

Applied concepts of Scrum practice on PMO Team

The idea of this case study is to give real example of applying the scrum concepts on PMO team daily operations in the construction industry and how we can benefit from these practices flexibility in that discipline.

Co- Authors

Dr. Akram Hassan, PhD, MBA, OPM3, RMP, PMP

Sameh Makky, PMP, MBA

*Case Study:
Construction
Industry*

Contents:

Introduction-----02

Real Discussion-----03

Our Project Agile Experience-----04

Challenges-----06

Results-----06

Analysis-----06

Conclusion-----07

Recommendations-----07

DRAFT

Introduction:

We desire in this case study to clarify how the agile practices can be applied on construction projects PMO.

While we are working on setting up a new PMO for the city municipality projects we discover that the agile practices will be the best appropriate methodology to be applied since we have daily frequent changes in the project scope.

The client collaboration in this projects and permanent requirements clarification from their side was the major important factor for this project success.

We kept following the agile manifesto principals on most of the daily operations of our PMO since we cannot get in the contract negotiation much which will not enable us to achieve our project goal and satisfy our client.

DRAFT

Real Discussion:

Is agile applicable across all sectors? Agile methods are now a proven approach to digital, software and to some extent IT projects, but is the rest of the world ready to become agile?

Well before I tackle the world, I will tackle construction...

On a recent holiday to New Zealand I caught up with a friend who manages construction projects (Olympic village in London and currently managing the build of a new village on a former brownfield site)... When I asked her if she thought she would be able to use agile methods on a construction project, to my great surprise, she said yes.... but here are some of my initial thoughts.

At first glance the differences between construction projects and software development seem endless, although I think it can be boiled down to a few major differences:

1. The physical nature of construction – i.e. gravity, site footprints, materials, health and safety risks, and weather.
2. The legislative/statutory environment that construction projects operate within.

The question is whether we can use an agile approach despite these differences?

We can defy gravity and the laws of physics when managing construction projects? I think the answer is yes to some extent. You can't build a house without the foundation, but you don't necessarily have to lay it first. More and more parts of buildings are made off-site as prefab components, so in principle you only need the foundation once the building is ready to be assembled.

There is also no reason why you can't make design decisions as you go along – as long as you make a few key ones at first (but is that really so different to software development?) So what are the key decisions that you must make up front in construction?

1. Planning permission – work within the regulatory requirements and complete conceptual plan to get pre-approval (not that different to the DSDM 'foundation' stage).
2. Most projects are limited by space – so often the footprint of the construction is non-negotiable;
3. Plumbing – once you start constructing, whether on or off site, you need to have a reasonable idea of where the plumbing will be (just like software needs good architecture).
4. Laws of physics – mean that we need sound engineering to ensure our building will last over time (just like we need sound 'code engineering' for our software to last over time);
5. Lead times – fittings and materials might have a delivery lead time. So if you design just in time you might find that this will hold you up... although it might just be a matter of redefining the 'just in time' scale for construction time-frames.

So although a construction project might not be quite as flexible as a software project, there are no reasons why you couldn't implement a 'just in time' approach for the parts of the construction that are not bound by physical and statutory restrictions. You might not be able to apply Scrum by the book, but I don't see why an adapted agile framework combining methods and techniques would not work.

Right, I'm off to find a construction company that will volunteer...

By Sofie Jensen, Consultant

Our project agile experience:

In this portion we will illustrate how we apply the agile practices on our PMO daily operations. We will do so by referring the main stages in our project to the agile project stages.

Inception phase:

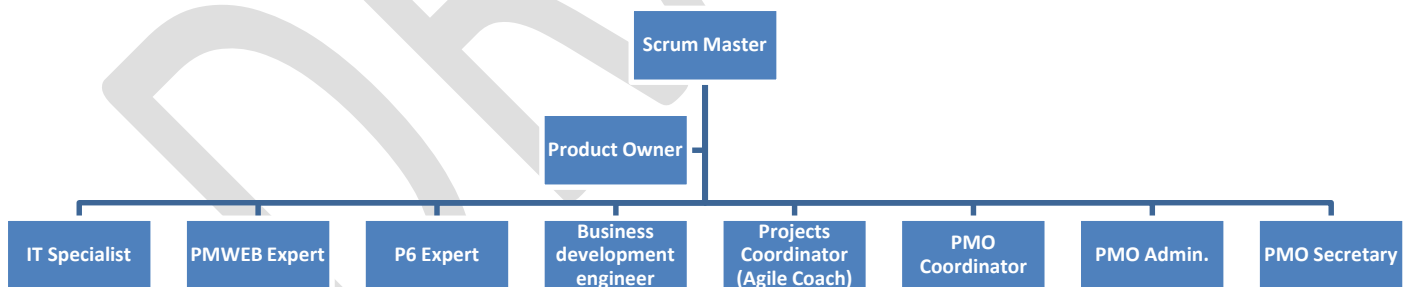
As the inception phase is the preparation period before conducting the work we care about the following activities:

- 1- Creating the project charter.
- 2- Choosing the appropriate team members.
- 3- Drafting the initial plans for first Roadmap, release and iteration.
- 4- Indicating the proper team structure.
- 5- Selecting the proper tools will be used.
- 6- Clarifying the nearest deliverables specification.

Regarding the tools which are being used in this project the PMWEB and P6 from Oracle and that helped us to keep very wide data base for the current projects (Roads-Utilities-Flood Networks) and keep also very quick contract management system which include smart documents work flow.

In our project we have to control and monitor more than five hundreds of current construction projects which was very difficult challenge to keep their data in in proper data base and smart documents work flow.

Scrum Team:



Implementation phase:

The implementation phase in our project is very complicated since our goal is to enhance the existing project management maturity of all the current local contractors for the current construction projects and enable them to reach the best project management standards and practices.

Mission no.1

We started our job by conducting planning sessions in the agile style and that was for indicating the first release backlog items since our project is three years long, we have divided it into three roadmaps and four releases per every roadmap.

Mission no.2

Doing the right job in the right time was our first aim, we started to plan for the first iteration (sprint) by doing the sprint planning meeting to prioritize the most important release backlog items should be conducted in this sprint, we did so by dot voting method and the templates preparation was one of the most important backlog item in this stage, our contract mainly caring about evaluating and enhancing the quality, work progress and safety performance of the contractors while executing the construction projects.

DRAFT

Challenges:

- Applying the required new evaluation templates/guides across all project parties very quickly (Client, Consultants and contractors) while they used to apply very low standards templates.
- Getting their feedback about any required enhancing for the new processes and procedures.
- Working for improving the processes and tools as the received feedback.
- Adjusting the final operation approach in that slow reaction environment.

Results:

Faster Feedback – Easy Improvements – Client Satisfaction

Analysis:

While we are using the agile practices as a style of project management we have found that all project stakeholders are contributed and collaborate effectively for the project success, clarifying the iteration deliverables before commencing every sprint have saved a lot of time and eliminate the rework effort. The daily stand up meeting (scrum meeting) helped a lot to put all the project team members in the picture all of the time and allowed the project team members to cooperate with each other in order to resolve the current pending issues.

The progress monitoring means of the agile style were better than the conventional ones since all of the progress data is at front of the project team members all of the time (e.g. burndown chart, white board illustrating the completed, in progress and not started stories)

The scrum time boxes were very effective mean to eliminate the wasted time in the conventional meeting.

Conclusion:

Some important points we have learned from this experience

- The final product and the client satisfaction are the most important factors of any project success.
- Collaboration is very critical factor in all the project stages.
- Importance of being open mind to changes and how to deal with it positively.
- Importance of the product owner role and how he affects all the other project team members positively if he has well groomed product backlog and updated product roadmap.

Recommendations:

- The construction projects can use the agile project management methodology completely in the design and the planning phases while the methodology while the remaining work in the project can be managed as hybrid projects.
- Construction projects PMO can use the agile methodology by the book in the development phase and can benefit from the agile methodology style in the operation phase.
- The scrum master will play very significant role in planning, mentoring and monitoring the work progress therefore he should care a lot about the team cooperation and watch the client collaboration on daily basis.
- The product owner is the core for the projects deliverables and the final product shape so he should go for aggressive understanding of the client requirements.
- Team members are the main asset for the agile project so they have to be very empowered and specialized so they can work properly for shaping the grooming the final project deliverables.