The interaction between predictive (plan-driven) and agile project methodologies.

When I wrote this article back in 2010, it was pre-SAfe and with emerging agile implementations across many larger organisations .

With the many recognised project methods and project methods that exist within project management, there are two project types; waterfall or predictable project methods and the agile methods. Over the last decade there has been a more outspoken emphasise on the use of agile over waterfall and companies are championing agile as a prerequisite for business development, but to not side track the objective of this article I will not dive too much into this issue.

Actually, I would argue that both models are predictable because there is a known structure and some clear phases and that define the project.

The traditional waterfall models have been preferred in many industries, over decades not only in IT, but also especially in engineering-heavy companies such as construction and the aviation industry. Banking and insurance also make extensive use of the traditional waterfall models. Since the beginning of the year 2000, the public sector in Denmark has also used waterfall models within project management framework. PMI and PRINCE2 are the most common project management models.

Around the same time, the agile models are also becoming more popular, and especially in the last 10 years, we have seen many organisations that have declared an agile project model as their favourite. SCRUM and XP (Extreme programming) are the most common and well-known agile project management models (however, agile advocates will call them development models).
There have also been many statements in recent years for the use of one particular model. Among other things, it is known that public institutions and agencies only use PRINCE2, and external suppliers to the public sector must be certified practitioners of PRINCE2 in order to be able to engage in public projects.
However, there is a tendency for more organisations to have more agility in their projects, but one of the consequences of going the extra mile is that management loses the overview and reporting basics which the traditional models contribute.

This article is intended to provide you with an opportunity to gain insight into how an organisation can integrate waterfall and agile models without losing overview as well as management and control in all layers of the executing projects.

In my book the leadership skills required for managing a successful project is irrespective of methodology applied. At the end of the day it is the collective talent, competencies and skills of the project organisation which ensure the change we want to implement - and the receiving organisation for ensuring that the project is aligned with the direction of the company.

Characteristics of the waterfall project models

PRINCE2 and PMI use the traditional approach to phased projects and both have a very clear structure that describes the management and governance principles for how roles and responsibilities in the projects are distributed and which activities and

products must / should be delivered. There are very clear processes for both models, and if these are anchored in the organisation's project model and approach to projects from top management to executing project participants, there is a high probability that the projects will contribute to increased efficiency during the project and create increased productivity as well. optimise project ROI.

Both models must be adapted or embedded in the executing organization and in the project environment in order for the organization to gain value and benefit from the models. None of them should be implemented blindly and from A to Z.
Both of the above models, so-called predictable project models, are implemented very widely across industries and countries. Both models are recognized as being indispensable in professional project environments.

The models are based on the fact that we know what is to be delivered and have a written agreement on the end product, and that a detailed plan has been prepared for the "project" - at least for the coming period / phase and an overall plan for the entire project.

Characteristics of the agile project models

The agile project models have a similar structure around roles and responsibilities as well as the products to be delivered, and SCRUM, which is the model used in this document, also has a number of recommendations for the process to be followed. SCRUM has shown its legitimacy for many years primarily within IT Software development projects.

The main principles within Agile are to put the individual and the collaboration over processes and tools - to produce / develop something that works in front of a lot of documents and administrative rules, to collaborate with the customer instead of fighting over the contract and to react and act on change instead of blindly following the plan.

The traditional models based on the waterfall method are precisely characterized by the fact that one does not proceed to the next phase until the current phase has been approved and consent has been given to proceed. SCRUM is markedly different in one significant point. There are overlapping phases.
Do the models contradict each other so much that they cannot be combined? I do not mean that - on the contrary!

The starting point for a good project is a good idea, which is described with a vision for the change that the project must bring to the world, and that the project is rooted and owned by a person / unit in the organization. It supports all models.
As a minimum, we need to have an idea of the scope and what needs to be invested to ensure that the project creates co-value for the organization or expected ROI. This assumes all the models are in place.

PMI calls it a Project Charter, PRINCE2 calls it a project terms of reference, and in SCRUM we call it a Vision Document or a One-pager.
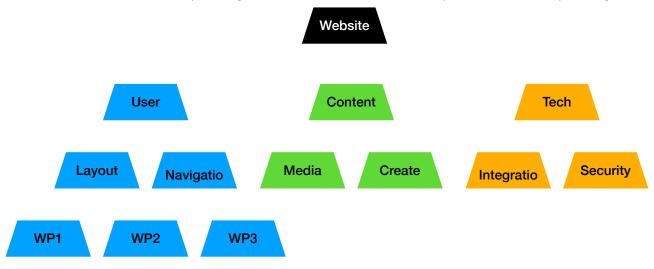
The above is the business rationale for the project.

Project Planning

The differences arise around the planning and execution of the project, and yet...
If we are looking at a project that is going to develop a website, I (along with the project team) will probably make a traditional breakdown of the project, also called a Work-breakdown-Structure, see Figure 1.
I have only made 3 levels, but there are no rules for how many there should be - just the content of the final work package must be unique. WP = Work package.

Figur 1

The above can be identified in our SCRUM terminology as Product Backlog. In SCRUM, we will start prioritising with the customer which WP/story has the highest priority and agree on what we should start with in the first sprint.

In PRINCE2, we will make the further breakdown so that we come down to a work package that has a duration of 1-2 days before we move on with the project.

An option in a PRINCE2 environment - that when the project is approved for the initiation phase and the WBS is defined, that you as PL delegate a level to a team leader, who is given the task of defining product backlog and for that level. Next, the team leader along with the team must define and estimate the content for the sprint backlog. The team leader now has the role of SCRUM MASTER. I know that the agile team is self managing - but someone needs to remove the obstacles in order for the specialists to do the actual work :-)

Tracking and managing progress.

Without a plan, we are not able to lead our projects, let alone give a unique status to the project's sponsors about what temperature the project has, or whether we have used the money or resources to produce the agreed product to the expected quality.

In PRINCE2 and PMI, EVM; earned value management, is one of the most widely used methods to prove that we are on the plan. It is a method based on the detailed project plan and the progress of the project.

In SCRUM, we use Burn down charts to show how far we are - or rather how far we have left, and thus until we are done with products the team has planned in the sprint.

The detailed plan can be used to plan and rough-estimate what needs to go into a sprint. The team agrees during sprint planning what can be achieved in the sprint, and PL can update the detailed plan with this (then next month's detailed plan is updated). SCRUM Master must update the burn down chart daily, and this progress should be discussed by PL and SCRUM Master if the tolerances are exceeded.

The result from the Burn down chart the PL can use for calculating EVM and thus get a good control of the progress of the project, as well as the relationship around consumed resources.

A potential dispute to be discussed is who has the right picture, or put another way - since the Project Plan shows time spent compared to planned, and Burndown chart shows how much time is left, it is my experience, that it will provide some discussions as to whether the project is healthy or whether some improvement activities need to be launched to address the delay. Therefore, it is also my recommendation that you let some sprints run to get a good feel with the development speed of the team.

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