

## Infosys Global Agile Developer Certification

# Soft Skills

## Study Material

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**Revision History**

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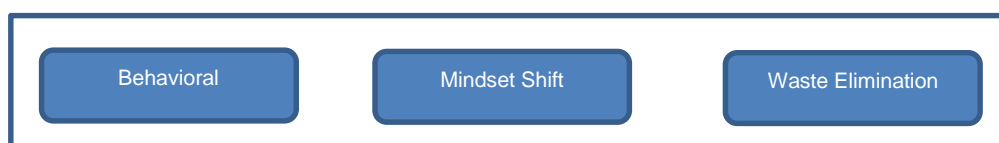
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# 1 Introduction

There is a complete shift in the way Agile projects are executed in comparison to the traditional way. The team needs to be quick at learning and comprehending the project requirements as well as be self-organized and disciplined to take it ahead in a time bound fashion. The Team is not directed or managed by a Project Manager. Most of the decision on project execution is done at the Team level. Also there is direct interaction with the client manager (Product Owner) on a regular basis.

Traditional projects have a staged approach where a lot of emphasis is given on completeness of requirement before the actual project development. Where as in Agile projects, requirements get gradually evolved throughout the project. Therefore the Team needs to communicate and collaborate a lot more with all the stakeholders for the project success. There should be complete trust, flexibility and a great deal of openness among the Team members.

So the Team needs to develop the skills on behavioral aspects, mindset aspects (i.e. in transitioning the thinking process from the traditional way of project execution), and waste elimination aspects while getting started in an Agile project.



**Figure 1: Focus Areas of this Module**

Following are few examples of the scenarios where certain soft skill and mindset related aspects can cause failure of Agile projects:

- Lack of learning inquisitiveness among Team members
- Lack of collaboration among stake holders
- Lack of ownership
- Interpersonal Conflicts
- Unwillingness to share and take additional responsibility
- Absence of open and transparent working attitude

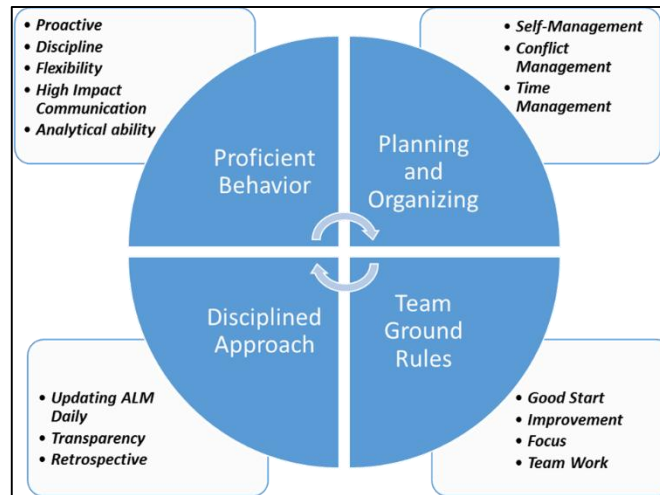
The Agile team members should plan to hone their soft skills right from the beginning of the project. Following is the abstract of some of the important soft skills which the Agile Team members should possess:

- Transparency, Discipline and commitment to work
- Ready to speak about the road blocks
- Self-organized and motivated
- Strong at collaboration and communication
- Very high degree of learnability
- Ready to accept the change
- Believe in Team work
- Able to negotiate and manage interpersonal conflict

This module focuses on all these soft skills which Agile team members need to have as these skills play an important role on the overall project accomplishment.

## 2 Behavioral Aspects

This section explains the importance of behavioral aspects which are vital for the success of Agile projects and the Team members must enhance these skills from time to time.



**Figure 2: Various aspects of Behavioral Soft Skills**

### 2.1 Proficient Behavior

#### Proactive

The Agile Team members need to be proactive in all the transactions. There is no concept of a manager driving the Team. Team members are self-organized and motivated to meet the commitment. Therefore they have to be proactive in raising any concern at any point of time as well as ready to take up any tasks which helps to achieve the goal.

#### Discipline

The Agile Team members need to be lot more disciplined than traditional development projects. The sprints are time boxed and so also all the meetings. They need to be utmost careful about the importance of being regular, disciplined and time bound completion of activities. It doesn't mean they should over work to meet the commitment, rather effectively use the time allotted for the task. Since Team members themselves plan and estimate tasks, wherever they go wrong, they should be proactive and transparent to admit the shortfalls.

#### Flexibility

The oxymoron 'Generalist Specialist' needs to be the heart and soul of Agile project team members. A member of the Agile team should be able to work on the design, develop modules and test. He or she may be a specialist in one function, but also need to be a generalist in the other functions. The Team members should be flexible to interchange the roles they play based on the requirement for the Sprint.

#### High Impact Communication

The two pillars of communication are listening and questioning. Since the Agile project involves short iterations, it becomes very crucial to develop these two skills and become good consultants to deliver quality products. The Team members should also work on their articulation skills, to improve clarity of speech. Reducing pace of speech would be a good way to improve clarity and would help in articulating better.

Communication in meeting are also a great factor of success. It is very important for Team members on how well they initiate ideas, clarify them, bring other members into the discussion and build on their ideas. Seeking and giving information which is asking more questions during the meeting and responding to questions are important.

Therefore Agile Team members, especially those who are new in the project and have less experience, should be encouraged to speak more during the meetings.

### **Analytical ability**

In Agile projects, Sprints are of short duration in which a set of User Stories need to get completed. There can be hindrances to achieve the same. The Team should possess good analytical skills, which will help in problem solving by root cause analysis. They should be quick, fast and accurate in the analysis. Practicing these skills is important.

## **2.2 Planning and Organizing**

### **Self-Management**

The Agile Team needs to be self-organized and self-managed. They need to show high degree of learnability and ready to accept change. Since work doesn't get assigned, the Team need to be proactive in taking responsibilities. Being self-managed and collaborative are key for all Agile Team members. This would benefit them in increased speed in problem solving as well as high productivity levels.

### **Conflict Management**

When there are number of people working on the same requirements, it is natural to have conflicts that arise and the need to resolve them. It is important that the Agile coach (or the Scrum master) here helps out the team and resolves conflicts in a constructive way. The coach / Scrum master also functions as a Negotiator between people in conflict. Before going to the coach, the team members in conflict should try to resolve out their differences by asking following questions:

- Have I shared my concerns with the other person I am in conflict with?
- Do I need an intermediary person to help me sort the issues?

If these are answered, and still the issues are not resolved, then the help of the Agile coach can be sought.

### **Time Management**

Managing the time and following the burn-down chart is crucial when it comes to delivering projects using the Agile framework. It is important for the Team to plan approximately 6 hours of every day work for the committed user stories, because rest of the time should be utilized for issue resolution and planned/unplanned meetings. It is vital to prioritize tasks according to its importance and urgency. Every individual should be able to handle non-value adding (or time killing activities), which are:

- Procrastination
- Unnecessary long breaks
- Unofficial calls
- Visitors

## **2.3 Following Team Ground Rules**

Agile teams as such, need a very high level of integrity. It is important to establish ground rules when functioning as a team. Examples of ground rules can be: Do face to face communication whenever feasible, inform individual schedules to the entire team (i.e. leave plan, etc.), should not wait for raising questions or issues, always meetings must begin on time and end on time, and so on. It is required that all the team members attend the Daily Standup meeting regularly. This will help understand what is happening, know what others are doing and perceive where people can help each other. Following are some of the characteristics which Agile teams should exhibit by implementing the ground rules:

### **Good Start:**

This means that the stand-up meeting should give energy, not take it. Energy comes from instilling a sense of purpose and urgency, a clear sense of the purpose and a clear understanding what needs to be done to achieve it. It's important to distinguish this from 'false urgency', where people are geared up for activity but are without shared direction.

**Improvement:**

Improvement is not just about problem solving. Team can't fix problems which they are not aware of. Daily-Standup meetings help in exposing the problems in the project to the entire team and hence provides better opportunity on improvement. Team should be proactive in identifying better ideas and techniques and sharing them with each other.

**Focus:**

All the collaborative activities such as Daily-Standup meeting or Sprint Planning meeting or Sprint Review/Retrospective meetings should be conducted by doing focused and constructive discussions so that Team member's attention to the end objective is never lost.

**Team:**

Effective teams are those which communicate regularly and supportive towards each other, and work effectively. This will help the team members to collaborate with each other to resolve the obstacles faced by them. Any team which is effective in delivery is autonomous, or in other words has a characteristic of self-management.

## 2.4 Disciplined Approach

**Updating ALM (Application Lifecycle Management) Daily**

ALM is an Application Lifecycle Management tool used for planning and tracking Agile projects. The common features available in any ALM tool are Product Backlog, Sprint Backlog, Release and Sprint Burndown charts. It is the responsible of every team member working in Agile project to update the Sprint Backlog daily with the remaining effort for the tasks they are working upon. This will provide the right indication and status of the project progress. When working on an Agile project, one can always expect changes. It can be the changes the team members make, the changes the client wants in the project planning, building or testing activities and so on. ALM functionality helps to manage this process effectively. As Carolyn Pampino of IBM says, *"ALM coordinates people, processes and tools in an integrated lifecycle of repeatable and predictable software development activities"*.



**Figure 3: Illustration of Disciplined Approach**

**Transparency**

The need for transparency is very high in Agile project. The overall working of the team should be transparent and each member knows the strength and weakness of the team. This helps to achieve the goal by knowing the problems when they get introduced.

Agile process facilitates the Team members to be transparent in many ways. They meet daily to track the progress, where importance is given for visual way of tracking. The process helps in being transparent, as they have to share the progress and road blocks on a daily basis. Team members should have the willingness to be transparent for the success of Agile project.

**Retrospective**

Retrospective is looking back at the work, seeing what has been done in the Sprint. The retrospective meeting is conducted at the end of the Sprint. It is an activity that will help to plan better and improve in the next iteration.

Generally, the team tends to skip this meeting or oversight it assuming that it is not an important meeting. This is an important activity because, the team would discuss three things: 'What went well', 'What didn't go well' and



'What can be improved'. It is at this point, the entire team gets various perspectives of all the members regarding their insight of the project. It is more like a 'Lessons Learnt' meeting. This requires an atmosphere of trust and honesty, where each member feels comfortable to share his/her thoughts.



**Figure 4: Illustration of Sprint Retrospective Meeting**

## 3 Mind Set Shift

### 3.1 Shift in Mindset required for the Team

Agile approach for Software project execution makes teams/leaders to shift mindset from traditional approach to Agile approach. Following are key mind shifts needed in Agile projects:



**Figure 5: Illustration of Shift in Mindset**

#### **Embracing Change**

The traditional mindset is to follow all processes and methods to achieve the goal. No changes are encouraged by the team during the course of implementation. This has a lot of constraints in terms of working collaboratively and innovatively. Mind shift is needed, when working in Agile to move from constraining change to embracing and leading change. The practices such as incremental delivery and continuous feedback are imbedded here. The purpose of Agile is to show regular progress so that necessary corrections are done during the course. This is a win-win situation for both client and the project team.

#### **Self-Organizing Teams**

Traditionally, teams are directed by someone else who has authority to drive. Project Manager has the responsibility to assign work to the individual team members and hold them accountable for completing it. The accountability of project is not with team, it is with project manager/leader. Hence, team members used to focus on assigned tasks for completion with no awareness on the bigger picture or overall purpose of the project. This by default leads to disconnect in understanding the client/business objective, less motivation and no innovation.

When working in Agile, shift in Mindset is required to move away from directed teams to self-organized and self-directing teams. Each team member is accountable for self-assignment and completing the assigned work. The team is jointly accountable for solving the business problem and project issues. Agile teams are expected to be self-driven and self-motivated team. The result is higher connect with client/business, higher motivation, and increased innovation that leads to better solutions.

#### **Collaboration**

In Agile, it is utmost important to focus on collaboration between all the stakeholders and delivering valuable business outcome. A shift is needed to move from practices based mindset to behavior based mindset. The shift to behavior based mind set includes shifting towards embracing the change, joint accountability on all the activities, and focusing on value based outcomes. Agility is about focusing on joint collaboration besides following all traditional process in organizations.

## 3.2 Transforming from a Traditional Project Team Member to Agile Project Team Member

There are many specific agile development methods which promote teamwork, collaboration, and process adaptability throughout the life-cycle of the project. It is very important for the project team member to un-learn the traditional methods and learn/adopt the agile methods for transformation and successful execution of the agile projects. Following are the key points which highlights the areas of Transformation for a traditional project team member to an agile project team member.

- Agile methods break Releases into small Sprints which involve minimal planning. Sprints are short time frames (time-boxed) that typically last from one to four weeks. Multiple Sprints would be required by the team to release a working software or new features.
- Each Sprint involves a cross-functional team working in all functions: planning, requirements analysis, design, coding, unit testing, and acceptance testing. At the end of the Sprint, a working product is demonstrated to stakeholders. This helps project team to adapt to changes quickly based on the feedback from the stakeholders at the end of the Sprint.
- Agile team should have a customer representative, e.g. Product Owner who is available for the team to answer mid-Sprint questions. It is the responsibility of each team member to use the availability or time of the Product Owner effectively for any clarifications/misinterpretation of the functional requirements.
- Agile development has Daily Stand-up meetings (max. for 15 mins.). Team members report to each other about: 'What they did the previous day', 'What they intend to do today', 'What their roadblocks are'.
- Continuous Integration, Automated Unit Testing, Pair Programming, Test-Driven Development, Design Patterns, Code Refactoring are often used in Agile projects to improve product quality and enhance project agility. Team members should enhance these skills and implement them effectively.
- The Agile team needs to be always motivated and have continuous interaction with the Product Owner and stake holders for better understanding of product. Agile requires more than the technical expertise needed to gather requirements, and develop and test new product lines. It requires soft skills, leadership competencies, and an understanding of how to apply those skills in a more malleable, people-focused setting.
- In Agile, feedback during the incremental development process increases awareness and helps the project team to develop solutions with positive alternatives. During the Sprint, it is essential to provide feedback by the team members to each other that contains a clear purpose, which is specific and descriptive, and offers positive alternatives.
- During Sprint Retrospective, it is important for the Agile project team to identify improvement areas by asking following questions:
  - What to start in the subsequent Sprint,
  - What to stop from the subsequent Sprint onwards, and
  - What should be continued from the previous Sprint to the next Sprint

The input for this Retrospective discussion should be the feedback received during the Sprint Review meeting which needs to be used constructively and effectively.

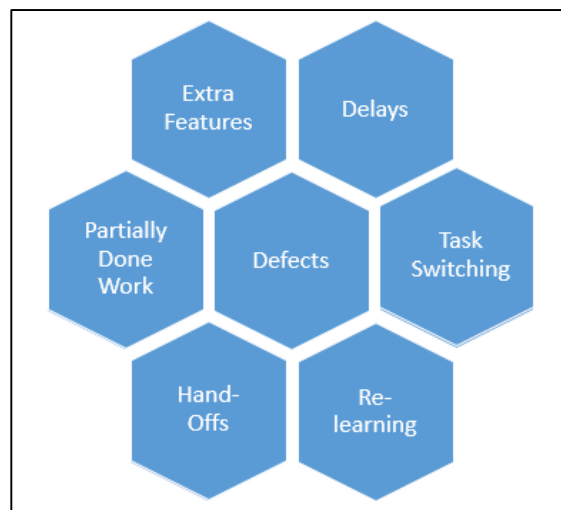
## 4 Waste Elimination

The concept of 'Waste' is from the Lean principles and was initially introduced in the manufacturing industry and later has been conceived in Software industry. In Software terms, any feature or functionality or process step that neither adds value nor is used are considered as waste and should be eliminated from the system/product/process. Lean philosophy regards everything as waste which does not add value to the client.

In Lean software development, Tom and Mary Poppendieck translated various types of waste identified in manufacturing industry into some specific types which are relevant to software development. These are:

- Extra Features (unnecessary code or functionality)
- Delays (in the software development process)
- Handoffs (bureaucracy)
- Partially done work
- Defects and quality issues
- Task switching
- Relearning
- Starting more than can be completed
- Slow or ineffective communication

Following points provide a brief on the above mentioned wastes, and how to eliminate them or reduce their impact in Agile projects. Generally, these wastes are found during Sprint Planning or during Sprint Execution.



**Figure 6: Different Types of Waste**

### **Extra Features:**

This type of waste means providing or developing more functionality than what is required or asked for. It primarily occurs because of improper understanding of the product vision, or scope of the project by the team. Following are the points which would aid in eliminating these causes:

- Product Owner has the ownership on Product Backlog which consists of all functional features. Team must ensure that they get the right information and clarity on scope and prioritization of these features (User Stories).
- The User Stories need to be prioritized based on value, cost, and risk. It is important for the Team members to participate in the Release Planning meeting and provide their inputs from the feasibility, interpretations and implementation of these stories.

- The team should take frequent feedback from the relevant stakeholders to validate their understanding of the requirements and providing the right solution or functionality.

**Delays:**

Anything that takes or causes more time for a value added activity is considered as Delay. In software projects, this can be caused due to unwanted processes, or too many things in progress, or dependencies (internal/external), or assumptions/clarifications and impediments. Following are the points which would aid in eliminating these causes:

- While starting a new Sprint, team should identify only the mandatory process which would be needed for that Sprint. For example, if manual testing is not required for certain User stories in a particular Sprint, then categorize the user stories accordingly and perform the manual testing for only those user stories for which it is needed.
- Team members should not take any activities which they cannot understand or have no knowledge.
- All dependencies should be sorted out by continuous collaboration with the required stakeholders. If there is any dependency with the Architect for example, for any important review during the Sprint, it has to be identified upfront and planned appropriately. When the team members are distributed across locations, they should proactively plan for all logistics and backup plans for any Video/Audio conferences so that they can avoid any delays due to infrastructure constraints.
- Team members must get all their assumptions clarified at the right time. Before proceeding with in-complete understanding, they should highlight and get proper attention from respective stakeholders.

**Partially done work:**

The User Stories which does not meet the criteria of 'Definition of Done' or has incomplete tasks are considered as partially done work. The main reasons for this type of waste are either the technical complexity that was not appropriately anticipated during the Sprint Planning meeting, or wait time (long gap) between the tasks that were identified for the story completion, or inadequate tasks identification. Following are the points which would aid in eliminating these causes:

- The complexity of the User Stories should be assessed appropriately so that the team can pick it up accordingly. If needed, request the Product Owner to explain the stories in further detail.
- When stuck somewhere, proper support/aid should be looked for. Cross-functional teams should be leveraged.
- It is a good practice to take inputs from the team members while decomposing the user story into tasks. This will help the individual to identify the right task to complete the user story.

**Defects**

Defects indicates erroneous functionality that produces in-correct output. They occur mainly because of either improper understanding of the User Story (Requirement), or failing acceptance criteria, or team member's technical skill incapability, or involvement of testing activities. Following are the points which would aid in eliminating these causes:

- Until and unless there is a complete understanding of the User Story, the story development activity should be deferred. It's the team member's responsibility to get the complete understanding of the user story by getting clarifications from Product Owner or required stake holders.
- It is very important to have an acceptance criteria written against each User Story. This would help in better understanding of the user stories from the implementation point of view. This is generally ignored by many teams and lead to inconsistencies in the final acceptance.
- It is very important for the Team members to have the right skills while working on the project and if required undergo trainings to get equipped with right skill sets.
- It is recommended to involve testers for planning, and strategizing the testing activities right from the Release stage and during every Sprint Planning stage.

**Context Switching:**

Context switching happens when team members have not completed the present activities and starts working on another activities. This happens primarily because of shared team i.e. same members are asked to work on another project in parallel, or various interruptions on the ongoing activities, or improper coordination between the team members.

Following are the points which would aid in eliminating these causes:

- Various sources of Interruptions could be related to infrastructure, or environment dependencies, etc. During Sprint Planning meeting, such external dependencies should be identified up front. They have to highlight them as impediments during the daily stand-up meeting and let the Scrum Master work on them.
- Team members must ensure that the User Stories are prioritized during the Sprint Planning meeting. If this does not happen, team members would be juggling between stories during the Sprint.
- All the team members allocated to a project must be dedicated teams. In Agile, assigning the team member's effort across various projects would lead to lower productivity of the individuals as well as for the overall team.

**Hand-offs:**

This indicates passing the work or tasks from one person to another. This mainly occurs because of nature of tasks required for the user story, or if teams are distributed between different locations, or lack of visibility of the information. This could be eliminated by having cross-functional teams, usage of flowcharts and wireframes, and executing the tasks at one location as much as possible.

**Relearning:**

This is about reinventing the wheel and not using the existing knowledge repository available amongst the team. It occurs mainly because of either improper knowledge-sharing practices within the team, or lack of needed content or documentation, or because of distributed teams. Following are the points which would aid in eliminating these causes:

- The team should have regular activities for sharing knowledge amongst themselves. Most of the Scrum events i.e. Sprint Planning, Daily Stand-up meetings, Sprint Review/Retrospective meeting aid in sharing knowledge amongst the team. It is important for all the team members to participate in all the team meetings.
- The team should always plan for creating the just enough documentation as this is one of the important artifact for knowledge sharing especially if there are exits or replacements within the team.
- When the teams are distributed, it is very important to leverage the technology aids i.e. WebEx, Skype, Video/Audio Conferencing, etc. as per feasibility for interacting with different team members across location and share the knowledge.

## 5 Practice Questions

### Question 1

How are the Agile Project Teams managed?

- a) Agile project Teams are self-organized and self-managed
- b) Agile Project Teams are managed by the Project Manager
- c) Every Agile Project Team has a Product owner who manages the Team
- d) A dedicated Scrum Master manages the Agile Team

### Question 2

In Agile projects, the team members should hone their Soft Skills because

- a) These skills are vital for the success of Agile projects
- b) It helps the project team to eliminate waste (or at least reduce their impact) in Agile software development
- c) To learn/adopt the Agile methods by having a shift in the mindset away from traditional approach
- d) All of the above

### Question 3

In Agile projects, the Team members are expected to be more disciplined. Why?

- a) The sprints are time boxed and non-negotiable, so Team members must complete all activities on a time bound manner
- b) The Team is self-organized and must work towards meeting the commitments as per Sprint Planning
- c) Scrum master monitors the project on hourly basis and hence Team need to be disciplined
- d) Both 'a' and 'b'

### Question 4

Agile Teams can resolve the conflict among themselves by discussing and questioning each other before approaching Scrum master or Agile coach.

- a) TRUE
- b) FALSE

### Question 5

Which of the following is not considered as 'Waste' as per Lean principle in software development perspective?

- a) Starting with more work than that can be completed within time
- b) Extra functionality
- c) Slow or ineffective communication
- d) Updating ALM daily

## 6 References

- 'Lean Software development', Tom and Mary Poppendieck
- 'The Lean Mindset', <http://www.poppendieck.com/people.htm>
- <http://www.robbiemaciver.com/blog/18-agile-mind-shifts.html>
- <http://agile.dzone.com/articles/seven-wastes-software>
- <https://www.scrumalliance.org/community/articles/2013/september/how-to-manage-the-7-wastes-of-agile-software-development>
- [http://en.wikipedia.org/wiki/Lean\\_software\\_development](http://en.wikipedia.org/wiki/Lean_software_development)





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