

Gamifying Agile projects to Drive Employee Engagement and Increase Performance

By Chandan Lal Patary

Employee engagement has become a top business priority for every organization. In this rapid cycle economy, business leaders know that having a high-performing workforce is essential for growth and survival. They recognize that a highly engaged workforce can increase innovation, productivity, and bottom-line performance while reducing costs related to hiring and retention in highly competitive talent markets.

Team engagement is key to excellent project execution especially in agile project. After all, stakeholder disengagement is a major reason for productivity loss across function and industries. No wonder, enterprises are willing to know more about some practice which can helpful in better engagement, sharing and collaboration and also how it could add to high-value interactions with customers, employees and partners.

Gamification helps to increase the engagement in fun way. Gartner predicts that more than 70% of the world's largest 2,000 companies are expected to have deployed at least one gamified application by year-end 2014.

This cases study will share the approach team has taken and the improvement team has realized through Gamification. Some of the information have been changed and the original name and figured has been modified. This paper will answer below questions

How can we the get the buy - in from team members?

How can we create more participation?

How can we increase engagement through mechanism like gamification?

How can we achieve targeted business goal with full participation from all members?

1. Introduction

Self-organizing team does not need any game to maintain the passion level; team has reached certain stage where they are self-driven with acceleration. They are empowered and motivated. Every team would like to reach this state. It needs dedicated effort by all team members, consciously to drive the action and get this high level of enlightenment state.

The best architectures, requirements, and designs emerge from self-organizing teams but in team that is already dysfunctional and following agile process to get speed and efficiency will not work.

A self-organized team is empowered by management to make decisions on their own without waiting for management's approval. These teams are usually cross-functional and the roles of individuals are not defined. When the team is given a task, it becomes the responsibility of the whole team, collectively, to finish it, not a specific person on the team.

As we know Gamification is applying the mechanics of gaming to nongame activities to change people's behavior — is an important and powerful new strategy for influencing and motivating groups of people.

Gamification is the process of integrating game dynamics (and game mechanics) into a website, business service, online community, content portal, or marketing campaign in order to drive participation and engagement.

A common implementation of gamification is to take the scoring elements of video games, such as points, levels, and achievements, and apply them to a work or educational context.

The overall goal of gamification is to engage with user and get them to participate, share and interact in some activity or community. A particularly compelling, dynamic, and sustained gamification experience can be used to accomplish a variety of business goals.

2. Building an excellent team

Constructing software remains an activity in which interactions between individuals are paramount. By increasing the quality of interactions between stakeholders and the team, we can reduce accidental difficulties. Unfortunately, we cannot control the stakeholders; they simply are who they are. However, we can organize the makeup of the team. We can easily influence the size, structure, and collaboration model. The easiest way to get a stable foundation is with a well-functioning team. An excellent team builds excellent software. Team effects are reflected in the product.

Through gamification we have tried to improve the situation and built an excellent team. Once we reach the state, sustainability is next level challenge.

3. What are the different game parts we have used?

Gamification Process

Gamification is an interactive process. Gamification involves proper application of “Game Design”, “Game Mechanics” and “Game features” to non-game areas, in this context R&R. The best possible way to begin convincing people to take up and use a new idea is to begin with something simple which is easy to use. At the same time it must be entertaining and fun, and generate a level of interest in people that will make them want to join in and compete

Game Design: Process of creating the rules and content of a game, through the design and application of its Game Mechanics to create Gameplay (overall gaming experience). Understand the current problem areas and design the game to fit into situation.

Game Mechanics: Building blocks that can be applied to gamify any non-game context. E.g. If we have a frequent user popular games like of “Angry birds”, “Subway Surt” we would see that as we progress, we reach various levels, and we finish each levels, we get bonus points, additional chance etc.

Levels: Players are rewarded an increased value for accumulated points. We have added and increased different level of complexity quarter on quarter.

Bonus: Rewarded for Bonus points for achieving some levels. We have rewarded team members in every quarter based on the badge.

Game Features: we have communicated in several meeting about the game background and role and various ways to use the tool.

4. Why to Improve Employee Engagement?

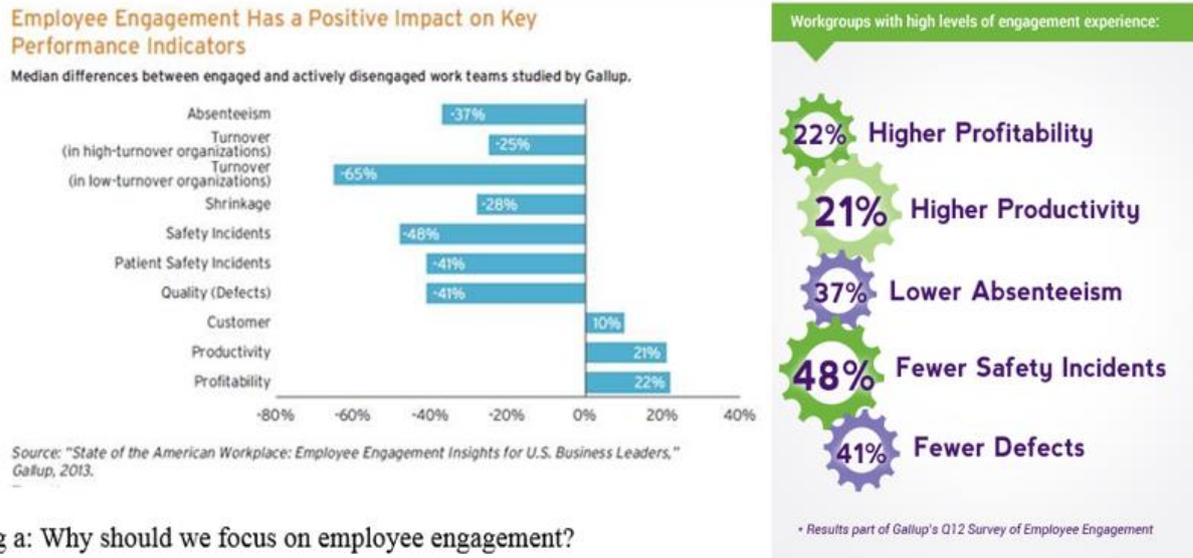


Fig a: Why should we focus on employee engagement?

Fig a, demonstrates with data, why drive is require to increase the employee engagement.

We also know that

- Motivated employees always look for better ways to do a job.
- Motivated employees are more quality oriented.
- Motivated workers are more productive.

Management team has been always working to increase the motivation level and engagement.

5. Why agile project need more engagement?

With agile software development, we tackle uncertainties by searching desirements through an iterative approach. Desirements are engaging; they enable conversations about how to create value. By shifting the focus from talking about the attributes of the solution to stakeholder's desirements, it leads to much more valuable conversations.

Direct stakeholder engagement: involves actively engaging internal and external customers throughout a process to ensure that the resulting deliverables meet their expectations

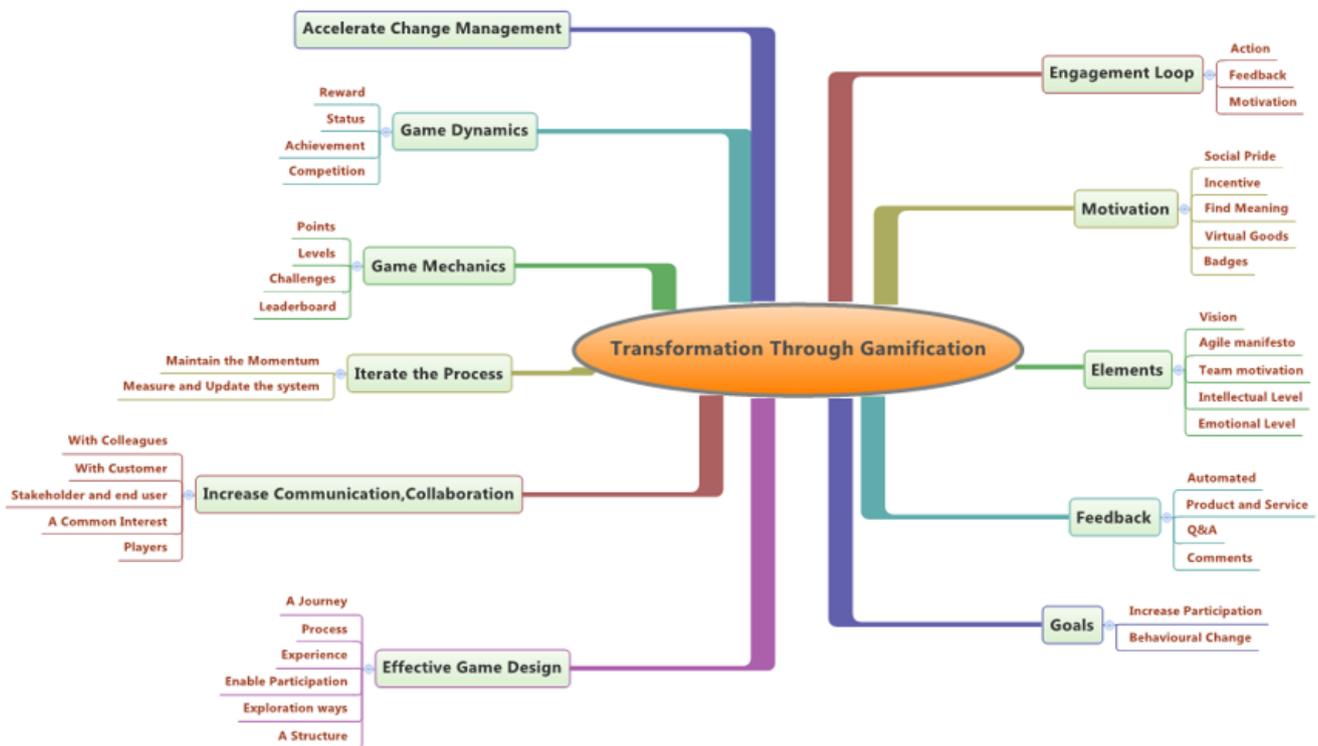


Fig b: Aspects of Gamification which influences engagement

Fig b, demonstrates the different factors need to consider while starting Gamification implementation.

6. Challenges Team was facing?

Some of the issues we were facing:

- How to motivate employees for voluntary participation in programs such as idea management, internal training, feedbacks and surveys?
- How to encourage team members to perform their duties in due course and be proactive? And minimal follow-up?
- How to reward employees for their voluntary contribution towards several organizational community initiatives?
- How to inspire team members to be effective and complete tasks efficiently?
- How to motivate team members to track each and every project activity and update / close them on time?

Our overall objective is to increase agility in the team members. For this we have attempt several approach to bring agility. Leaderboard is the end result or mechanism to quantifiably capture the data and improve wherever require.

SL No	Impediments	Impacts
1	Tasks are not granular (e.g < 24 hrs)	Difficult to measure the Doneness
2	Review's are not happening for Code, test,documents. Need lot of followup	Quality issue at the testing time
3	Too much followup require for anything and everything	Management effort is require to run behind the team members
4	Demo plan is missing , and so unpredictable	Doneness measure and Value generation is a difficult tasks
5	Satic code analysis, Unit test practice rigor was missing	Quality issue at the testing time
6	Improvement of competency in domain and technical area has become a constant observation	Deliverable needs rework
7	Customer engagement was not planned or frequent	Feedback collection was poor
8	Improve productivity through reuse	Faster delivery
9	Acceptance criteria was not elaborate	Test case writing was delayed
10	Test case writing was slow	Test execution delayed
11	Identify more issue from the artifacts	To Improve the product quality
12	Bug resolution time for High severity cases are taking more time	Waste is sitting long time into the system
13	No time for Refactoring	Issue with Quality
14	Product owner is not explaining elaborately about the use cases	Not able to implement as expected, rework is more

Fig c: Triggers for Gamification

Fig c, demonstrates various impediments team has been facing and decide to do something different to address this roadblock



Fig d: Gamification objectives to consider to become more Agile

Team cannot bring agility when they are facing below issues

- How to motivate team members to log each and every activity in team foundation server?
- How to encourage developers to update code, defects, and issues on a timely manner on certain interval with minimal follow-up?
- How to inspire team to follow a process of timely build deployment?
- How to achieve more productivity?
- How to reduce defects per user story/Requirement/Feature?
- How to do code, test reviews done on time?

All these challenges are critical for the success of a project. Adding elements of gamification makes projects interesting and prompts people to proactively manage individual project assignments.

7. Why We Want to Gamify?

We have observed team members would love play different game continuously without any lack of motivation, they are keep playing, they are absorbed into game, and they are engaged. Games are engagement engine.

According to Agile manifesto

- Individuals and **interactions** over processes and tools
- Working software over comprehensive documentation
- Customer **collaboration** over contract negotiation
- Responding to change over following a plan

More emphasis was given on interaction and engaging with team members vs end users. Lack of engagement creates many issues in agile project like team members do not help each other, do not collaborate in decision making process. In absence of proper Stakeholder engagement most agile projects fail. Team needs to increase the engagement direct or indirect. We have felt the need several time and decided do something about it. Direct stakeholder engagement reduces the risk of business requirements not being known; face-to face communication reduces the risk of business requirements not being understood.

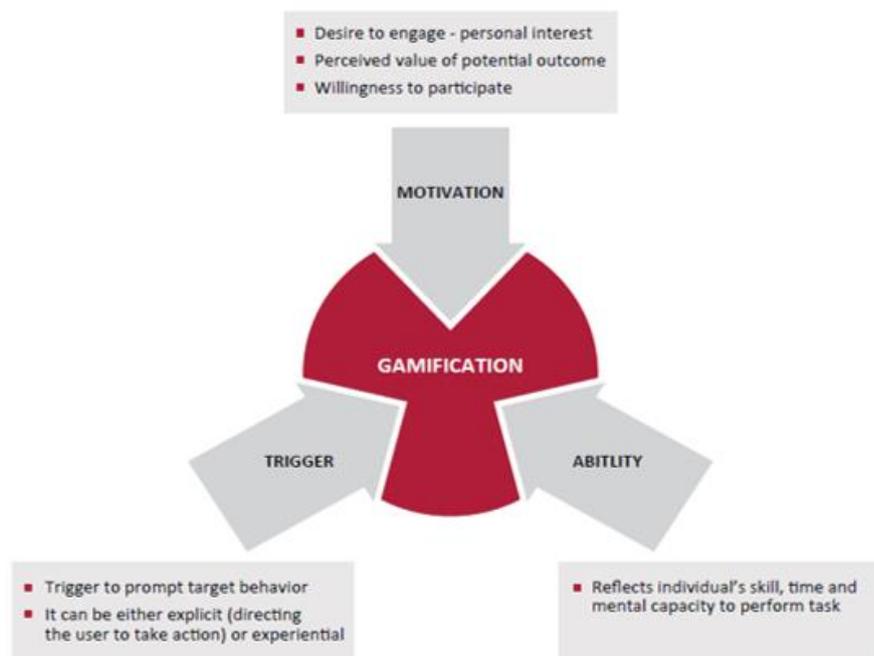


Fig e: Source: Lithosphere, Science of Social Blog –
“Gamification 101: The Psychology of Motivation”

Fig e demonstrates gamification elements and forces which influence the game design.

8. How we gamified the work?

We have used a couple of standard available approaches to design our game theme and solve our problem.

In the 2011 book "Game Frame"- *Aaron Dignan* proposes a very useful "Game Frame" on 1-page which identifies the main components involved in designing a behavioral game.

Aaron offers a useful 9-step process covering:

- Activity
- Player Profiles
- Objectives (ultimate)
- Skills
- Resistance (aka meaningful complexity)
- Resources
- Skill Cycles (and feedback loops)
- Outcomes (short-term goal)
- Play-Test-Polish

Kevin Werbach at Wharton Business School offers a robust 6-step process:

- Define business objectives
- Delineate target behaviors
- Describe your players
- Devise activity loops
- Don't forget the fun!
- Deploy the appropriate tools

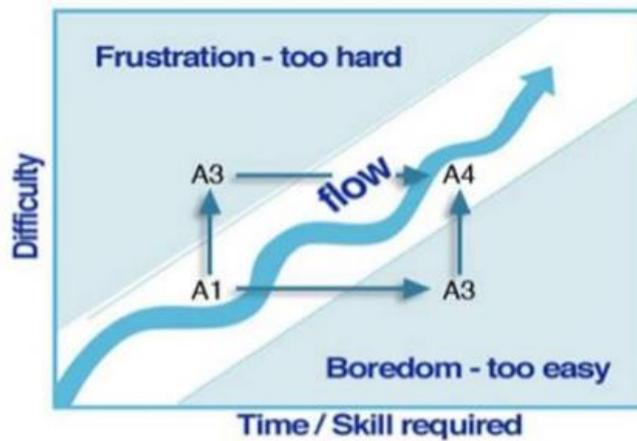
Both frameworks offer different spins/sequencing on a more generic 4-step gamification process,

- Scope out the area and set the business objectives for improvement.
(In our leaderboard team has captured all the factors which team would like to improve)
- Define the changes you want to see in players skills, behaviors and attitudes
(In our leaderboard team has captured all the factors which team would like to improve)
- Profile the players to understand their motivations, preferences, interests and barriers
(Every role team has analyzed and fit into the leaderboard with points)
- Iteratively design, build and test the behavioral game in collaboration with the players.
(Couple of cycle has been run and taken feedback from team)

We have understood the above mentioned process and design our game theme. First with our player, who is our player? The player is at the root of gamification. We have all team members, developer, architect, domain engineer, scrum master, product owner, and project manager as a player. In any system, the player's motivation ultimately drives the outcome. Therefore, understanding player motivation is paramount to building a successfully gamified system. We have spent some time to think about all the team player and what they do on daily basis and develop system through which they can contribute into the overall goal. We have inspired by the Nike+ gamification

“Nike understands that its users want answers to simple sport related questions they have. Even more simply put, as Nike's VP, digital sport Stefan Olander said Nike+: “[...] thrives on the fact that people want credit for their athletic activity”. As such the Nike+ platform gives runners answers to questions like:

- *How fast am I running and am I progressing?*
- *When do I lose momentum when I am running?*
- *How much calories do I burn while running?*
- *How are my friends performing and what does it take to beat them?”*



Mihaly Csikszentmihalyi: *Flow: The Psychology of Optimal Experience*, 1991
Beyond Boredom and Anxiety: Experiencing Flow in Work and Play, 1975

Fig f: Game Design: Keeping the balance

Fig f: We have considered this philosophy while gamifying and maintained the momentum of the team members to play and improve. Our dashboard and feedback mechanism indicates which area players are falling and we have immediate taken corrective action to bring them back to the flow zone. The leaderboard provide immediate feedback through Team foundation server and how the players are performing. We have encouraged all the players to participate, week on week they can see the score through Team foundation Server and improve the weak areas. We discuss about the progress and inspire team members to actively increase the points. In monthly one to one discussion we discuss with each player how they are playing and what need to improve.

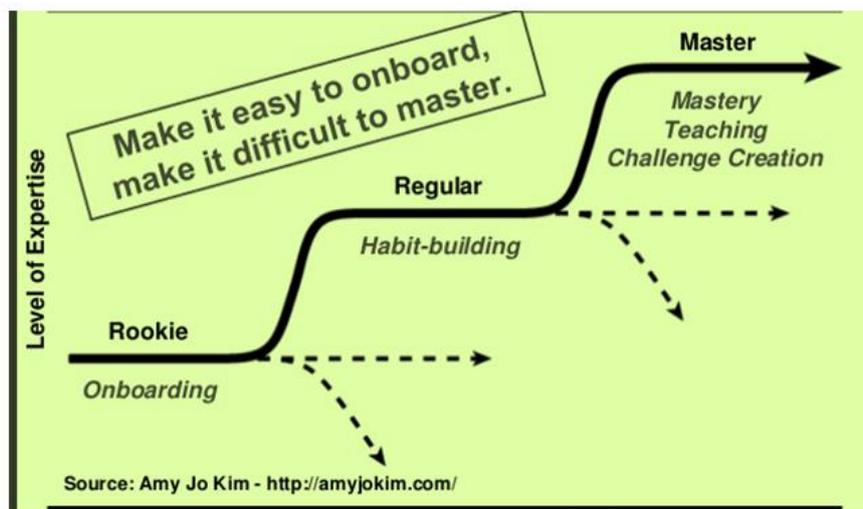


Fig g: Game design journey: Skill Level

One of our architects has already mastered the flow, as he has discovered and finished most the factors and achieved the path very smoothly. We encourage most of our team members to reach the similar state.

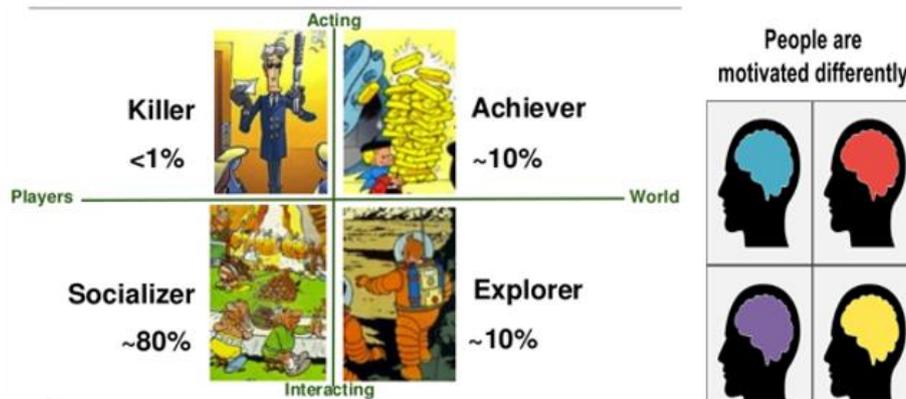


Fig h: Why team members are playing: Bartle’s Player Types

We have practically experienced the Bartle’s concept, most of our team members are expecting highest points to socialize. We also broadcast always the result into different organizational intranet social network sites to motivate all the players. Games are social in nature; every player would like to participate as we are social animal. The most challenging part is to get the players back into the game! This is why we have constant innovation of ways to think.

Players	February								
	Tasks Achievemnet points	Demo achievements points	Knowledge share points	Resuable artifacts points	Quality Improvement points	Total points	Total STAR	Badge	Remark
Shashi	100	100	100	100	100	500	🌟	🏆	Excellent demo
Kanu	100	100	100	100	100	500	🌟	🏆	Excellent demo
Pala	100	100	100	100	100	500	🌟	🏆	Excellent demo
Chandan	100	100	100	100	100	500	🌟	🏆	Excellent demo
Susan	100	100	100	100	100	500	🌟	🏆	Excellent demo
Amrutha	100	100	100	100	100	500	🌟	🏆	Excellent demo
Sunanda	100	100	100	100	100	500	🌟	🏆	Excellent demo
Subhashish	100	100	100	100	100	500	🌟	🏆	Excellent demo
Abhijit	100	100	100	100	100	500	🌟	🏆	Excellent demo
Munai	100	100	100	100	100	500	🌟	🏆	Excellent demo
Ashish	100	100	100	100	100	500	🌟	🏆	Excellent demo
Jaite	100	100	100	100	100	500	🌟	🏆	Excellent demo
Nirmal	100	100	100	100	100	500	🌟	🏆	Excellent demo
Sujay	100	100	100	100	100	500	🌟	🏆	Excellent demo
Sharthak	100	100	100	100	100	500	🌟	🏆	Excellent demo
Soumita	100	100	100	100	100	500	🌟	🏆	Excellent demo
Lohitaksha	100	100	100	100	100	500	🌟	🏆	Excellent demo
Ishi	100	100	100	100	100	500	🌟	🏆	Excellent demo
Koyal	100	100	100	100	100	500	🌟	🏆	Excellent demo
Munni	100	100	100	100	100	500	🌟	🏆	Excellent demo
Dhruba	100	100	100	100	100	500	🌟	🏆	Excellent demo

Fig i: Sample Leaderboard for our team

Fig i, demonstrates our initial design of the game theme. All the problems we as a team were facing, we have addressed through daily work and improved with game approach. e.g. “Task achievement Points” – deals with encouraging planning activity by each team members and granularizing of the user stories and tasks.

What we are expecting our player to do is, all the work we are doing on daily basis, convert those into fun and game. We keep playing and demonstrate our progress as a team level, as well individual level. We will the prize based on the contribution. Players will keep playing as game dynamics will keep changes. We convert everything into point wherever applicable. Human mind likes see number e.g. “10,000 likes” on our own photo!

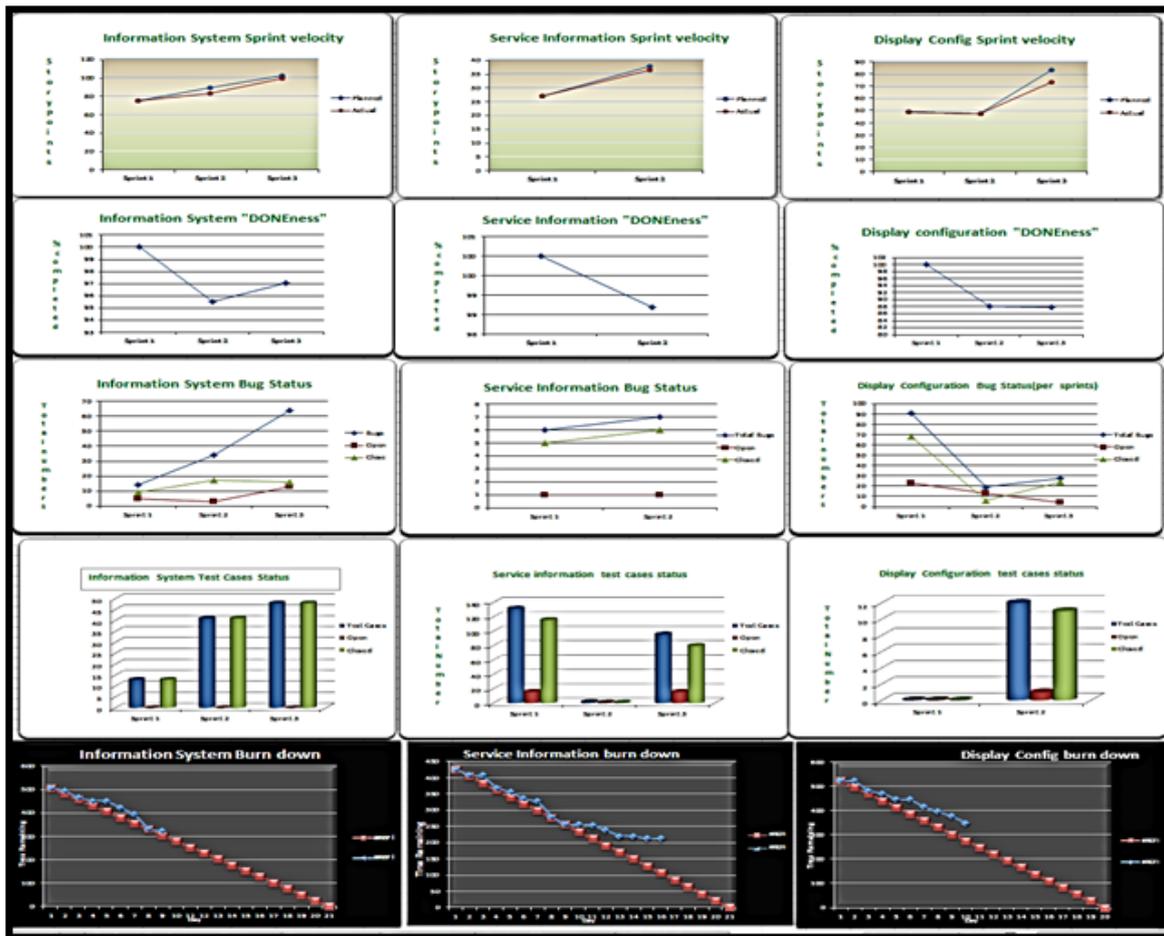


Fig j: Healthy competition among teams: Leaderboard

Sample leaderboard for the team where each team is demonstrating the improvement. Sprint on sprint team is achieving the mastery. There is a healthy competition, for growth, for producing quality output.

Research shows that when numbers are properly framed, ordinary people are more capable of handling them than many medical professionals assume.—Thomas Goetz
 Data has to talk about all the team members to take corrective action.

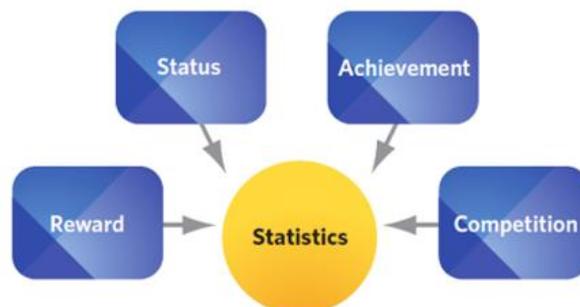


Fig k: Leaderboard contents

The leaderboard should display the statistics of the all these four dimensions showing in Fig k. We are getting much feedback from the team members to improve the game theme.

Players	August											
	Tasks Achievement points	Demo achievements points	Knowledge share points	Reusable artifacts points	Quality Improvement points	Idea Generation	Cultural Event	NPS Rate >9	Total points	Total STAR	Badge	Remark
Shashi	100	100	0	0	200	0	0	0	400	🌟	🏆	
Kanu	0	0	0	0	100	0	0	0	100	🌟	🏆	
Pala	0	100	0	0	0	0	0	0	100	🌟	🏆	
Chandan	100	0	0	0	0	0	0	0	100	🌟	🏆	
Susan	0	100	0	0	0	0	0	0	100	🌟	🏆	
Amrutha	100	0	0	0	0	0	0	0	100	🌟	🏆	
Sunanda	0	100	0	0	0	0	0	0	100	🌟	🏆	
Subhashish	0	0	0	0	0	0	0	0	0	🌟	🏆	
Abhijit	0	0	0	0	0	0	0	0	0	🌟	🏆	
Munai	0	0	0	0	0	0	0	0	0	🌟	🏆	
Ashish	0	0	0	0	0	0	0	0	0	🌟	🏆	
Jaite	0	0	0	0	0	0	0	0	0	🌟	🏆	
Nirmal	0	0	0	0	0	0	0	0	0	🌟	🏆	
Sujay	0	0	0	0	0	0	0	0	0	🌟	🏆	
Sharthak	0	0	0	0	0	0	0	0	0	🌟	🏆	
Soumita	0	0	0	0	0	0	0	0	0	🌟	🏆	
Lohitaksha	0	0	0	0	0	0	0	0	0	🌟	🏆	

Fig 1: Leaderboard complexity, added new levels of challenges.

Fig 1 demonstrates the upgraded version of the leaderboard (feedback board) where team has more challenges and levels to achieve.

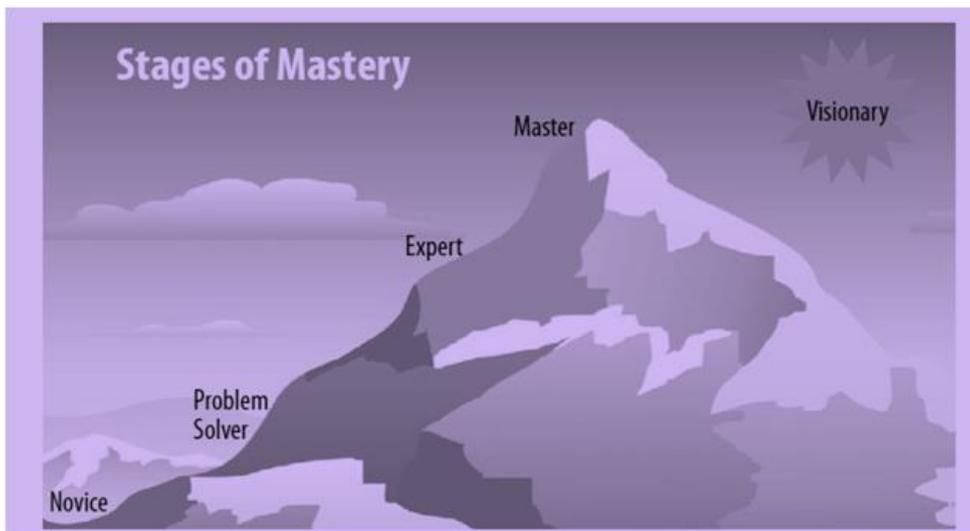


Fig m: Mastery of a system can be thought of as a mountain-rising from novice to visionary across a series of steps

Fig m concept we have injected into the game theme based on our project need. We have introduced all types of challenges into the game. To achieve visionary status someone has to put dedicated multi facet effort.

Demo weight	100	Scrum master/PO			
	200	Customer/External			
Code review, unit test, static code analysis	200	TFS to check			
Finding Bugs	100 points	1-10 bugs	from review, test etc		
	100 points	Critical bugs(1-5)			
	100 points	1-10 test cases			
Task Execution timeline	100	on time			
	Minus (- 50)	delayed			
Knowledge share	200 points				
Idea Generation	500 points	1 - idea approved and Linked to Knowledge share			
Reusability	1 hr = 10 points				
Tasks weight	100 points				Granular work(8 hrs), >10 tasks
	50 points				<10 tasks
	500 points	1 STAR			
	5 STAR	1 Badge			

Fig n: Game rules, mutable Levels

Fig n demonstrates the various game rules we have injected to run the game, e.g. we have encourage team members to provide more frequent demo so that we can improve by getting early feedback. It was very minimal last year, this year we have seen the increasing trends.

To increase the individual competency we have encourage team members to share latest technological trend or any other value added knowledge to team. In process of doing so individual will gain tremendous knowledge and confidence.

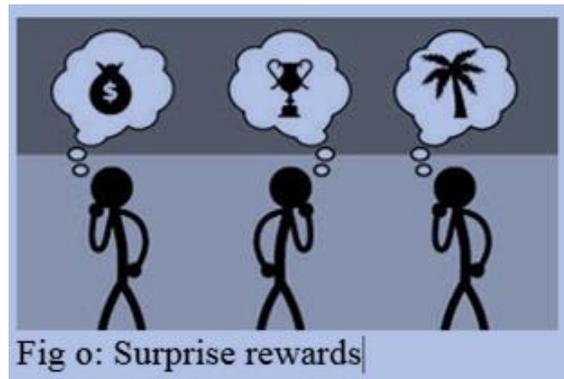
To improve the productivity we were asking team to find, create, share and use reusable artifacts and demonstrate the savings of effort.

To drive the innovation we have added new idea points.

9. Celebration

Daniel Pink, in his book Drive, defines what he calls the three elements of motivation. The first element is autonomy— our desire to be self-directed. The second element is mastery— our desire to make progress and get better at what we do. And the last element is purpose— our desire to be part of something larger than ourselves. Our reward system was also thought through.

We as Team celebrate every quarter based on the highest point. We call for small get together and celebrate the winner and provide spot award. Every six month we reward and recognize the winner with a team lunch. Month on month we have created this as a journey and experience, we would like to improve the experience. Month on month we send appreciation letter to the person who is contributing in most of areas. We have declared an iPad once, when someone covers all the dimensions in the leaderboard table and got the highest points. We broadcast this type of information to our internal social networking site (Yammer).



10. Side effects

What we have been observing issue with shared resource in the team. As competition increases to do more, there are conflicts with the shared resource and assignment. We want to improve the overall team engagements, dynamics and various other weak areas.

11. Gamification Design as Agile Way

Better systems are built with iteration and feedback. In truth, agile and gamification have a lot in common—they both profess that any concept in a system requires repeated testing. As stated correctly, no gamified system can be built with a set-it-and-forget-it mentality. It doesn't work because players level out, get bored, game the system, or leave it altogether. We have refined our system as an incremental way. In an agile design, prioritization is similarly important as it helps narrow the designer's focus to a limited number of specific items. Initial leader board of ours was very simple few point were introduced later we have increased the level and injected the complexity. Agile design looks for the minimum viable product before launch—what the designer and target consumer need now—knowing they can change it later. Every month we try to change some of the other aspect into the system.

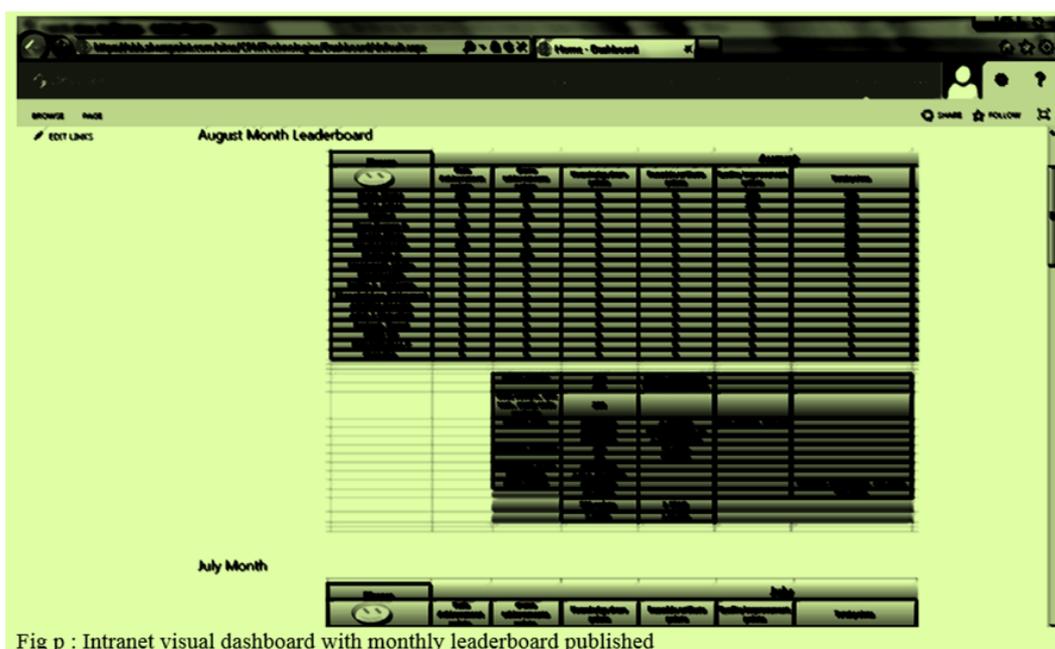


Fig p demonstrates the intranet portal team is using as a display leaderboard (feedback board). Month on month we are publishing the score and broadcasting the winners. Daily data is available in Team foundation server.

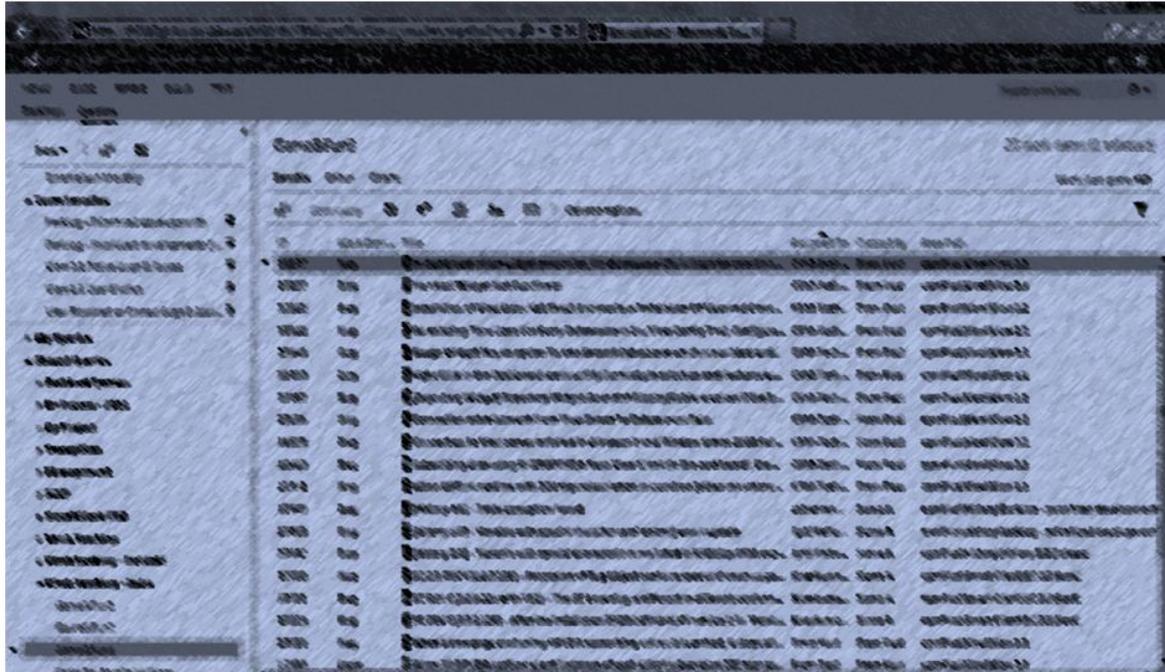


Fig q: Microsoft Team Foundation Server is the database to store all information and record related to game

Fig q demonstrates the database the team has been using to plan- do – check- act different types of activities. These data are collected at monthly level and uploaded into the intranet site demonstrated in Fig p.

Each user can verify their own points and progression from Team Foundation Server dashboard which is a continuous feedback channel for all team members for correction and improvement. Team foundation server-2013 is much advance and developer friendly which helps us to deploy gamification related queries easily.

12. What was the result?

We have found multidimensional benefit through game like operating model

- Individual Planning and resultant into team planning are now more efficient
- People are build competency where we observe gaps
- Problem solving is faster due to competition
- We know each player who is performing and improving
- Sharing and getting feel good factor
- Collaboration has increased
- Exploration mindset
- Product quality has improved
- Customer recognition observed

13. Conclusion

The goals of our game are what the game is about; they are what attract people. Rules define how players go about achieving the goals; they are the challenge of the game. And feedback systems are the user interfaces that engage the players. They present a continuous flow of information that shows people how they are doing and whether they are getting closer to or further from accomplishing the goals. The right combination of these three traits is what induces voluntary participation. We have been driving these concepts and achieving the result.

What we have observed is that there are several significant improvements in our operational statistics. Our team productivity and quality data have improved. And we are expecting to find something similar in upcoming days.

Extra Miler Award!! Team has received special award to deploy gamified approach and has shown the improvement.

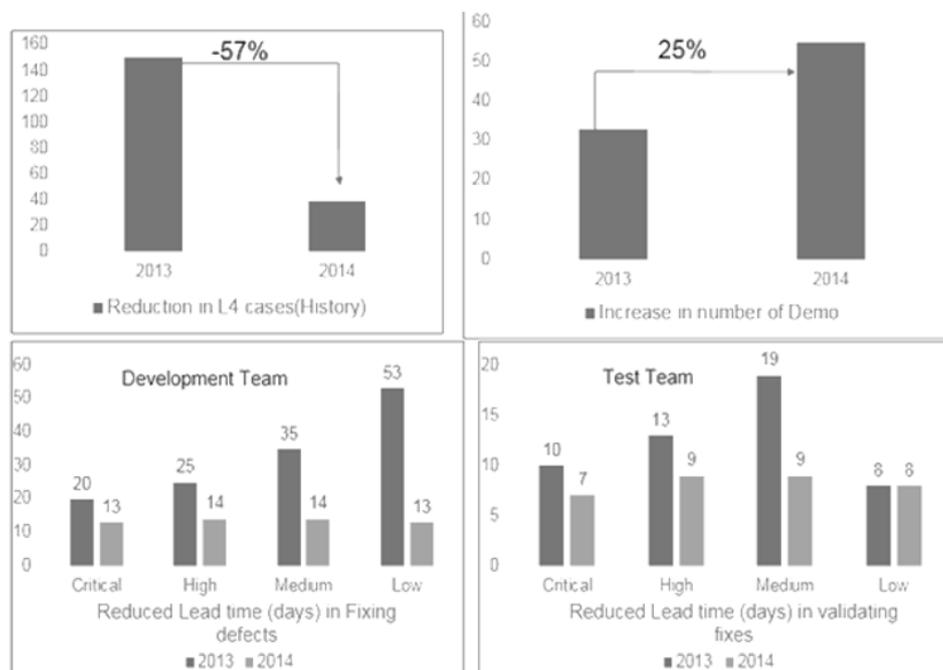


Fig r: Few improvement items team has realized

Team Foundation Server team dashboard shows every month highest points receiver, winner and separate website also shows the achievement. We have improved through gamification:

- Demo frequency and effectiveness
- Sprint Velocity points
- Bug identification at early stage
- Reusable component
- Lead time reduction
- Customer participation and NPS rating

Improvements are ongoing and we are continuously changing the game theme and progressing.

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