PROJECT MANAGEMENT IN OPENBIM

KLO 2 | Agile and scrum as an alternative for an openBIM project management

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The mentor

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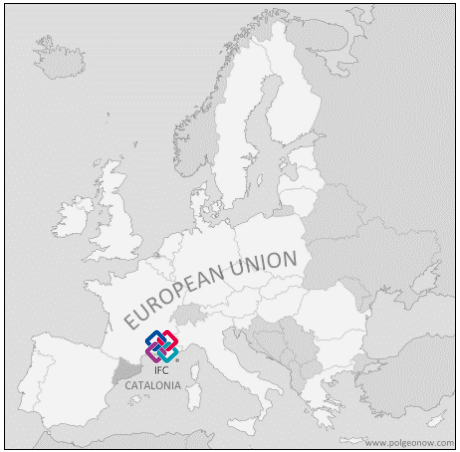

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Board member

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Building The Future Comission
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ITeC

Key learning objectives #02

• Understand how concurrent engineering processes can help to have a suitable response to changes in BIM design stages.

• Learn the basics of Agile Methodology

• Learn in detail what is Scrum and Kanban, as agile approaches: definitions, team members, ceremonies, artifacts, hierarchies, board examples and metrics.

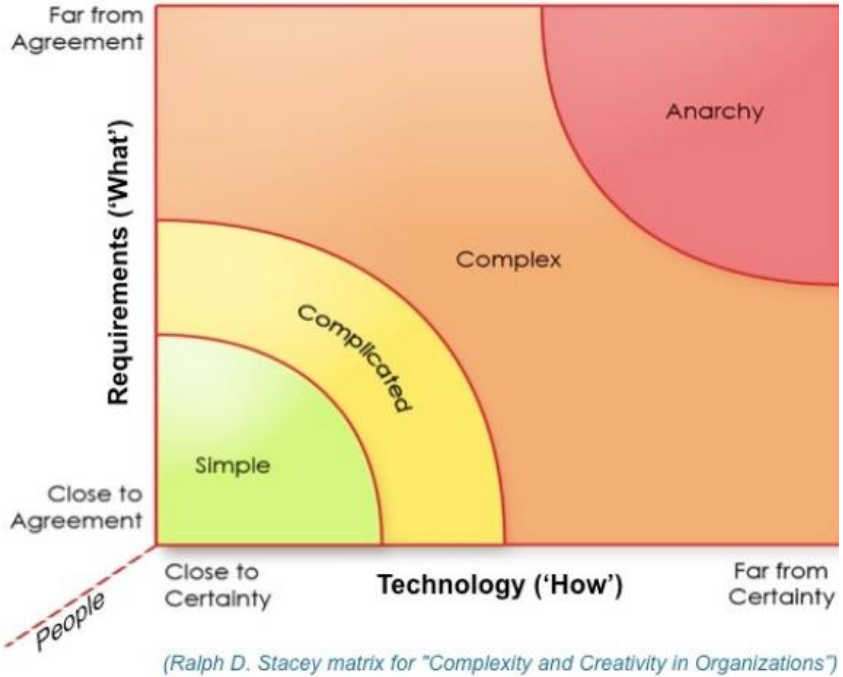
Agile introduction

BILT ACADEMY SUMMIT 2019

MOTHERWELL

8 OCT 2019

Requirements vs Solutions

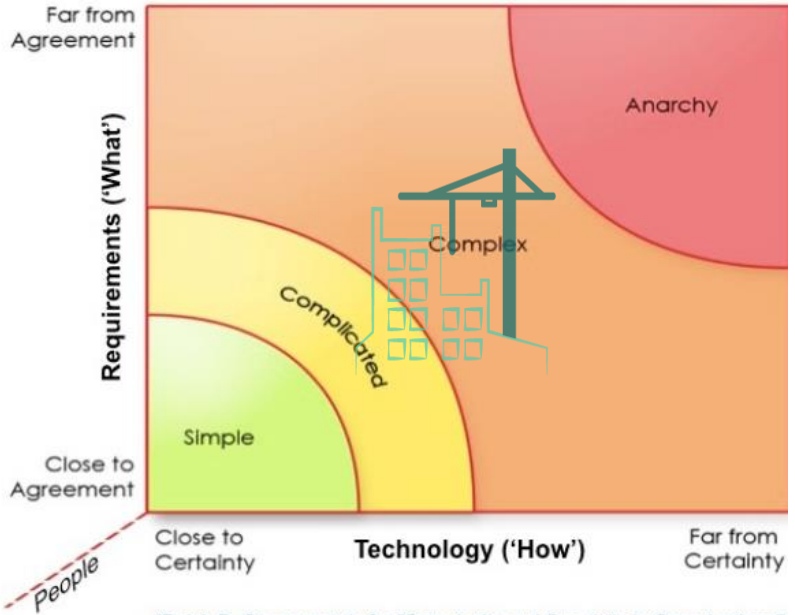


(Ralph D. Stacey matrix for "Complexity and Creativity in Organizations")

Where is AECO industry?

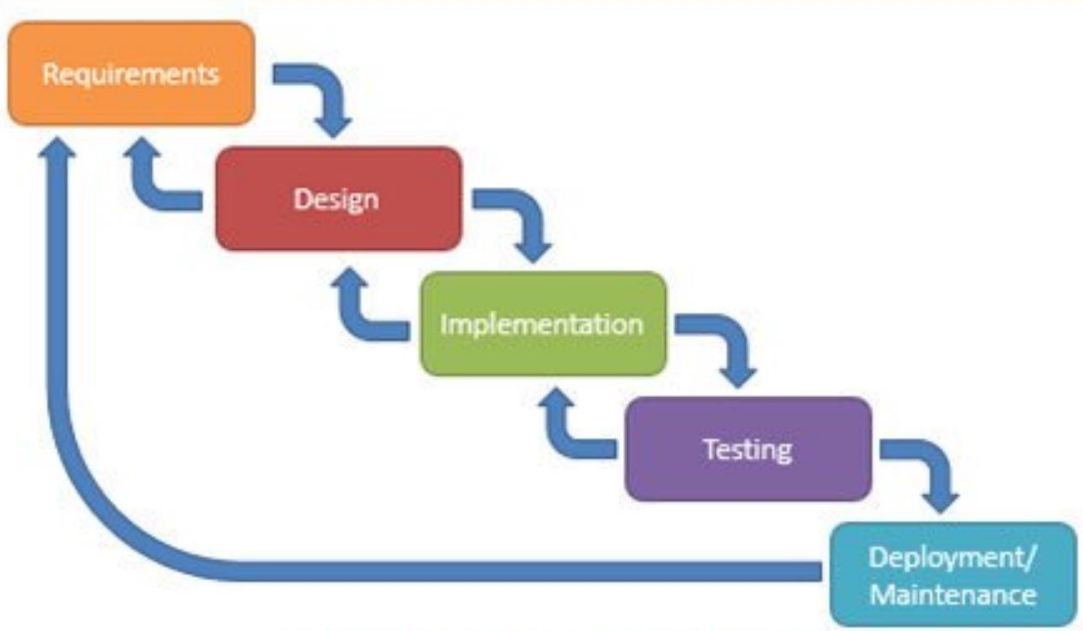
Incertitude

AECO stakeholders usually work under a high level of **uncertainties**



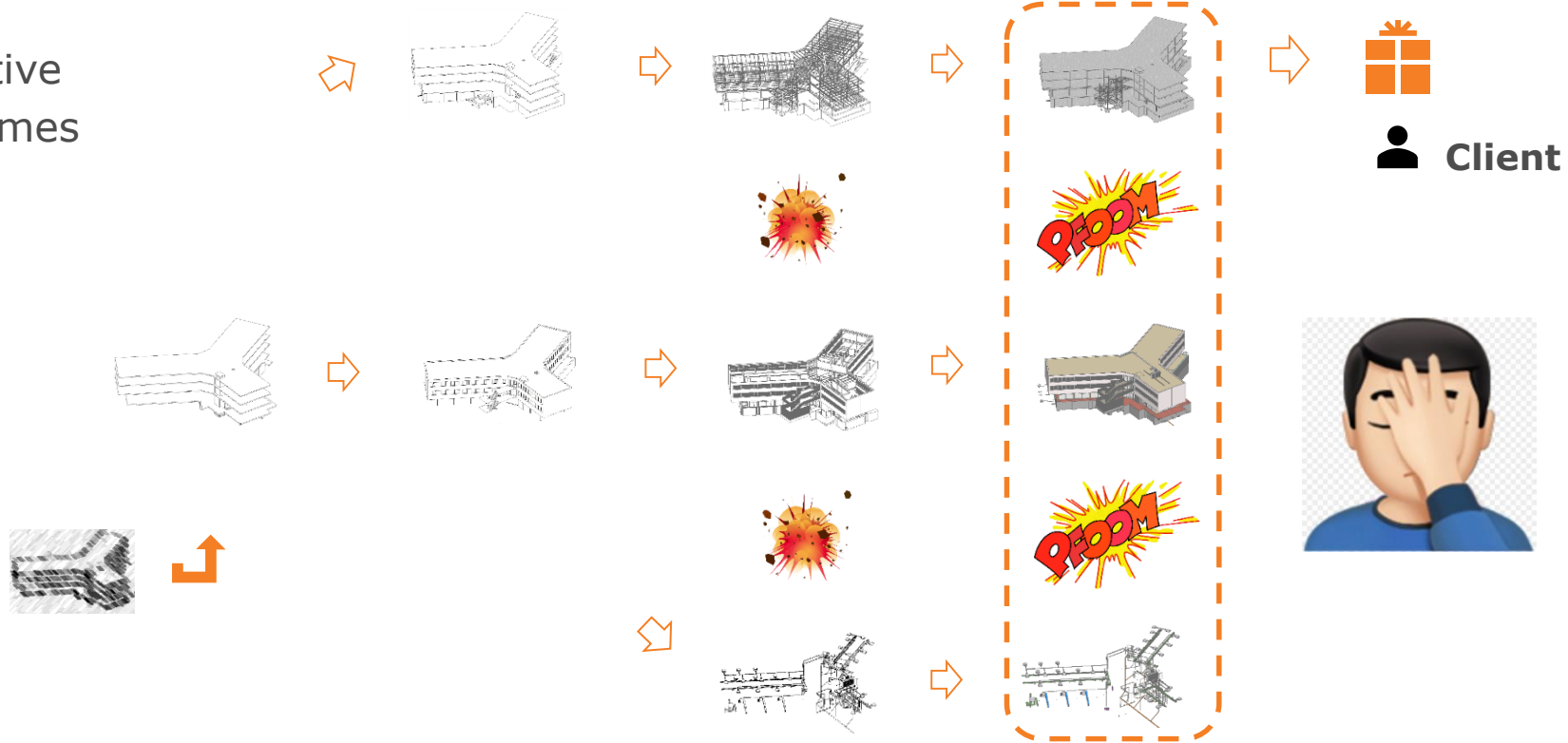
(Ralph D. Stacey matrix for "Complexity and Creativity in Organizations")

Traditional waterfall method



AECO case

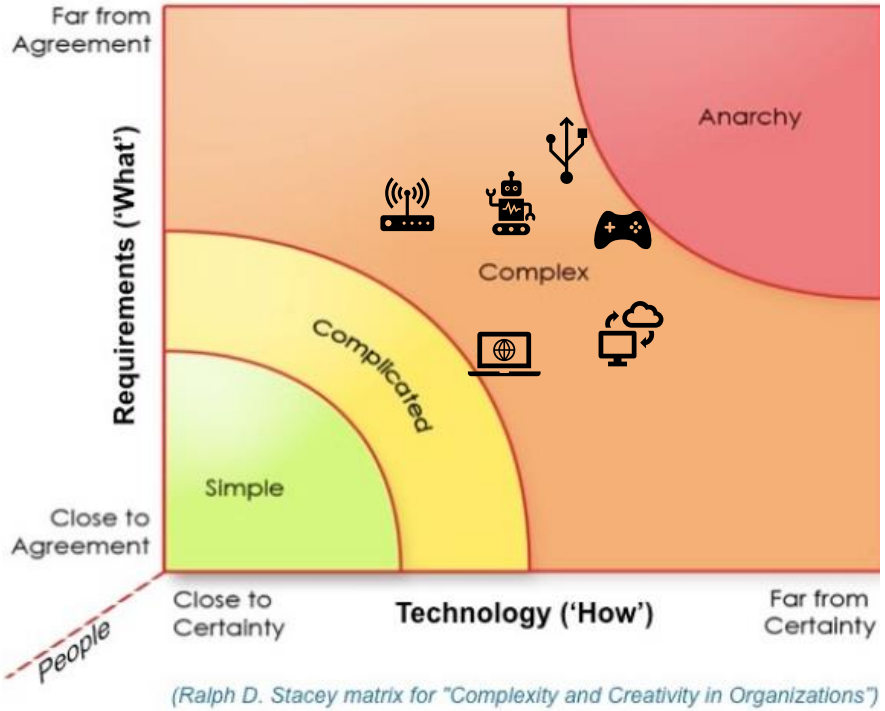
Negative outcomes



Is it possible to change that?

Other industries

Also high uncertainty



(Ralph D. Stacey matrix for "Complexity and Creativity in Organizations")

Agile methodologies challenges

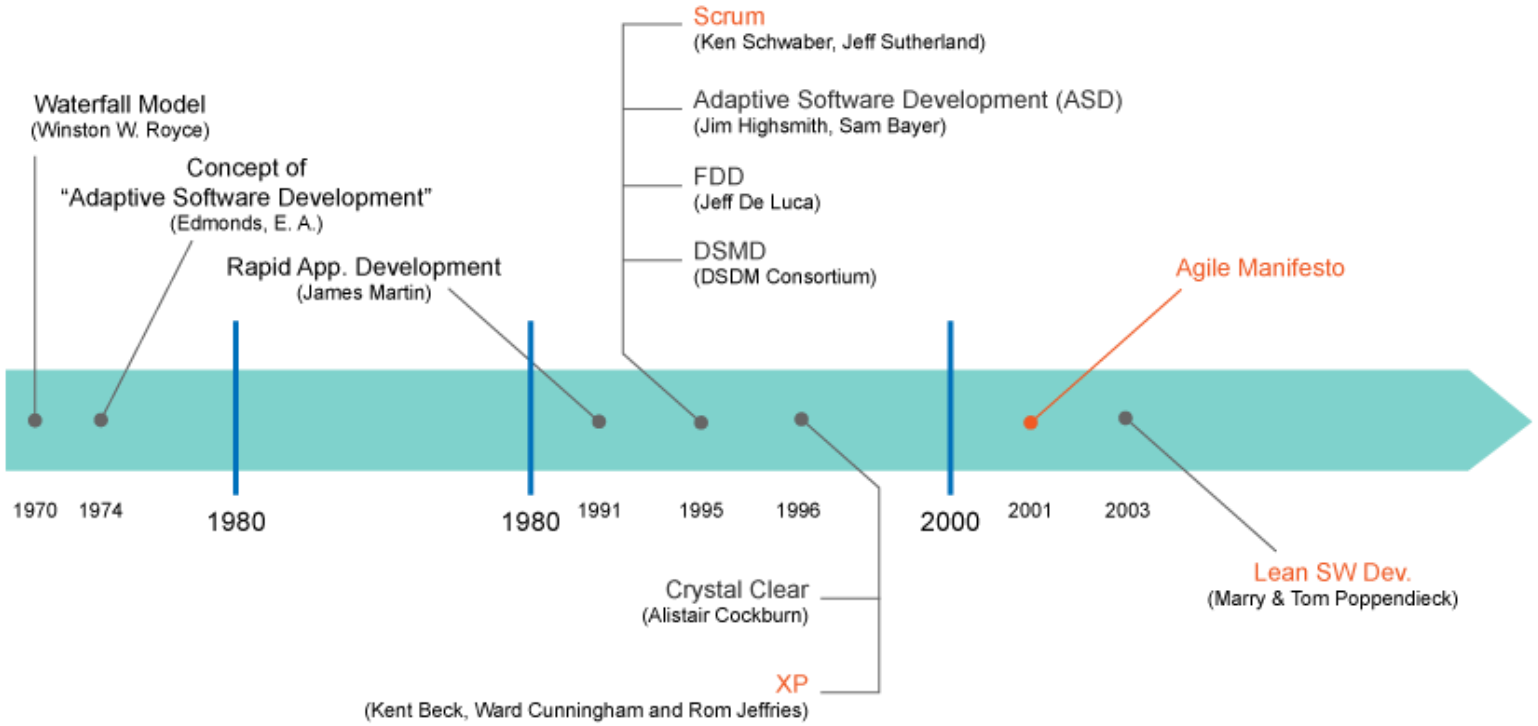
Client needs

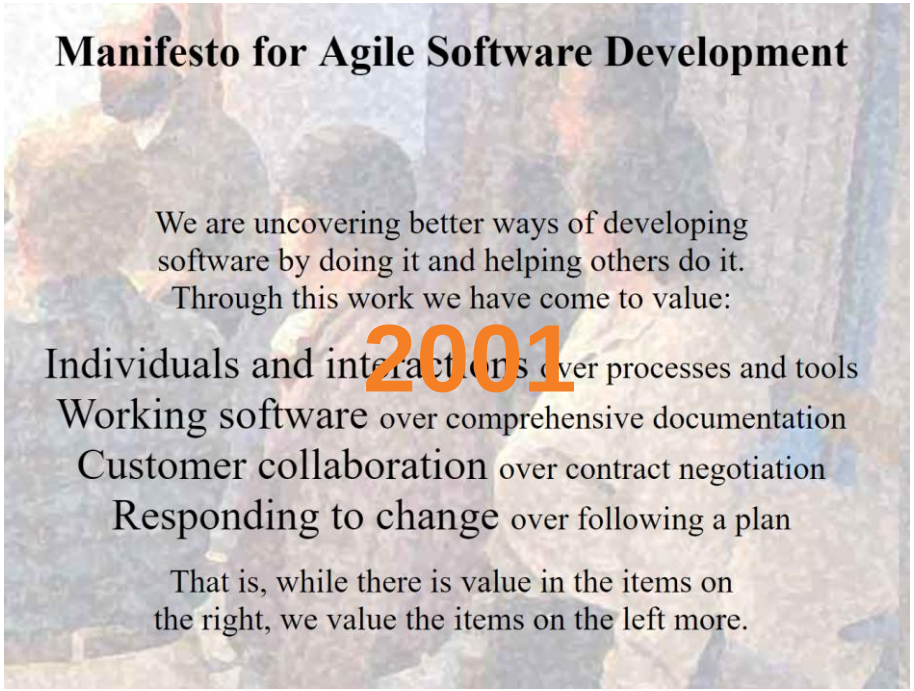
- Short term results
- Change requirements
- Expectation compliance checking before work is finished

Provider needs

- Manage change requirements without cost increase
- Task scope adjustment
- Solve problems that hinder the progress of work teams
- Use non-heavy management process, even in complex projects
- Increase team productivity and motivation

History of Agile



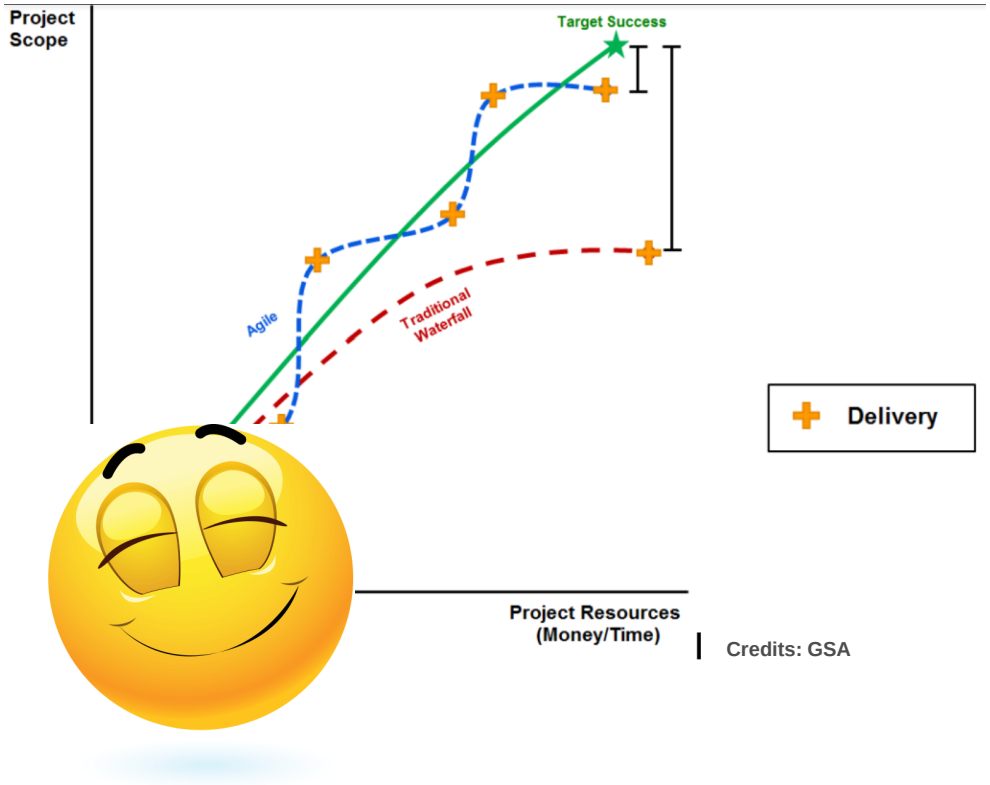

Manifesto for Agile Software Development
We are uncovering better ways of developing
software by doing it and helping others do it.
Through this work we have come to value:
2001
Individuals and interactions over processes and tools
Working software over comprehensive documentation
Customer collaboration over contract negotiation
Responding to change over following a plan
That is, while there is value in the items on
the right, we value the items on the left more.

Client oriented

In Agile, the Client interacts with a product delivery and provide feedback to guide the next project phase

- Client participation
- Transparency
- Regular guidance
- Product results

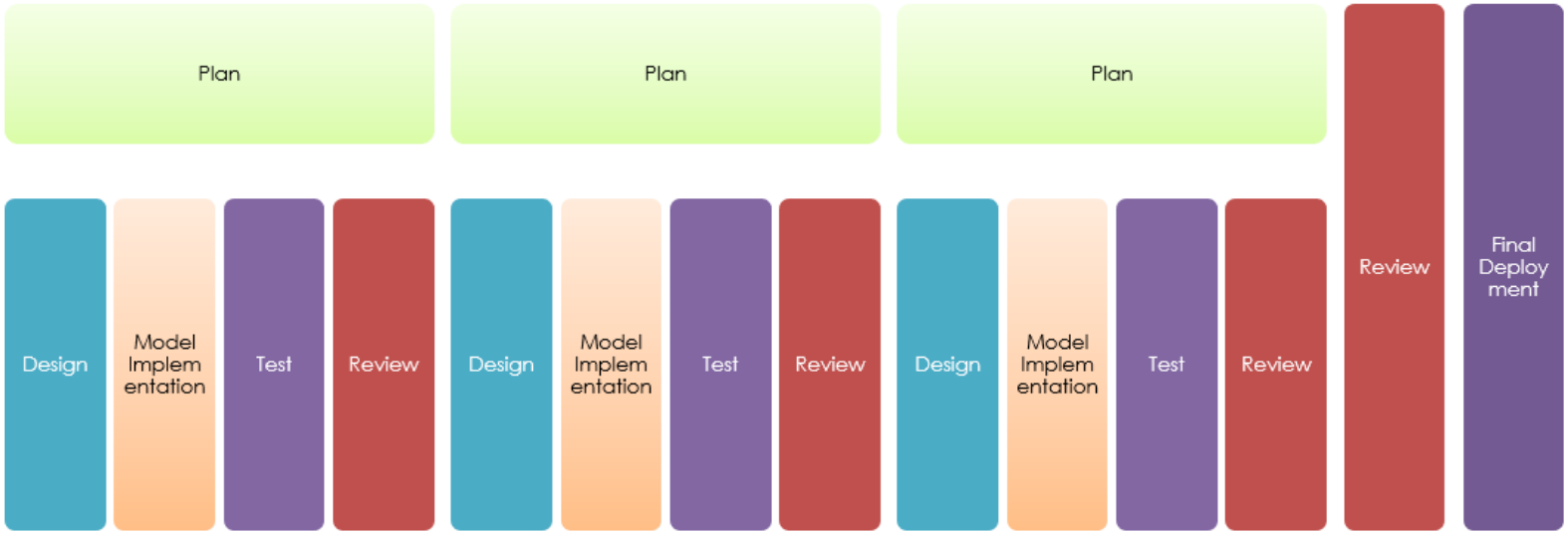
- Frequent deliveries:
  2-4 weeks
- Client feedback
- **Closer to client's expectations**



Conclusions

	Agile	Traditional Project Management
Emphasis is on	People	Processes
Documentation	Minimal—only as required	Comprehensive
Process style	Iterative	Linear
Upfront planning	Low	High
Prioritization of Requirements	Based on business value and regularly updated	Fixed in the Project Plan
Quality assurance	Customer centric	Process centric
Organization	Self-organized	Managed
Management style	Decentralized	Centralized
Change	Updates to Productized Product Backlog	Formal Change Management System
Leadership	Collaborative, Servant Leadership	Command and control
Performance measurement	Business value	Plan conformity
Return on Investment	Early/throughout project life	End of project life
Customer involvement	High throughout the project	Varies depending on the project lifecycle

Iterations in design stage

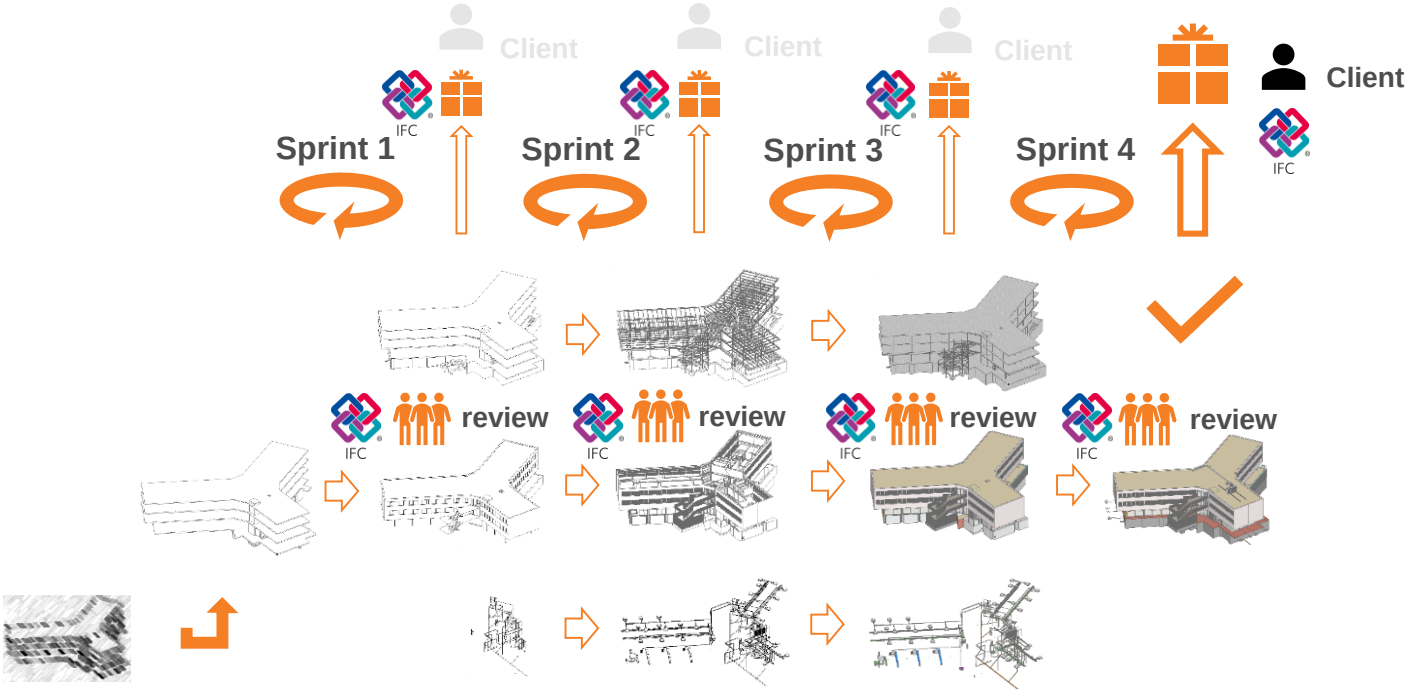


Agile

is suitable for collaborative practices,

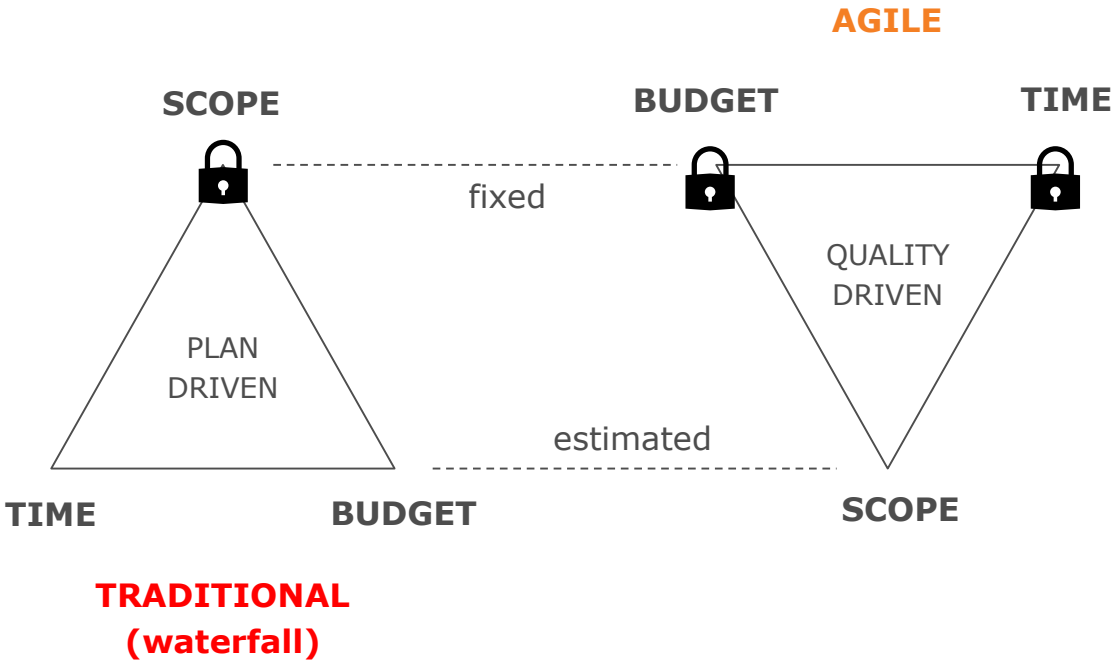
as

openBIM undertakes



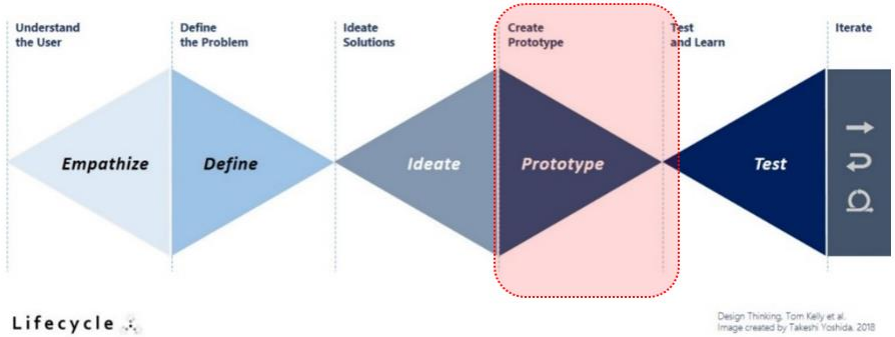
Budget, time and scope

Main beneficiaries

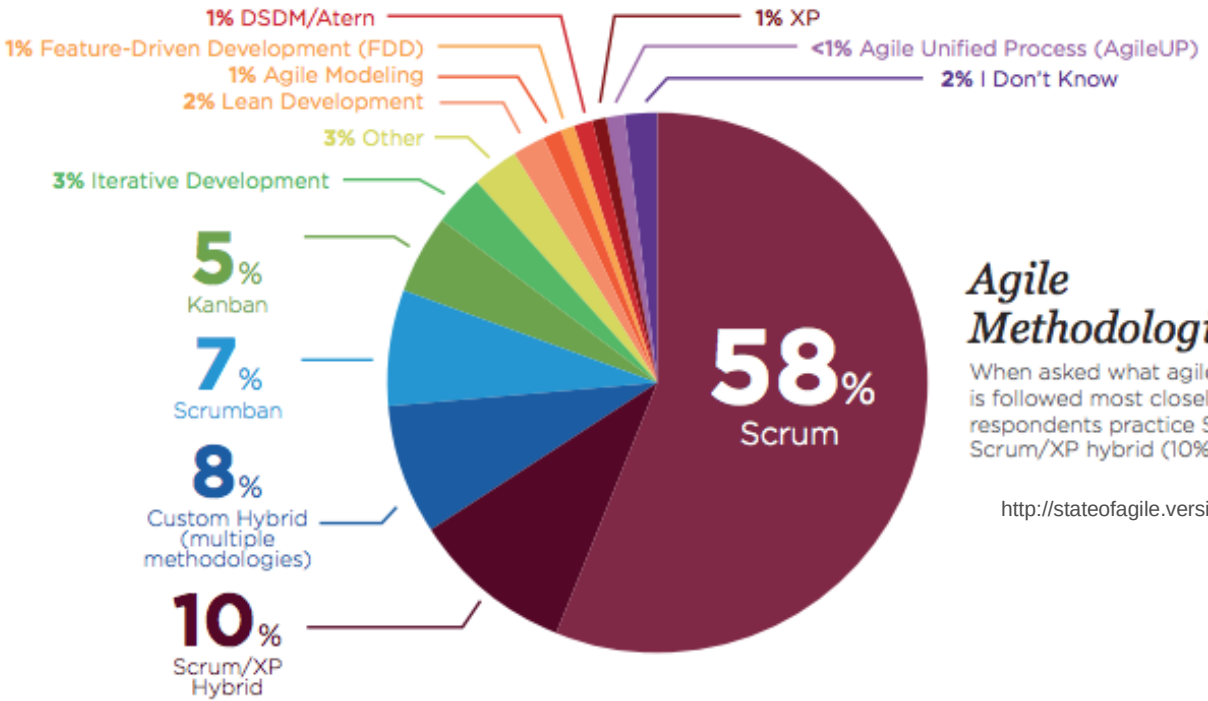


Scope optimization

1. More valuable objectives
2. Uncertainty removal
3. Objective scope specifications
4. Elimination of third parties constraints
5. Earlier useful deliverables **PROTOTYPES!**
6. Rapidly executable tasks

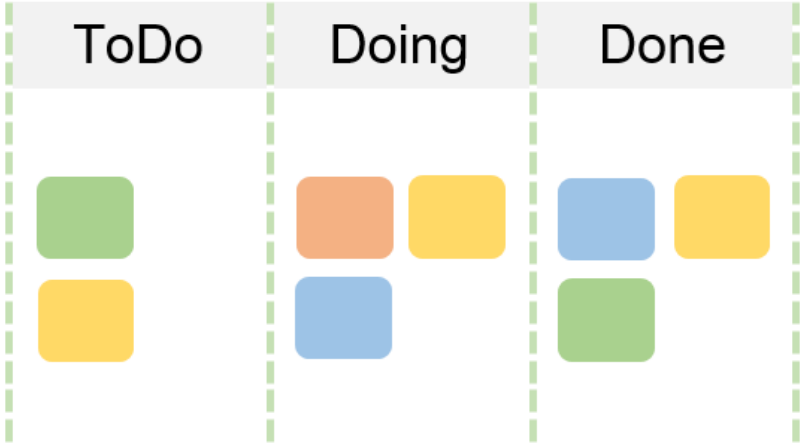


Agile methodologies

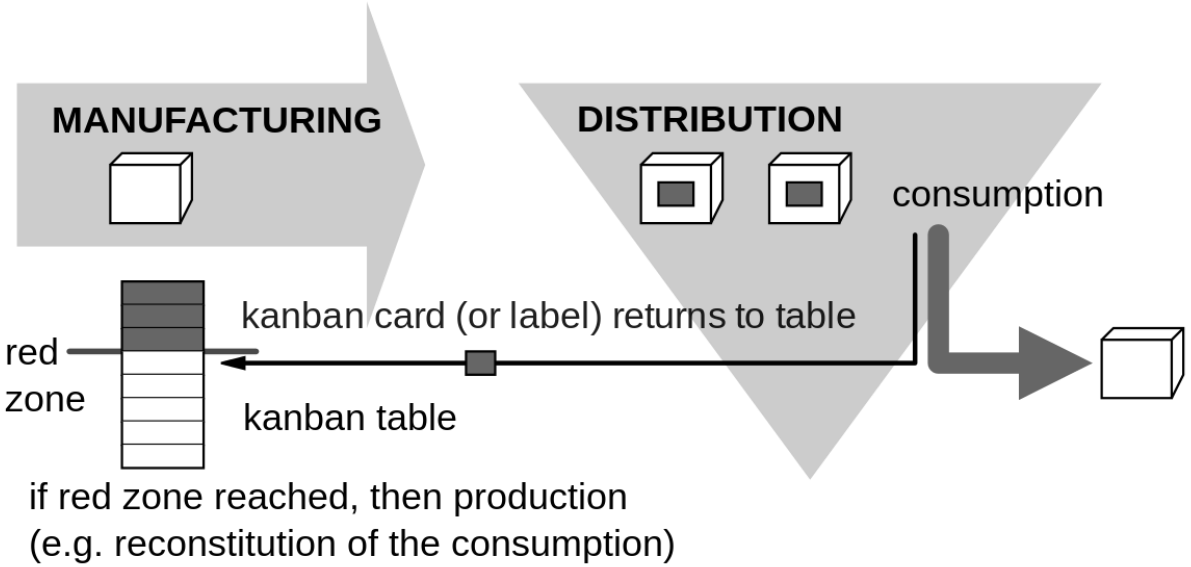


Kanban

- Kanban, a japanese word, literally meaning “signboard” or “billboard”
- Means of achieving JIT production
- Continuous supply system of components and their parts
- Enables workers to have
  - What they need
  - Where they need it, and
  - When they need it

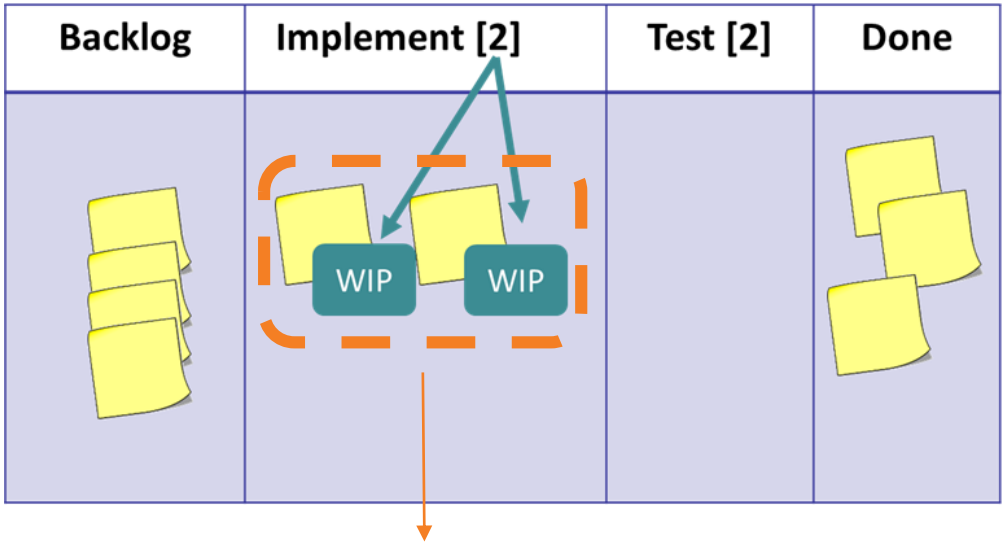


Kanban


MANUFACTURING
DISTRIBUTION
consumption
kanban card (or label) returns to table
red
zone
kanban table
if red zone reached, then production
(e.g. reconstitution of the consumption)

Kanban board

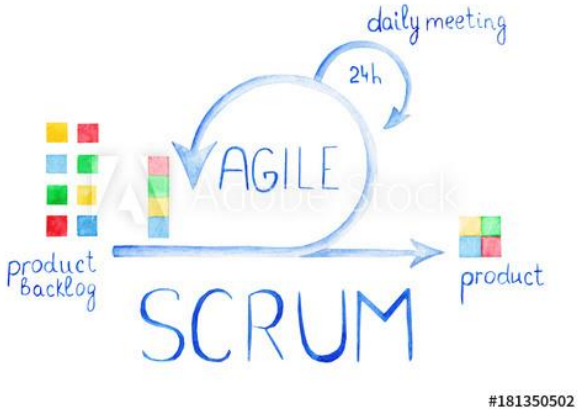
- Produce only what the system can assume.
- unproductive work



Scrum, in detail

Scrum

- Scrum divides projects according to **Requirements** (User Stories) and displays them in a workflow.
- Scrum teams are committed to generate deliverables at the end of different cycles, called **Sprints**.
- It is an appropriate method when it is necessary to prioritize the **value** with the client.



*"**Scrum** (n): A framework within which people can address complex adaptive problems, while productively and creatively delivering products of the highest possible value."*

Scrum team

- **CUSTOMER OR CUSTOMER REPRESENTATIVE** (Product Owner) Learn about the final product or service that you want to obtain and how it should be. Define scheduling and delivery schedule, remaining available for the rest of the team.

- **TEAM LEADER** (Scrum Master): He/She is the one who leads, organizes and gives support to the rest of the members.

- **IMPLEMENTATION TEAM**: it is formed by the rest of professionals with execution roles in the project, is multidisciplinary and is responsible as a team, not individually.

i.e. BIM Project Manager
or BIM Manager (if smaller projects)

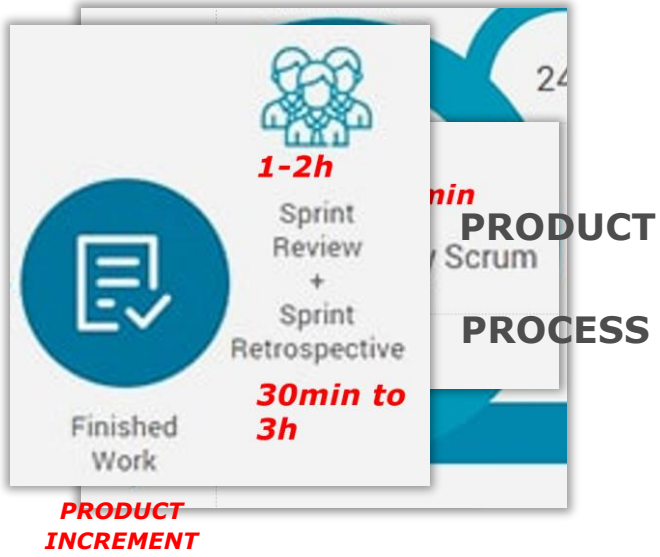
i.e. BIM Manager
or BIM Coordinator

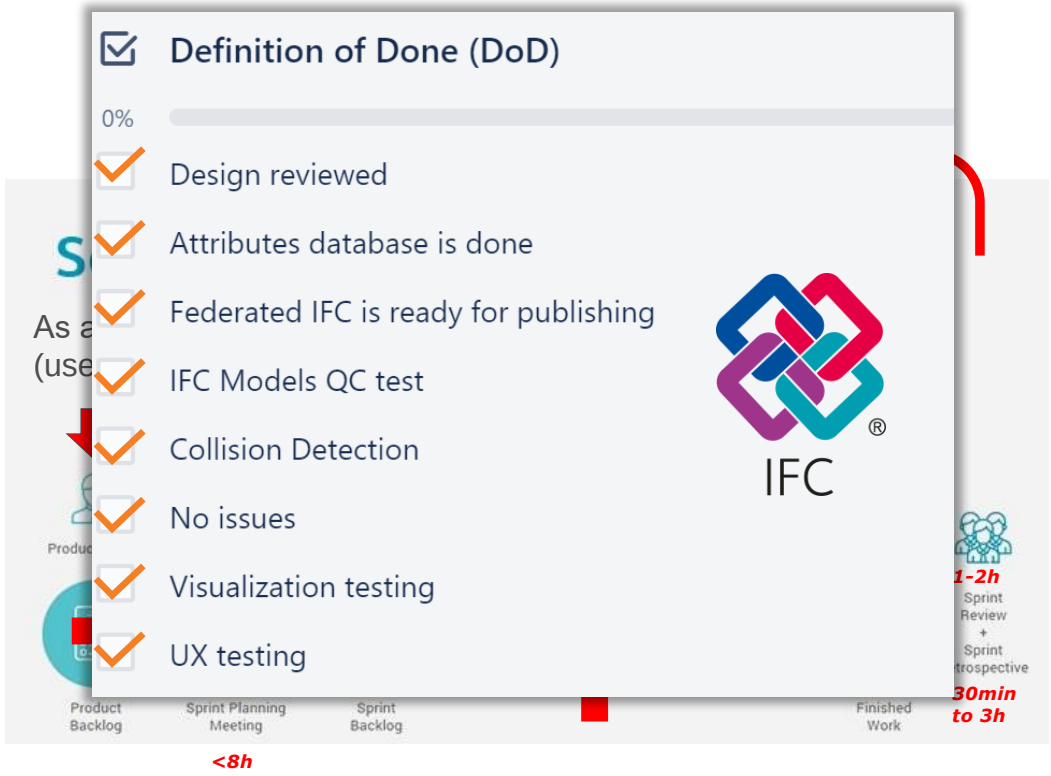
i.e. Integrated Design Project Team

Teams of 6-10 people

Scrum process

Artifacts and events



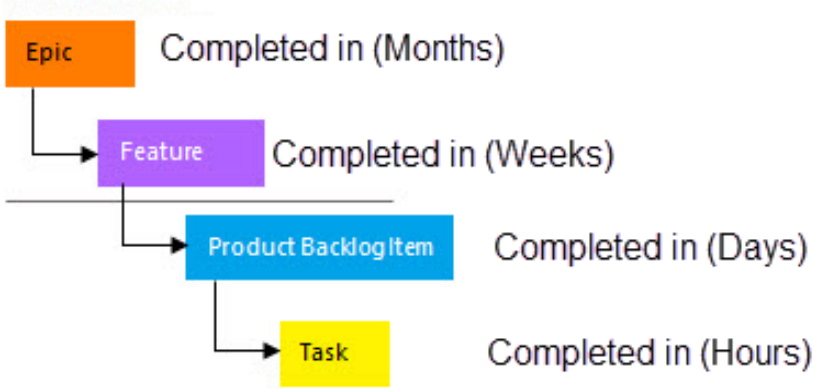


Scrum hierarchy

- **PROJECT PHASE**
- **MILESTONE OR DELIVERY**, intermittent, which occupies several cycles.
- **REQUIREMENT / OBJECTIVE** that is part of the process and incorporates some added value within a single cycle, and focused on the client.

As a **<type of user>, I want to **<perform some task>**, so that I can **<achieve some goal>****

- **TASK**: work units that comprise a requirement or objective. They can be estimated in a timely manner and are focused on the executor team.
- ... (SUB-TASK)



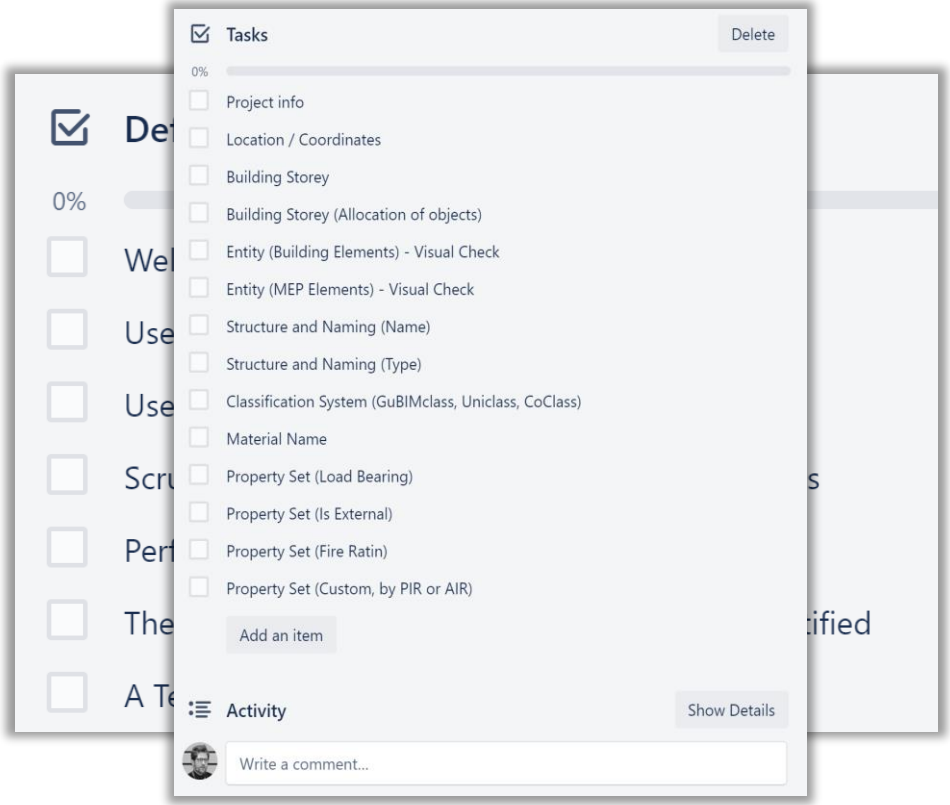
User story and task examples

“Audit and visualization of IFC terms”

As a
[BIM user]

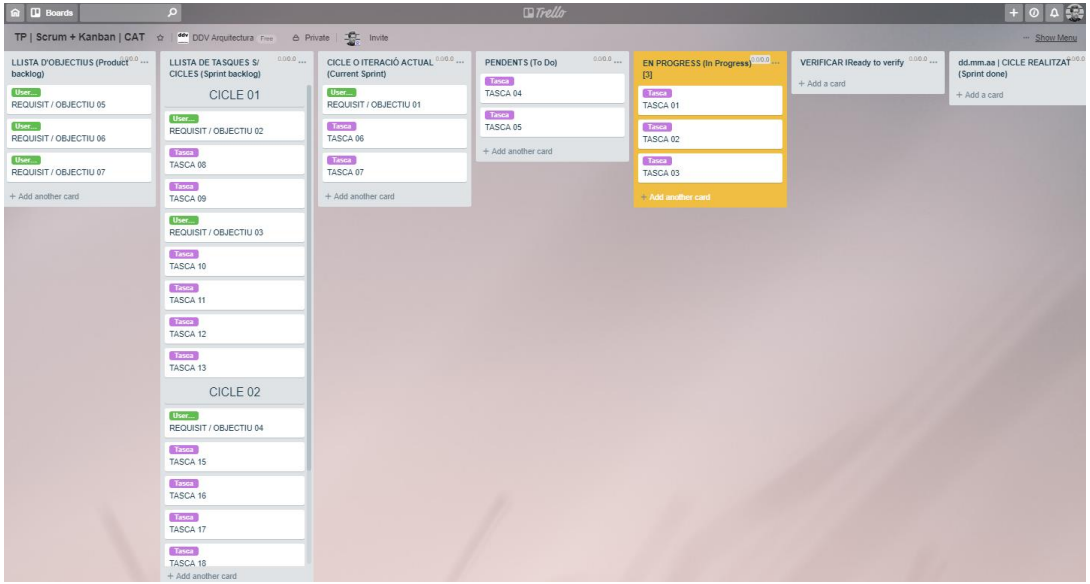
I want to
[perform quality control of IFC model contents including its visualization]

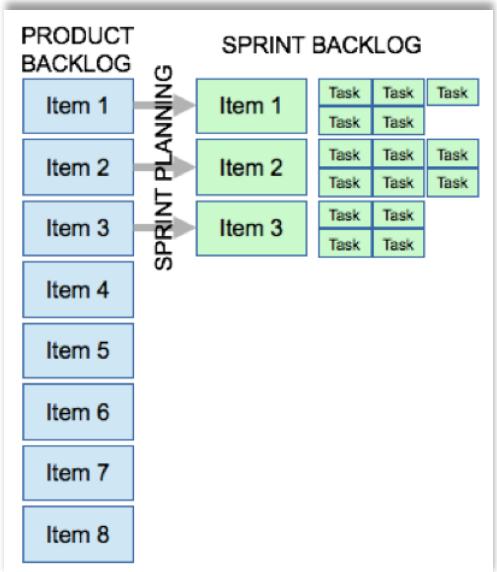
so that I can
[verify the suitability of this exchange format]”



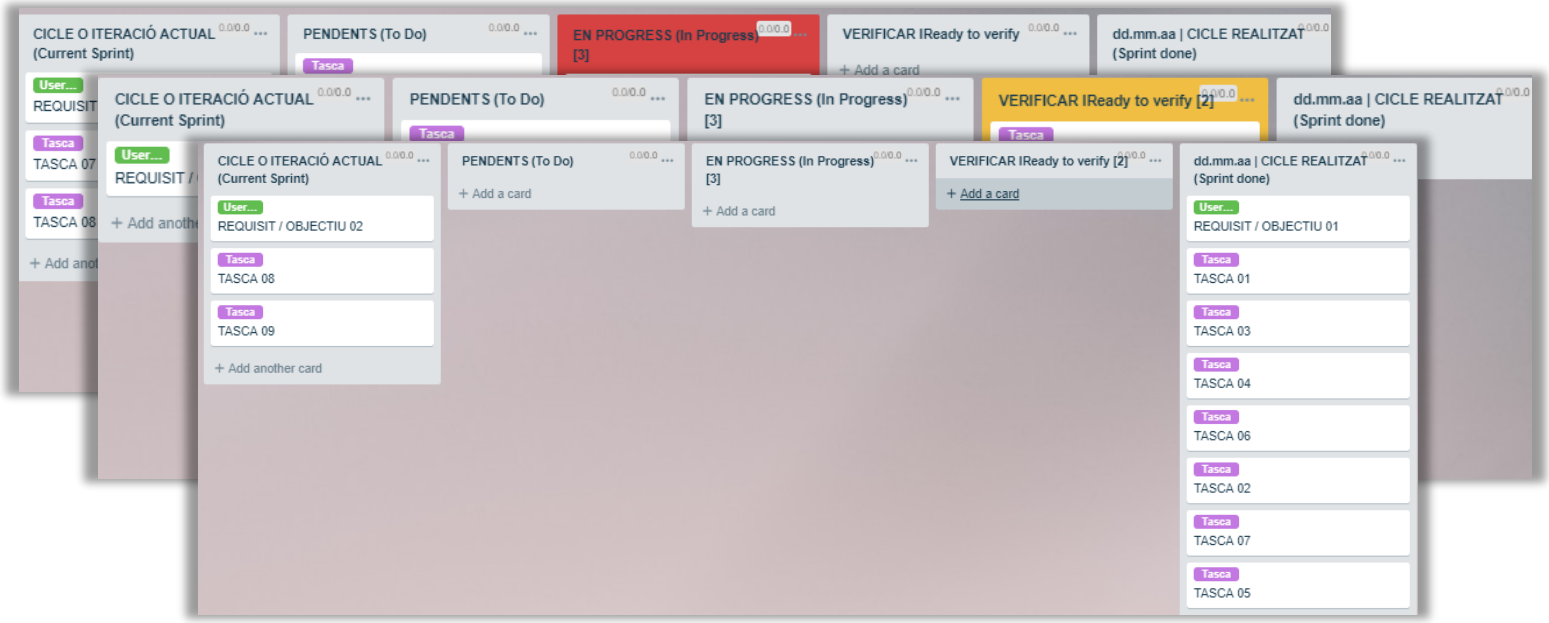
Scrum-Kanban board examples

Scrum-Kanban board examples



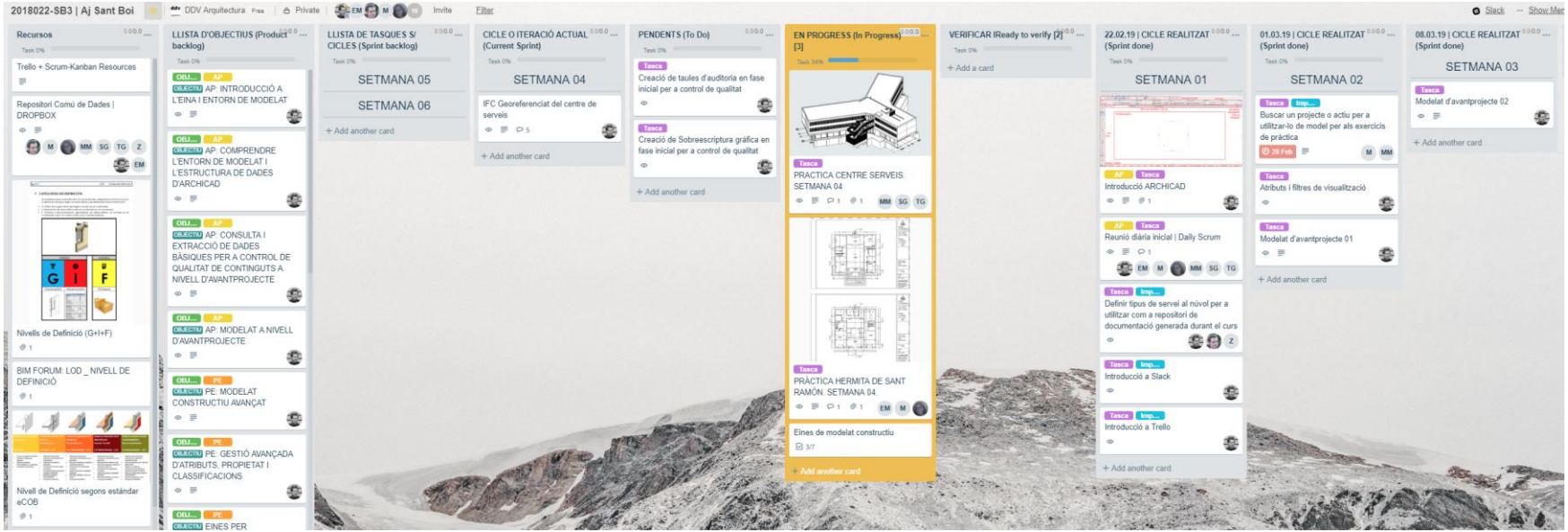


Scrum-Kanban board examples



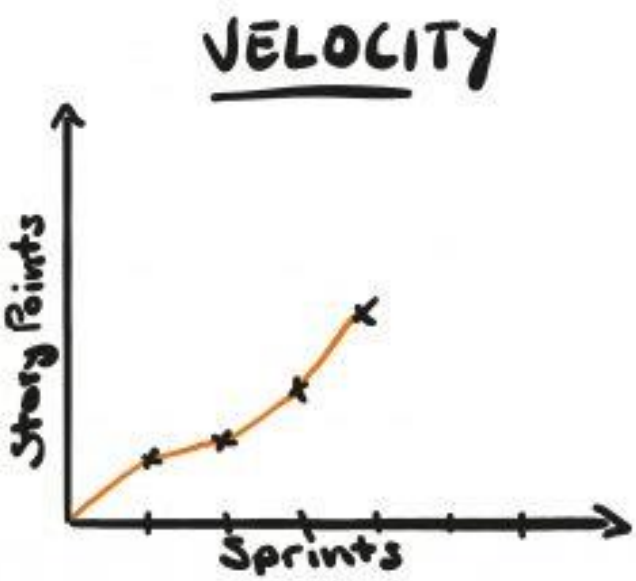
Scrum-Kanban & BIM

Single board example

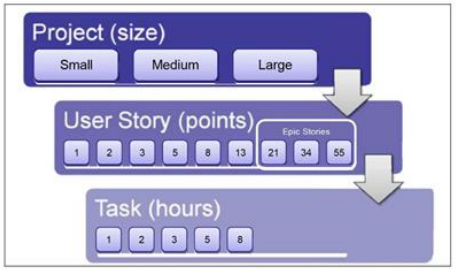


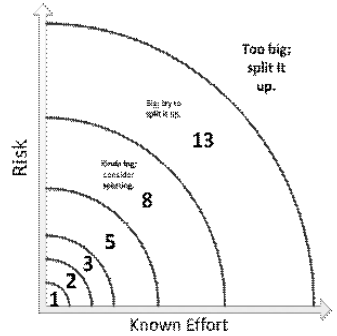
Velocity and Scrum Metrics

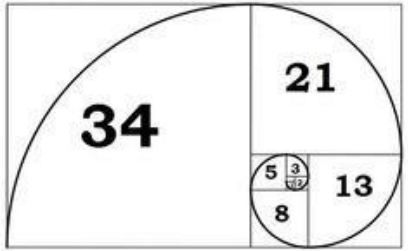
- APPLICABLE TO THE OBJECTIVES **(Story points)**
- A Value to each one of the items Sprint Backlog Items
- At the end of each cycle, the total number of points in “DONE" becomes the "speed" of the team in the specific cycle.



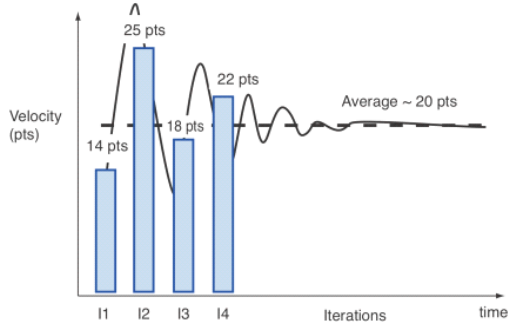
Velocity and Scrum Metrics



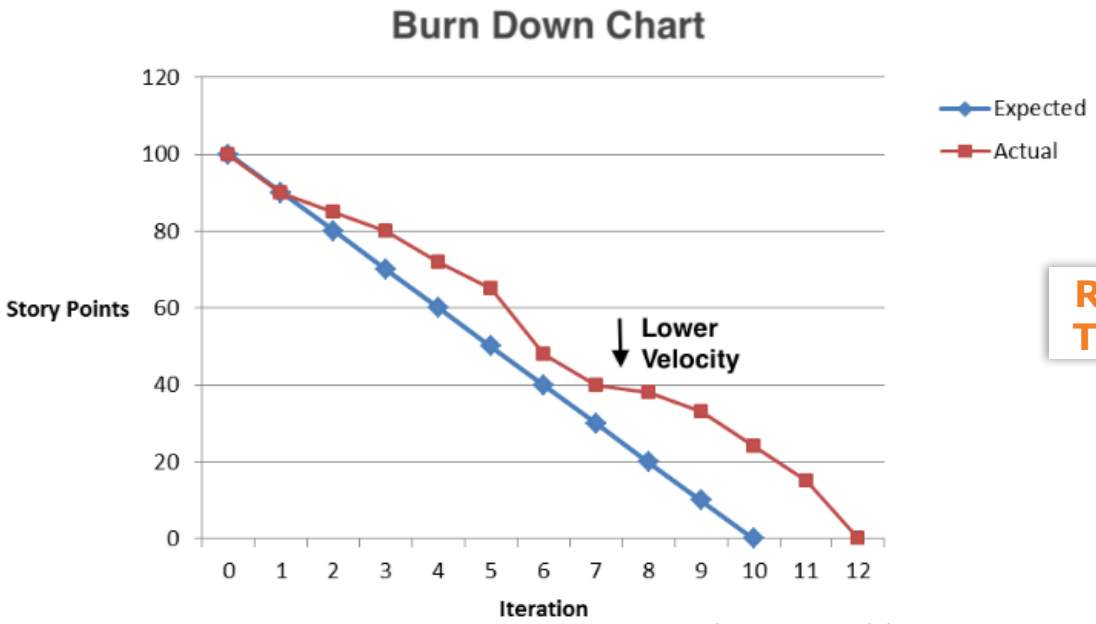




Fibonacci serie



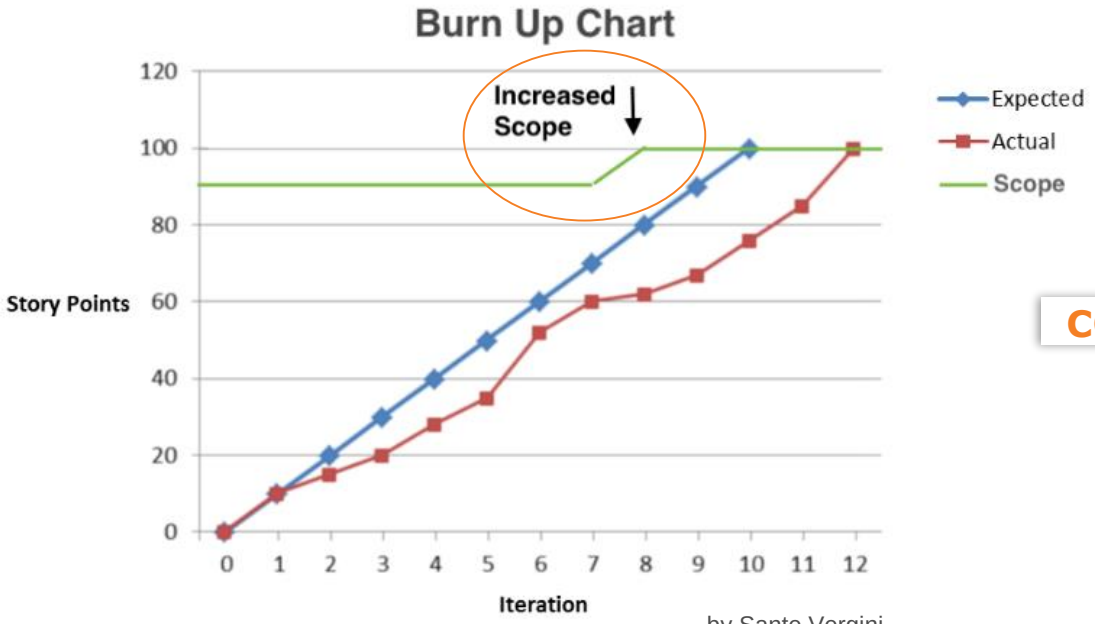
Charts



REMAINING TO BE DONE

by Sante Vergini

Charts



by Sante Vergini

COMPLETED

Questions

Project management in openBIM

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