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Why Defects in an Agile Environment are Priceless

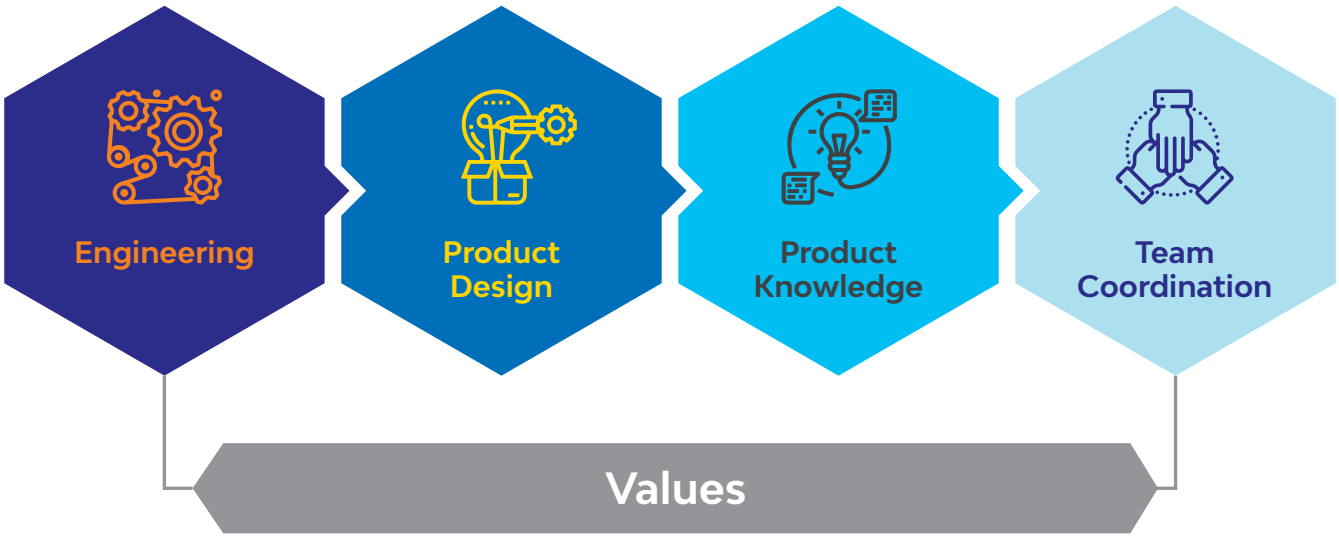
The dictionary defines "defect" as a shortcoming, fault, or imperfection.

Author **Manojeet Chatterjee**

When this word appears in the business environment, it implies significant non-value-added work in the delivery chain, negatively impacting both costs and stakeholder confidence. This article brings forth a different perspective of defects in an operating system and encourages the behavioral study of the information generated instead. Most often, faults bring forward precious data, and when this intelligence is used judiciously, it ensures high quality and self-healing. The inner core of defects hides the true reason for where the chinks in the chain are and where the team is falling short. The art lies in decoding the symptoms appropriately, understanding them, and executing focused health control programs.

Defects typically also expose a vast range of shortcomings, the totality of which could be overwhelming and detracting in most cases. Here too, the art is in learning from what matters most to you. While they may differ in some instances, the following can be considered generic fundamental blocks of the software value chain and deficiencies that would cover the vast majority of the defect's origin.

What is the reason for the defect?



Engineering

This implies the engineering aspects of software delivery and covers everything that helps you deliver the product, including technical skillset, project management, requirement elicitation (story, use case, etc.), test coverage, and more.

Product Design

While the design for some parts is an outcome of your solution choices, by and large, it represents the design choices made by the team over time to accommodate or accelerate business functions. The key drivers of design choices include focus on simplicity, atomicity, reusability, performance, future technical fitment, and more—essentially a cumulative view of all your design choices.

Product Knowledge

This involves addressing the critical questions: is your team's vision aligned with that of the stakeholders and product owners? The team's accurate alignment with the product intent is vital to the success of the project. A broad understanding of the product that goes beyond niche knowledge in one area helps accelerate the alignment. Besides, similar functions across various organizations can vary significantly as they typically solve different intricacies.

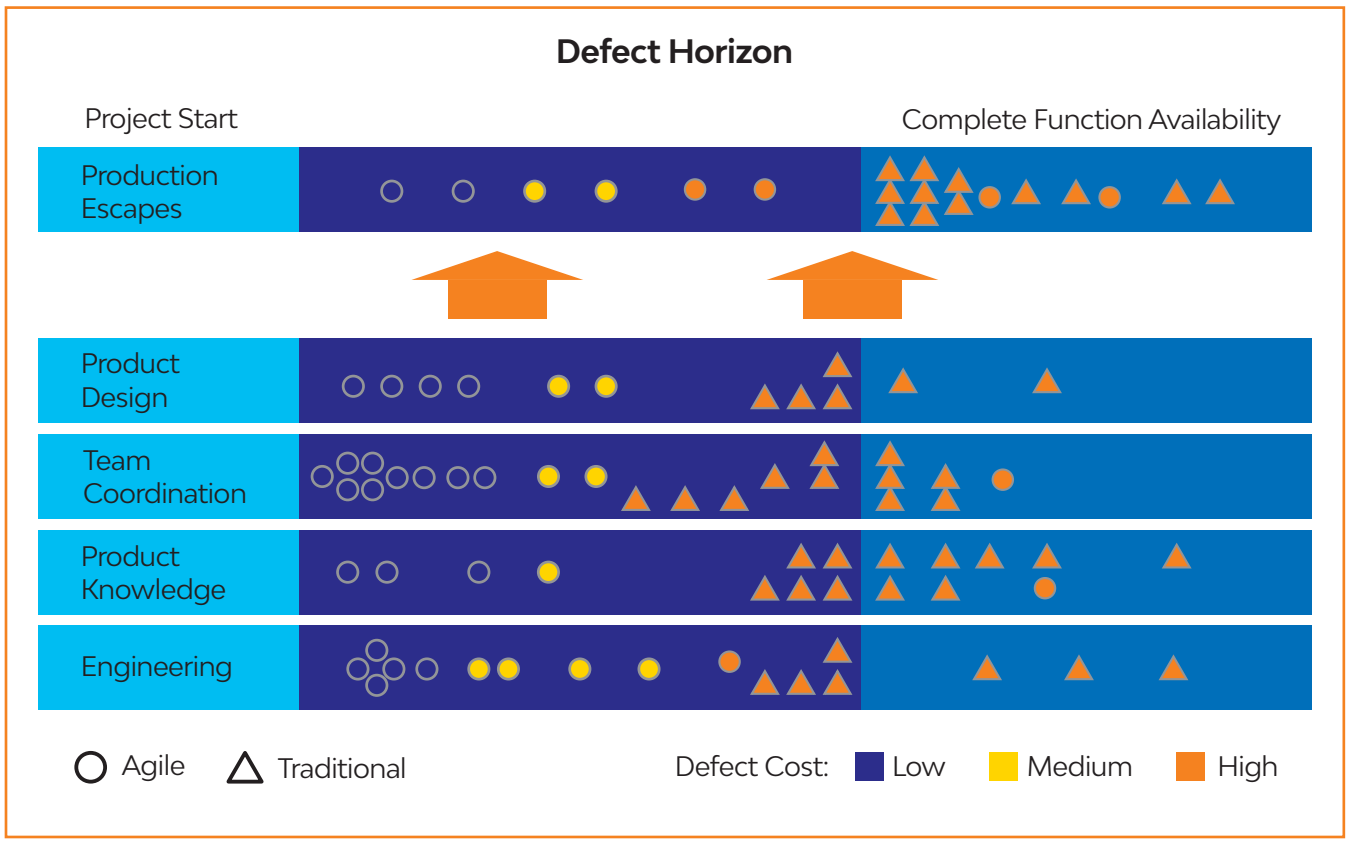
Team Coordination

Each team member is a crucial part of the value delivery machinery. They need to be in rhythm and in sync to create an optimum symphony and ensure high quality and consistent value creation.

Values

Be honest. Typically, as managers make quick fixes to achieve aggressive targets, it becomes extremely vital to stay open and transparent with the team and the customer.

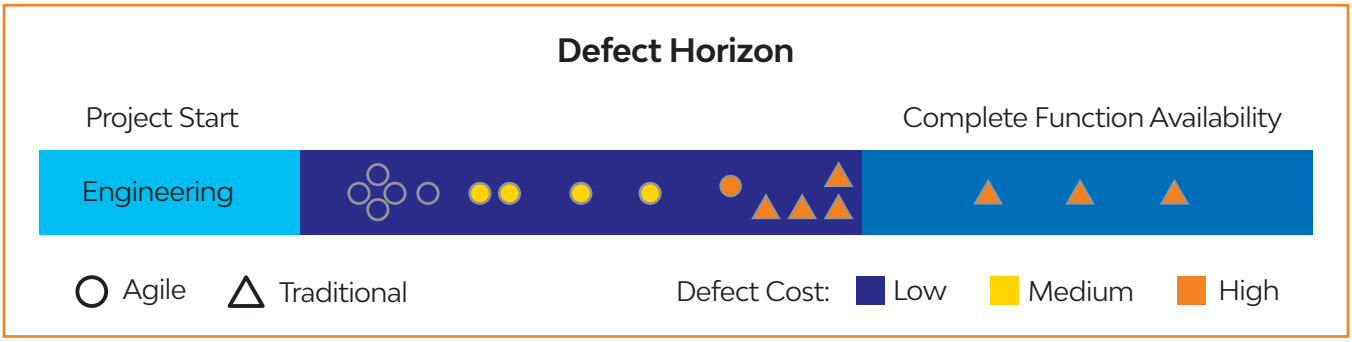
While several other categories may have worked, this article focuses on driving value from defects, and understanding the defect horizon is critical.



The matrix above represents how defects flow in the systems when you follow a traditional approach versus when you adapt the agile process. The "Production Escapes" or defects that make it to the production phase are the most damaging. They are not just very expensive to fix but also negatively impact the customer confidence in your capabilities significantly.

The key is to leverage pre-production defect information to correct course and reduce production escapes. To do this, it is imperative to leverage the early knowledge of shortcomings to make amendments and minimize or even eliminate possible defects. Let's discuss in detail how we can turn defects into value.

Engineering



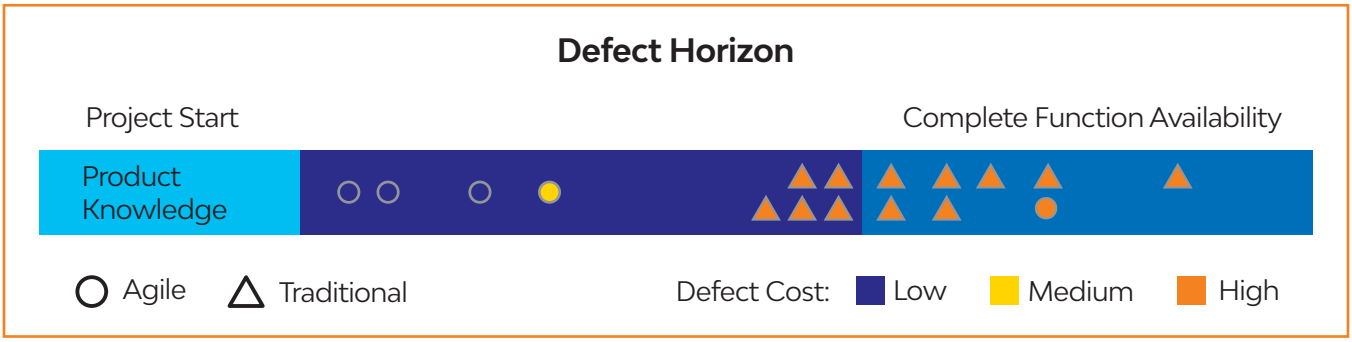
When you start seeing defects directly related to engineering, technical capability, low-grade requirement elicitation, and oversights, it provides insight into the gaps in the teams' competencies. In an agile world, you are now empowered to course correct. Some of the approaches typically followed include:

- **Technical training**
- **Requirement elicitation training/ sessions**
- **Establishing an appropriate reward system**
- **Team coaching and one-on-one coaching**
- **Team replacement**

With these insights, you are empowered to apply corrective measures and watch course correction results. You could also execute placements as an extreme measure, if necessary. Defects will relay back the truth of your endeavors.

Unfortunately, when undertaking the traditional approach, the core deficiencies remain hidden. They may not show their full impact until the product is placed in a real test environment with customers or proxy customers. By then, it becomes too late to make amendments due to the dependencies of the resource.

Product Knowledge



Perfection is rare. A perfect match of available resource's domain knowledge and the product are rarities, and it is typically an evolutionary journey for the teams. It is imperative to have a keen and sharp observation to evaluate defects and tie them with the root cause.

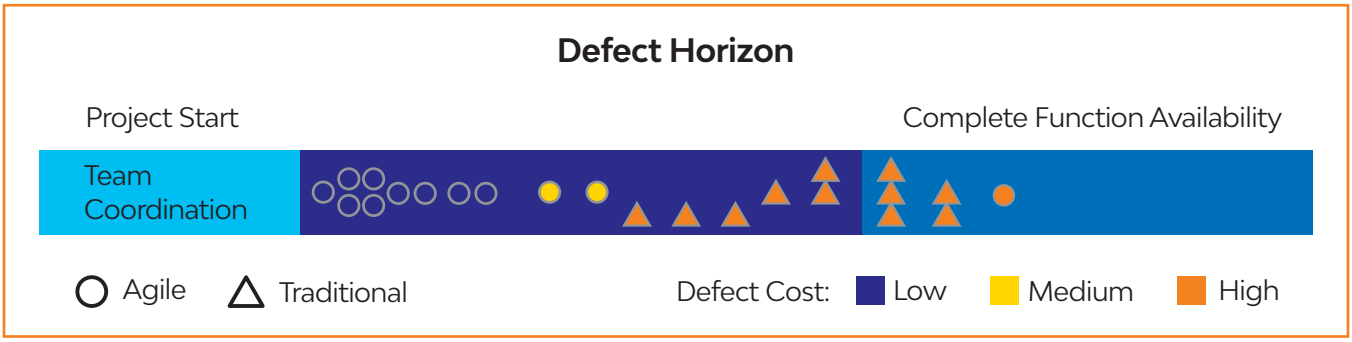
A more straightforward way is to ask this question to yourself when a defect emerges: Would better product functional knowledge and product vision have helped avoid this defect?

If the answer to the above question is "Yes," it confirms the lack of product knowledge as a possible reason. You can take the following approach to ensure selective functional learning:

- **Tutoring by analysts**
- **Offline/ on-demand tutorials**
- **Sessions with the product owner**
- **Quiz, both generic and focused**
- **Product vision sessions**

In the agile world, defects tell the complete story and help you course correct. In traditional management, the team learns new aspects of the product during product acceptance while understanding the rejects. This deficiency is a severe threat because the product has been developed with incomplete insight, and finally, you pay a hefty fine with several post-production defects. This further leads to poor customer experience and undesirable outcomes in any situation.

Team Coordination



The team reaches a synchronous performing phase only when all members understand their role and integrate and collaborate efficiently. Any team's optimum rhythm is achieved with sufficient practice, and challenges around attrition or rotation can be easily minimized in a well-oiled, concerted environment.

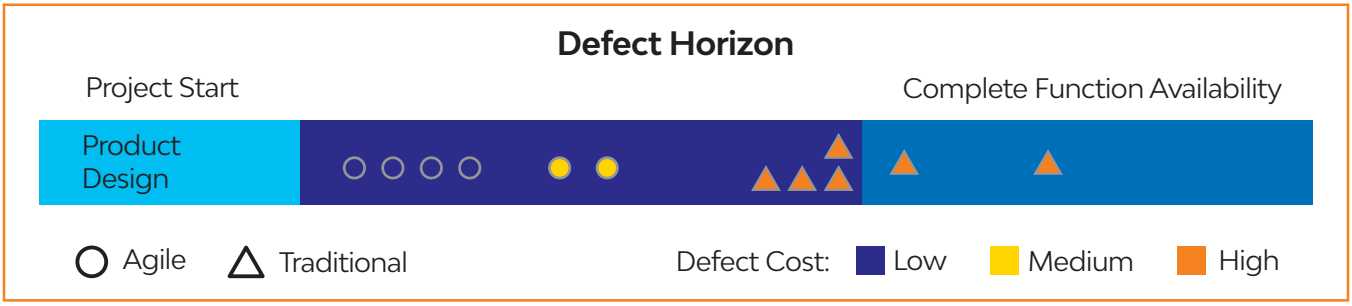
In the agile world, the team members need to work closely in the initial sprints to reach the optimum performing state. Once this rhythm in product delivery is achieved, it lowers the number of defects that result from communication gaps, untold expectations, and dependencies get contained quickly.

While each team is different and comprising unique individuals with their own set of capabilities, a common strategy that applies to all instances does not exist. If the defect indicates that team coordination needs improvements, coaching is often the best corrective measure. It is critical to help the team to learn from mistakes and build disciplined preventive measures. Often you will find that discipline is the key, and planning appropriate focused reward systems help the team achieve the objective sooner.

In the traditional approach, silos develop as the teams work independently for more than a reasonable time. They publish the status of their work which is not vetted until the final product integrations are conducted. Again, by the time they engage in getting the product in a symphony, there might be too much contention to manage. Often it is all about getting your piece done and letting others take the fall.

Product Design

Product design is an extremely vital aspect of product delivery that no team wants to get wrong. The product design is akin to the basement and structural reinforcement decisions of a multistoried structure. Layers of software are developed based on the design decisions and eventually become critical as any design decision deviation or reversal will force a significant overhaul of the product solution.

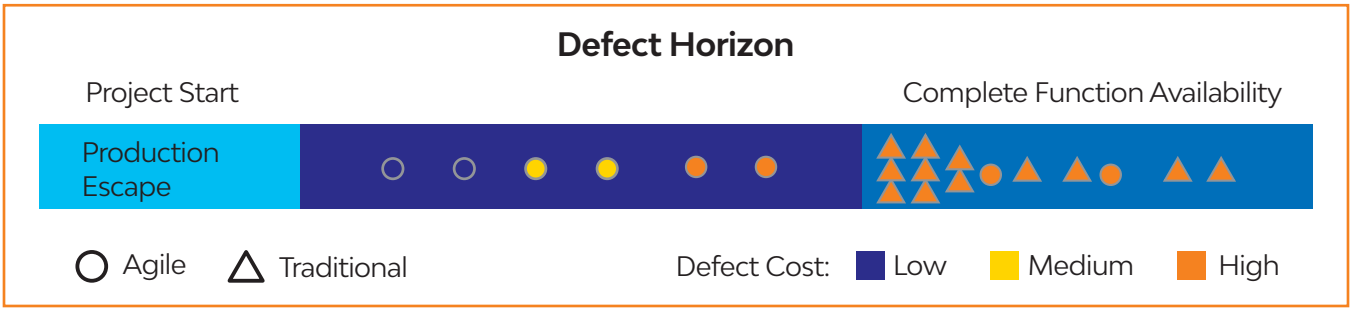


With an agile methodology, it is easier to make corrections early in the project. Typically, by mid-project, team leaders can safely assume that most design decisions have been vetted. When taking a traditional approach to product development, an incorrect design is recognized late in the game, and horrifyingly some are even discovered in the production environment. This is a nightmare situation for any product development. Course correction at this stage can only be done by scrapping the whole or significant part of the product that might not be financially viable. Have you been there? Are your customers still limping?

You have to study defects under a microscopic lens with the team working in tandem to ensure that no design imperfection goes unnoticed. However, design deficiencies may still show up, and an inexperienced team may use a superficial method of correction to introduce heavy design debt further.

Courage is the key. Create an environment where team members speak their minds and clarify insecurities they might have regarding any aspect of the design decision and objectives. Let the team challenge with an open heart and train them to accept constructive feedback with a positive mindset.

Finally, Production Escapes



Summing up, let's talk about defects that escape into the production environment. Your whole product machinery should function to ensure such escapes are avoided. The early visibility of defects empowers you to take corrective measures that enable superior product quality. The best part is that you can confirm if your reaction is aligned with the upcoming defects information. However, when the learnings and values of defects are not realized, it delays course correction, leading you back to traditional incapability.

Conclusion

Today defects and their identification and correction are considered a small part of the development process. Research has found that fixing a defect in the production stage is more expensive and overly complicated than resolving it when seen in earlier development life cycle stages.

With an agile approach, teams focus on fixing defects as early as possible using different techniques to track the phases where the defect was found and where it was resolved. Let defects tell you the story of what needs to improve and how you can do that.

About the Author

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Since 2001, he has been globally architecting solutions by decoding complex business problems ensuring optimum value realization. He also specializes in developing enterprise and application road mapping to help businesses obtain benefits through alignment with their vision. He executed multimillion-dollar global programs in a highly diverse environment and pioneered transformation through digitization and innovation. He led agile adoption by architecting tailored adaptable processes and standards for transforming organizations. He is a proven leader known to inculcate other leaders through servant leadership.