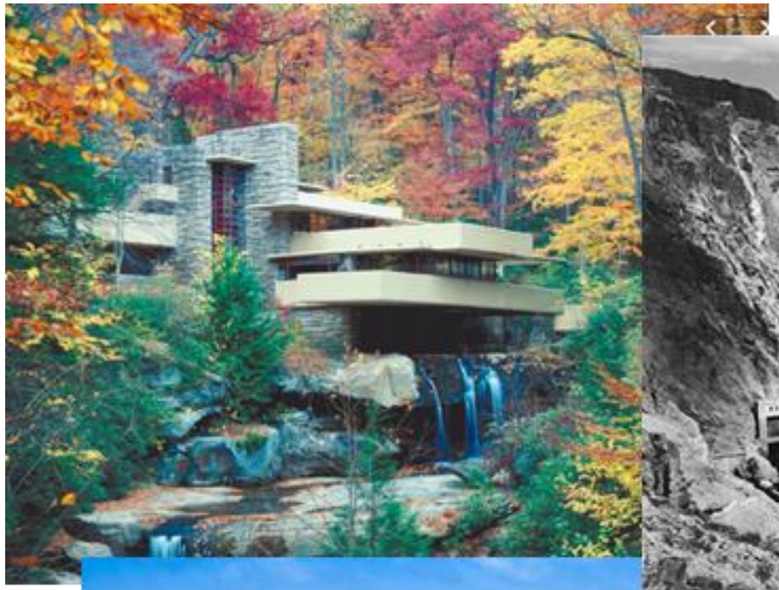
The Process

Design and Coordination “in series” = Spider Web





The Process



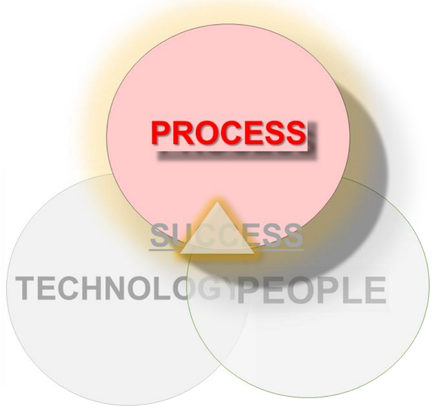




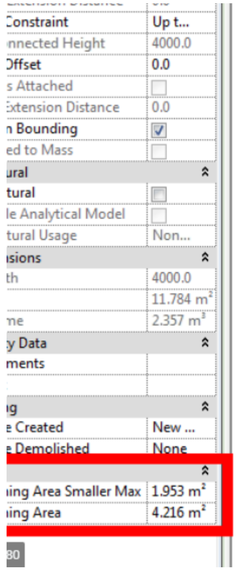


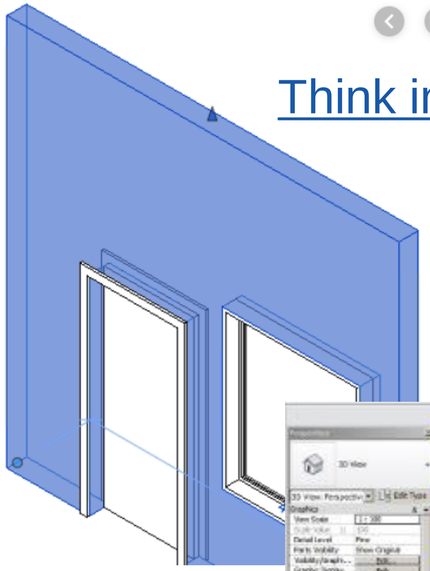


[Engineering and Architecture wonders of the world]



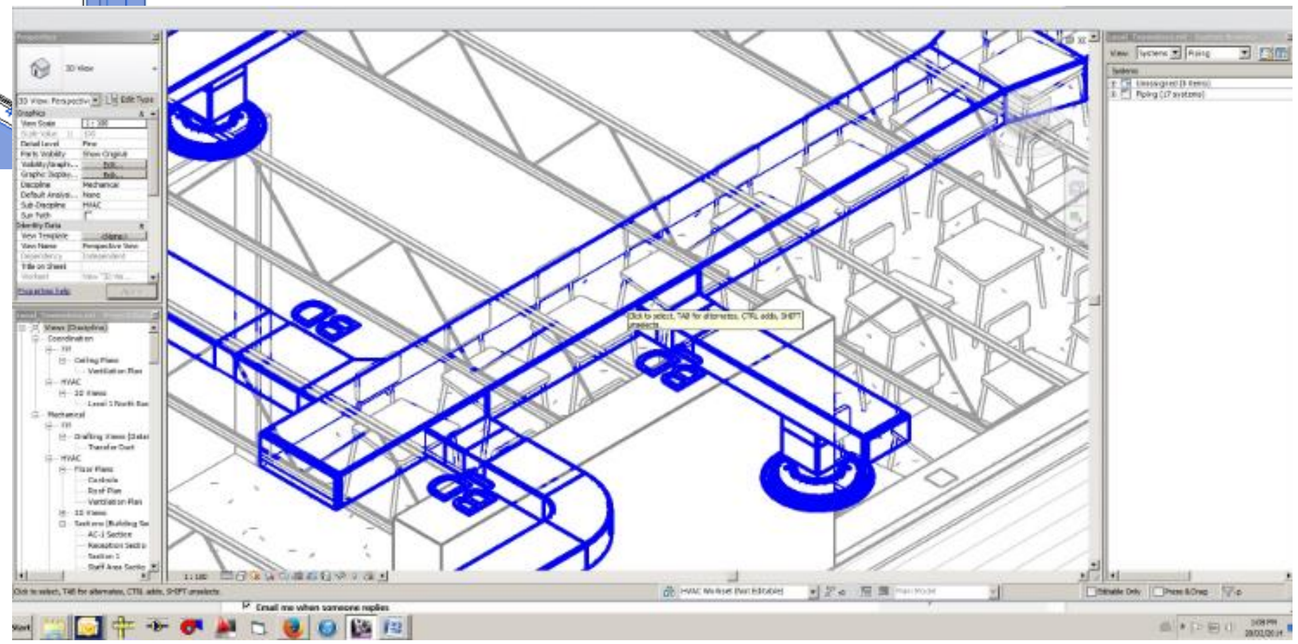
The Process



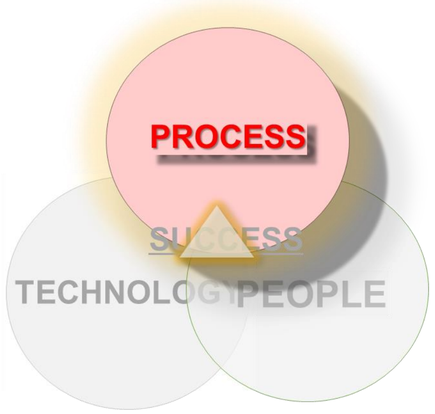


Think in 3D, Communicate in 3D and Resolve issues in 3D.

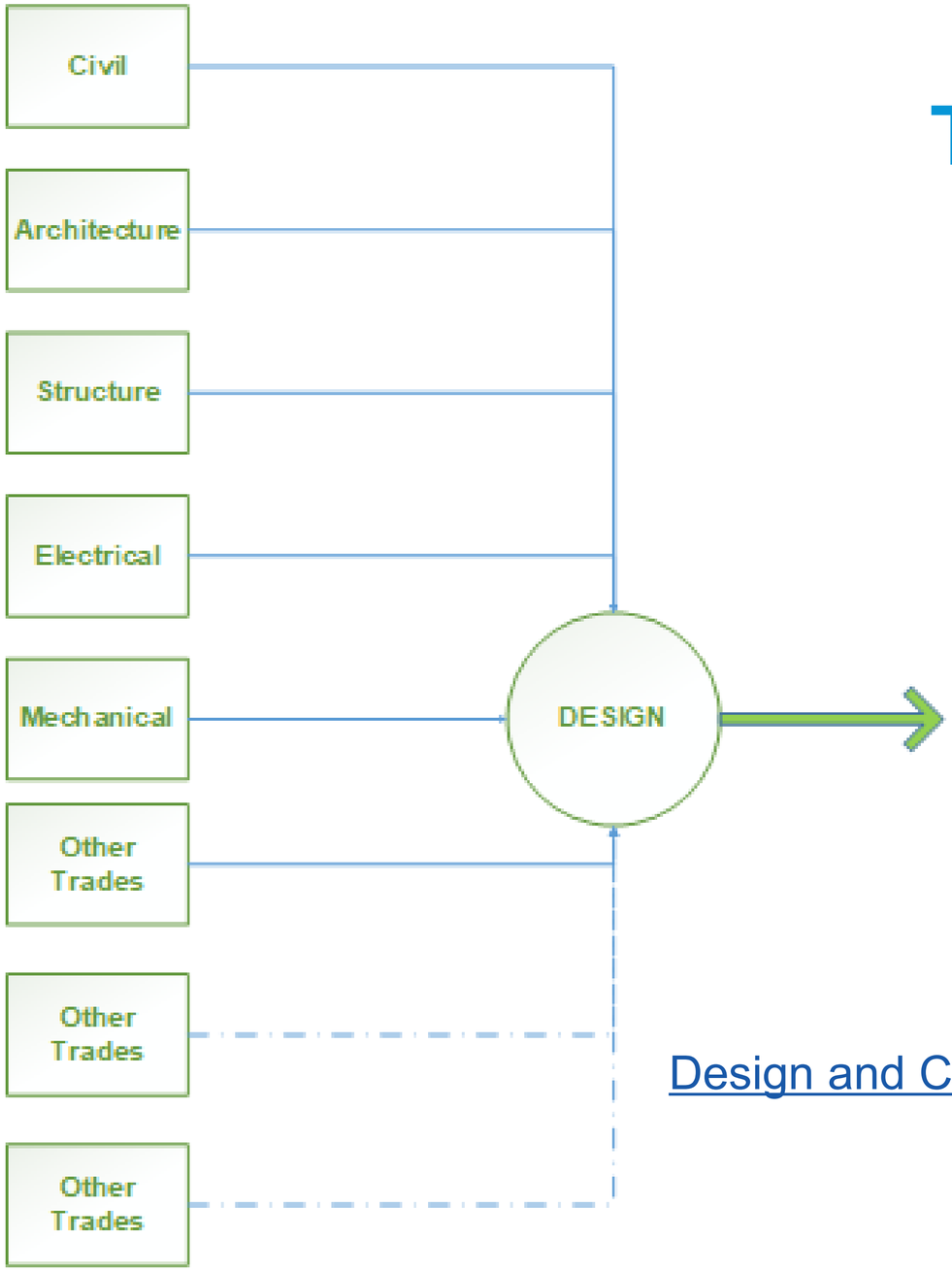
Rely on BIM Objects for Communication



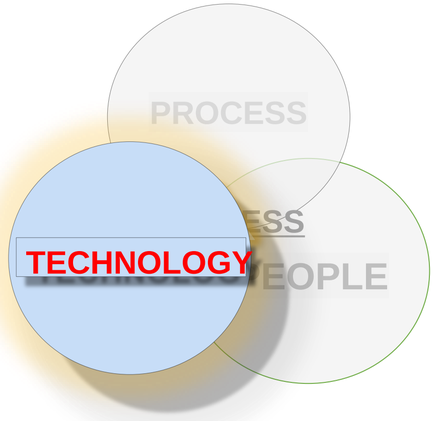
BIM Kicked in!



The Process



Design and Coordination “in parallel”



The Technology

Cloud Computing

AI

Augmented Reality

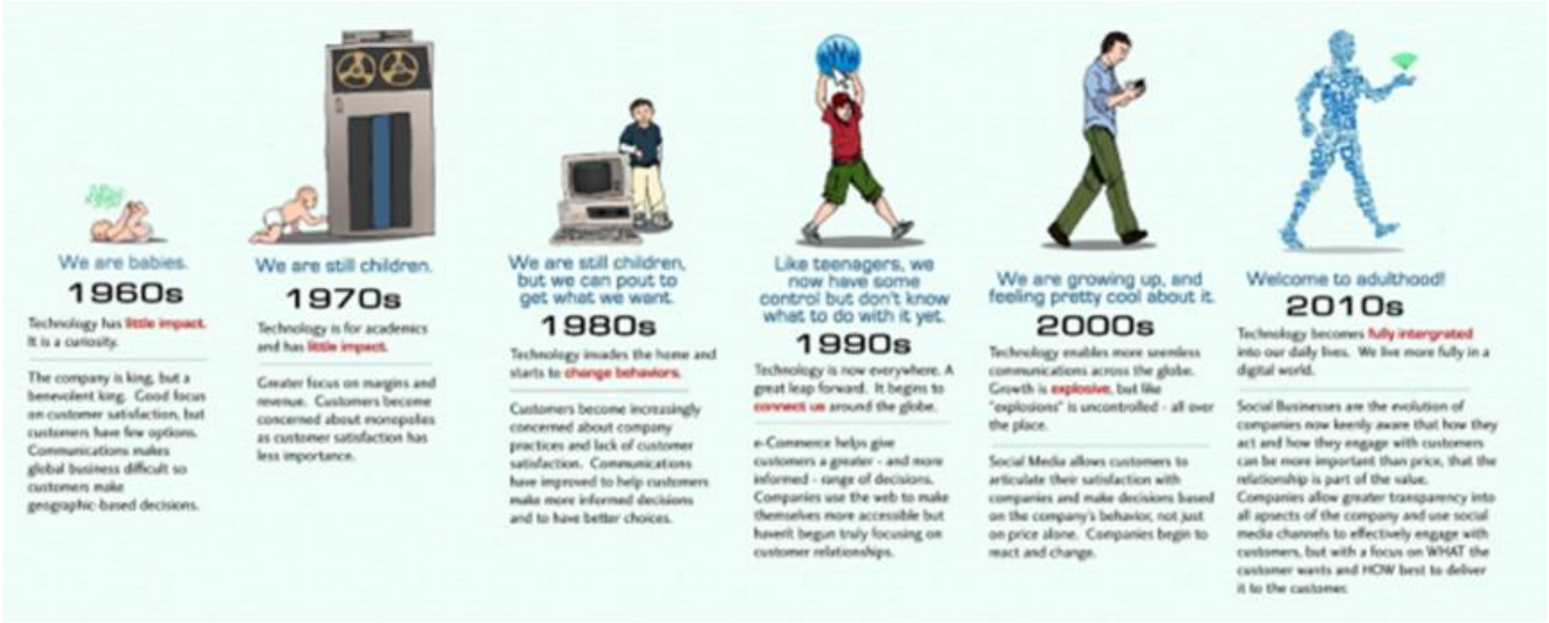
Mobile Devices

Machine Learning

Powerful Processors

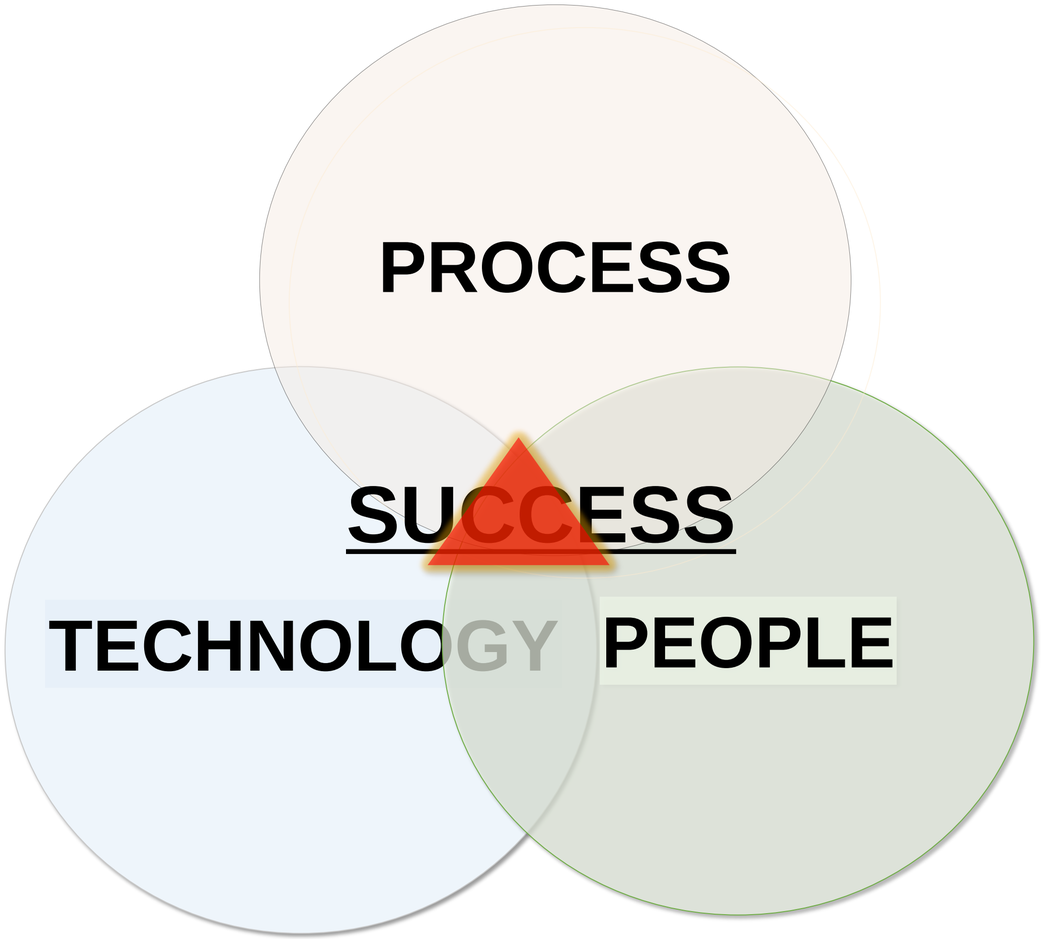
Drones

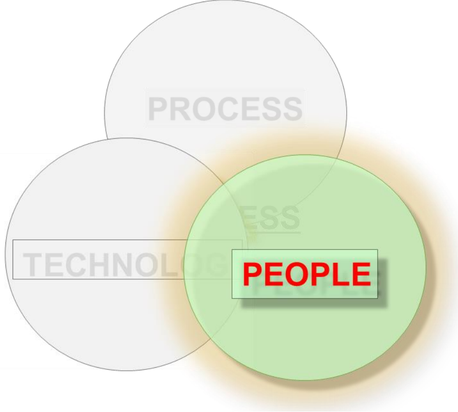
Virtual Reality



1957 — Pronto, first commercial computer-aided machining (CAM) software
1963 — Sketchpad, CAD with graphical user interface
1975 — Building Description System (BDS)
1977 — Graphical Language for Interactive Design (GLIDE)
1982–2D CAD
1984 — Radar CH
1985 — Vectorworks
1986 — Really Universal Computer-Aided Production System (RUCAPS)
1987 — ArchiCAD
1988 — Pro/ENGINEER
1992 — Building Information Model as official term
1993 — Building Design Advisor
1994 — miniCAD
1995 — International Foundation Class (IFC) file format
1997 — ArchiCAD's Teamwork
1999 — Onuma
2000 — Revit
2001 — NavisWorks
2002 — Autodesk buys Revit
2003 — Generative Components
2004 — Revit 6 update
2006 — Digital Project
2007 — Autodesk buys NavisWorks
2008 — Parametricist Manifesto
2012 — FormIt
….

The Trilogy of Success





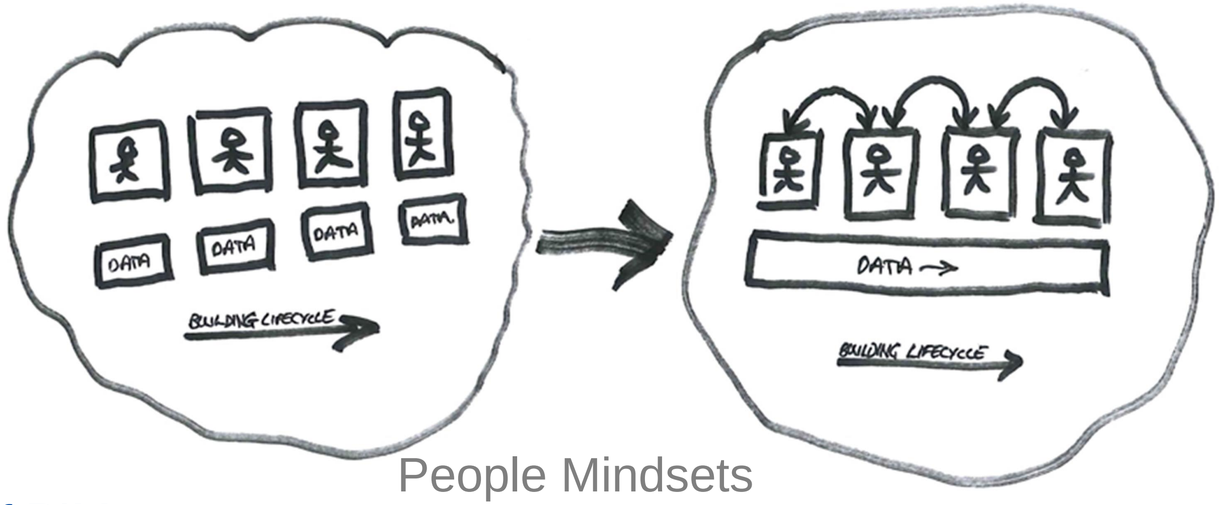
The People



Management Mindsets

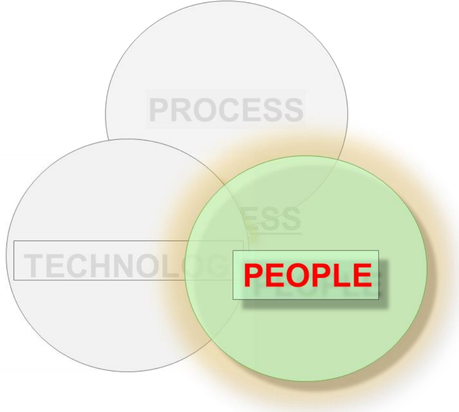


People Silos



People Mindsets

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



The People

“26% of rework is attributed to poor communication ” BIM Hub

Written procedures for the BIM in your office

How much BIM is involved in your project



In BIM, there is no place for Data and Information Silos

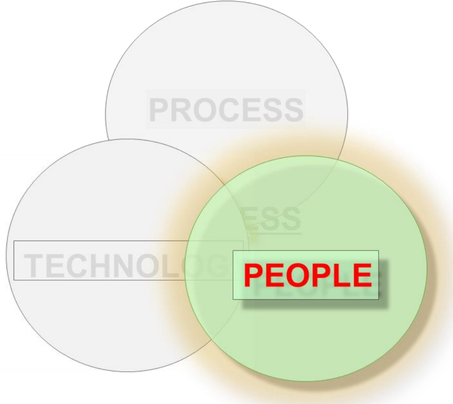
How to share files

How to communicate with other team members

Data Silos

Design Changes? Decisions? Procedures? New Comers?

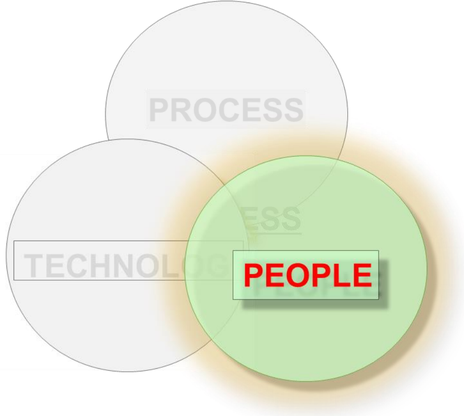
Does everyone on your team know what is happening in the Project?



The People



Environment Silos



Switching to Open Office Plan

(Entrepreneur)



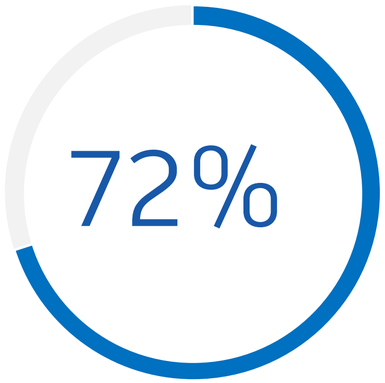
Face-to-Face

Before the switch to the open office plan, employees had been meeting face to face for nearly 5.8 hours per person over three weeks



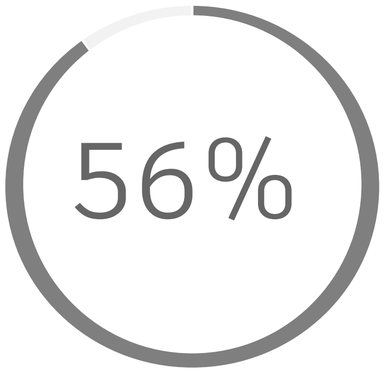
Face-to-Face

That number went down to 1.7 hours after the redesign,



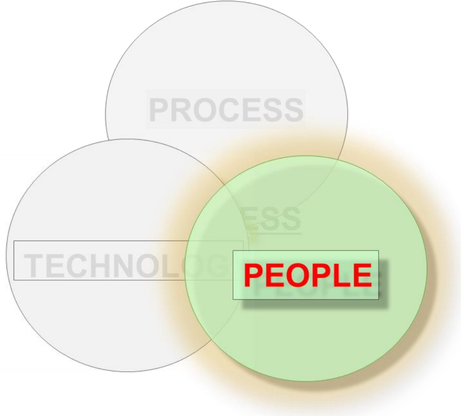
Less Interaction

participants spending 72 per cent less time interacting in person in the open space



More Emails

with employees sending 56 per cent more emails to other participants in the study.
IM>67% - #words >75%



Facts & Numbers

55%

REWORK

3-4%

ADDED Costs

$15Billions/yr

Rework Cost

Lack of Communication



What do we learn from that?

- 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 starting points with a potential to grow=> THIS IS WHEN BIM BEGINS

Enough said! What should be done?



What is the Solution?

Encourage ➤ Engage ➤ Educate



What is the Solution?



Encourage communication!!

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

- Visual communication
- Brainstorming rooms
- Encourage asking questions : Measure twice and Cut once!

- Make BIM Transparent again!

Encourage



What is the Solution?



Engage!!

"If everyone is moving forward together, then success takes care of itself." -Henry Ford.

- Make a showcase out of little things
- Tips and Tricks Sessions
- Treat all teams EQUALLY!

  - Make BIM a meeting place again.

Engage



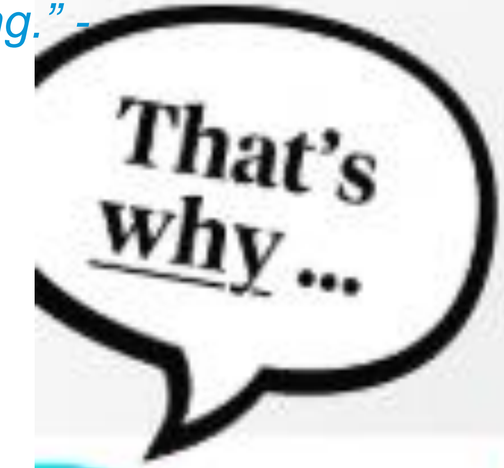
What is the Solution?

Educate!!

“The only real mistake is the one from which we learn nothing.” - Henry Ford

- Encourage meetings using federated models.
- Delegate simple tasks
- Explain to your team how things are done.
- Expose your team to novelties in BIM world

  - There is no place for mystery in BIM



Educate



Communication

Trust

Transparency

Excellence

Thank You

Q&A