

# PMI Netherlands Agile Local Interest Workgroup

## White paper Part 1 What is Agile

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## What is Agile?

Lately we hear more and more about an Agile project approach. What is Agile? A project management methodology like PMBOK or Prince2 or do we have to think of something else? The latter is the case. The Agile approach does not focus on the project management process as PMBOK and PRINCE2 do, but it focuses on the implementation or delivery process within the project. The word Agile literally means lean or limber. An Agile approach is more about leadership and flexibility than about management and control. This is based on the belief that nowadays in project environments there is continuous change and uncertainty. Modified wishes, insights and priorities, for example because the customer or business does not know what she wants, plays an important role. It is this kind of environment that makes it important to facilitate change, without losing the project result out of sight. This open attitude to change is in the interest of delivering business value and the goal is to generate business value for the customer.

The final product of an Agile project is not completely fixed in advance, but is something that evolves and adapts through continuously gaining insights about the wishes of the customer and complexity of the solution during the project. Compared to more traditional project approaches Agile distinguishes itself by an open and flexible attitude rather than a management and control attitude towards change. Examples of the latter are the need to create extensive detailed requirements documents at the start of the project or a formalistic application of change management procedures.

The Agile approach is mainly used in IT system development. But it is expected to be the iterative development approach that can also be used in other fields like product and process development.

## Agile Approach

Where Prince2 and PMBOK focus on the management side of projects, Agile concerns the actual creation or production process of the project deliverables. However Agile is not a development methodology. It is a set of principles used to align the end-product to the needs and requirements of the customer as well as possible. However in an Agile development approach there is a vision on and requirements to what the end-product should look like. At the start of the project these are formulated more abstractly than in traditional approaches. In a SCRUM-project a team only starts to implement a user story when the team has concluded that the user stories are "ready". The user stories are only accepted by the development team when they meet the agreed quality criteria. The open attitude towards change is not a license for the customer to change their mind at will after each iteration or sprint since a change of mind about the requirements after implementation often means rework and extra costs. The review or demo sessions after each iteration are used as evaluation moments in which new insights about the customer requirements can be made visible to the team (see product backlog).

The successful development of (IT) systems according to an Agile project approach will benefit from a clear description of the procedure to be followed. Because Agile is quite different from the traditional "waterfall" approach it is advisable to get some experience by doing some pilot project first. Agile requires a different way of working of both management and specialist roles. The leadership must learn to facilitate rather than command and control: trust in a team of professionals is essential. The specialists on their turn must learn to work collaboratively on a result for which they feel responsible collectively. Agile requires employees and managers who are less inclined to look for certainties and who find it challenging to start without being certain what the end result will be. Gaining some experience with Agile methods first is therefore essential, before this more flexible and less bureaucratic approach can be implemented organization wide.

## Agile Manifesto and Values

The Agile approach includes different kinds of techniques and methods, each with their own specific characteristics. Known methods include: Scrum, DSDM, Extreme Programming (XP). All these methods have in common is that they are based on the same basic principles. These principles are enshrined in the so-called "Agile Manifesto. It involves the following basic values:

- 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 the elements on the left are more important does not mean that the right elements, such as documentation, are unimportant and useless for a good end result

### A. Individuals and interactions over processes and tools:

Traditional system development is often based on a very tight process design in which the use of certain tools for the implementation of the project is prescribed. The result is that the end-product often is not fit for the business process: the infamous gap between business and IT. In Agile people are more important to project success than the tools. The interdisciplinary collaboration between specialists takes place within a task-oriented, self-organized team. Where necessary, the interaction between team members is facilitated. The customer participates in the team via a mandated representative, "the product owner". This causes the end product to be delivered earlier and with a better fit to the business processes.

To promote the interaction between the team members it is important that all team members focus on the delivery of that one outcome (limit work in progress and task switching, no multi-tasking!) This is best done by a collocation of a team in a shared workspace. This space has sufficient facilities to communicate with each other, but also offers the possibility to work in a concentrated manner. As an example, consider a large project space with walls for whiteboards or brown papers with stickies, desks in the middle and one or two adjoining rooms where one can work individually or have meetings. Customer representatives and specialists (e.g. system architects, developers, programmers and testers) sitting together in the project area which facilitates osmotic communication and tacit knowledge.

### B. Working software over comprehensive documentation.

Traditional waterfall methodologies like SDM assume a system development process in which first all functional specification/ requirements are established, which are then successively developed, programmed and tested. The evaluation of the developed system is based on functional specifications. Even though everything is well described and documented it often appears during testing that the developed software systems do not fit well with the primary business process.

The core message of Agile is "focus on the end result", where working software that fits the business process is more important than exhaustive documentation. However to keep the software maintainable sufficient documentation must be delivered. So an Agile project approach should never be an excuse to create little or no documentation. Agile assumes that the software is delivered via short iterations (2 - 4 weeks) and that the

functionality is assessed on the basis of prototypes and not on the basis of exhaustive requirements documentation.

### **C. Customer collaboration over contract negotiation.**

Many projects, including IT projects are characterized by a large gap between customer and contractor. Research has shown that many customers do not trust IT projects to deliver 'value for money'. In response arrangements are tightened and everything is negotiated and fixed in contracts. However, the result is still unsatisfactory. Agile projects are based on a daily interaction between the customer / business and the project team. Such close cooperation, based on trust, leads to the best possible final product regardless of what has been contractually agreed. If both parties are satisfied with the end product and mutual trust is established than generally negotiating a contract is not so difficult anymore. Of course some agreements must be made beforehand. However, the detailed definition of the end product offers only a sense of financial security, but rarely leads to the final product that is actually of higher quality.

### **D. Responding to change over following a plan.**

During a project the requirements and wishes of the organization change. In a traditional project causes change requests during the execution of the project. By not capturing every detail in exhaustive documentation an Agile project facilitates change. These changes are naturally absorbed by the project team, provided that it remains within the agreed framework. The authorized representative of the customer, the product owner, makes sure business value is maximized within the available time-box. Agile projects are based on the principle of time-boxes: within a pre-fixed period of time (for example, 2 to 4 weeks) a budget is agreed upon in which the development is to be carried out. Within these frameworks, the project team and product owner are free to implement change. This means that if the customer wishes additional features the team itself should look for space in the agreed contract scope. By working with multiple iterations, it is possible to achieve desirable changes during the life of the project. To facilitate this process as much as possible in Agile projects prioritized the desired functionality of the system to be developed. Requirements with the greatest value to the business are the highest prioritized requirements with lower business value fall off. (E.g.: MOSCOW, must haves, should haves, could haves and would be nice have features). This project can still produce a product with business value within the framework of the pre-arranged time and money.

The principle responding to change over following a plan does not mean that one does not try to adhere a schedule. But often it is thought that when a project is behind schedule, it still can be caught up. In most cases, this will not work. If there is a delay in the first part of the project the delay in the second part is usually the same size or larger. In Agile projects therefore planning are adapted to the experiences which hitherto were gained. The PMBOK calls this "progressive elaboration".

## **The human factor in an Agile method**

An Agile approach requires a certain mindset of the specialists in the team. Not everyone is suitable to work in an Agile team. Agilists are like fast chess players. They are able to take intuitive decisions to achieve, what is best for the customer. Specialists who prefer to extensively think it all over before they make a decision, often do not feel at ease in an Agile team.

Working under time pressure is common practice in many organizations. Management should be aware when

selecting a project team that except sufficient availability and expertise of the potential team member also attitude and orientation are important. Specialists with a large need for certainty tend to oppose a deemed impossible time schedule that is forced on them by management. Often they proof themselves right because they rigidly stick to regular and ingrained work patterns. Their own and not the customer's definition of the "right" quality is the starting point. They believe that the customer and management should accept the time and resources it takes to produce this self-determined quality.

To know whether specialists will feel at ease in an Agile approach it is recommended to ask potential team members how they feel about working iteratively within tight timeframes iterative in a value-driven manner. From Agile people you do not get a hesitant or evasive but a proactive response. This proactive attitude will determine the behaviour of the team throughout the project. What to do with team members that lack the Agile mind-set? The best solution is to replace them by team members who are stimulated and challenged by an Agile approach. If those kinds of team members are not available ask yourself if there are enough team members with Agile experience or mind-set within the team to create critical mass for the Agile approach to thrive. Is this enough to prevent Agile-sceptics to get the upper hand? In these situations sufficient coaching should be provided to the team. As a project manager lead by example by promoting team members to take responsibility rather than tight control.

## Agile project Management

Application of project management in an Agile environment requires letting go of traditional management concepts such as:

- Tight change management procedures
- Hierarchical organizational structures with clear allocation responsibilities to enforce desirable behaviour of employees
- More control leads to more orderliness
- Organizations benefit from structure and predictability
- Employees are seen as a cost, they are replaceable "parts" of the organizational "machine"
- Projects and risks are difficult to forecast and are managed by predetermined (complex) planning.
- Problems are systematically analysed and decomposed in smaller work packages

Agile project management focuses on managing change in complex and dynamic environments. It uses insights from the adaptive system biology approach, in which the adaptability of the collective is a central theme. Think of the behaviour of a flock of birds or a school of fish or ants. Agile project management is less a matter of procedures and guidelines and more a matter of leadership. The attention is focused on strategic issues, added value for the customer, promoting cooperation, creating corporate values, continuous feedback. Application of project management in an Agile environment requires applying new management concepts such as:

- Intrinsic learning ability to deal with a changing environment
- Organizations are seen as a dynamic, adaptive system that are made up of intelligent participants
- Recognition of the role of intelligent control in the form of self-organization
- Employees are valuable "assets" in the value creation of organizations
- Confidence in autonomous teams problems into opportunities and challenges
- Identify the limitations of upfront planning in unpredictable and complex environments
- Acknowledge the need to adapt planning to changing conditions