

Gamification at Work: Designing Engaging Business Software

Janaki Kumar

3410 Hillview Ave., Palo Alto, CA, 94304, USA
janaki.kumar@sap.com

Abstract. Gamification is a buzz word in business these days. In its November 2012 press release, Gartner predicts that "by 2015, 40% of Global 1000 organizations will use gamification as the primary mechanism to transform business operations". In the same report, they also predict that "by 2014, 80% of current gamified applications will fail to meet business objectives, primarily due to poor design".

What is gamification? Does it belong in the workplace? Are there design best practices that can increase the chance of success of enterprise gamification efforts?

Janaki Kumar answers these questions and more in this paper Gamification @ Work. She cautions against taking a "chocolate covered broccoli" approach of simply adding points and badges to business applications and calling them gamified. She outlines a methodology called Player Centered Design which is a practical guide for user experience designers, product managers and developers to incorporate the principles of gamification into their software.

Keywords: Gamification, Enterprise Gamification, Gamification of business software, enterprise software, business software, User experience design, UX, Design, Engagement, Motivation.

1 Introduction

"The opposite of play is not work, it is depression"

– Brian Sutton-Smith

This paper covers the intersection of the worlds of enterprise software and gamification.

Enterprise software refers to software that businesses use to run their day-to-day activities such as finance, sales, human resources, manufacturing, shipping, and procurement. It is typically purchased by companies as off-the-shelf software, customized and configured to meet their business needs, and made available to their employees. Enterprise software provides visibility to executives regarding the health of their organization and enables them to make course corrections as needed.

Gamification is the application of game design principles and mechanics to non-game environments. It attempts to make technology more inviting by encouraging

users to engage in desired behaviors by showing the path to mastery, and taking advantage of people's innate enjoyment of play.

Gamification is a buzzword in business these days. Both Fortune Magazine and Wall Street Journal have noted this trend in late 2011. In its November 2012 press release, Gartner predicts that "by 2015, 40% of Global 1000 organizations will use gamification as the primary mechanism to transform business operations"¹. M2 Research predicts that the gamification market will reach 2.8 billion dollars by 2016².

There are many reasons for this trend. To name a few, the changing nature of information work, entry into the workforce of digital natives³- a new generation that has grown up playing online and video games, and the wide spread adoption of social media and mobile technology. Businesses are turning to gamification both to engage their customers and to motivate their employees.

As with any innovative trend, best practices are still emerging. This paper explores the application of design best practices to gamification to increase the chance of success. It outlines a process called Player Centered Design, which offers a five step approach to gamification that works.

2 Beyond User Centered Design

Designers who adopt the user centered design philosophy in their daily work, pay attention to the user's goals, and strive to build products that help the user achieve them in an efficient, effective, and satisfactory manner.

While effectiveness, efficiency, and satisfaction are worthy goals, gaming and gamification extends and adds increased engagement to these goals. In the context of a game, players voluntarily seek challenges to enhance their playing experience. They seek empowerment over efficiency, delight, and fun over mere satisfaction. These factors increase their level of engagement in the game.

3 Player Centered Design Process

To help designers deal with these changing rules and rising expectations, we introduce a concept called Player Centered Design that puts the player at the center of the design and development process. The figure below illustrates the process of Player Centered Design.

3.1 Understand the Player

The first step in the player centered design approach is to understand the player and their context. The success of your gamification efforts depends on this clear understanding.

¹ Gartner November 28th Gamification Trends and Strategies to Help Prepare for the Future. Burke. B.

² M2 Research Fall 2011: <http://www.m2research.com/>

³ http://en.wikipedia.org/wiki/Digital_native

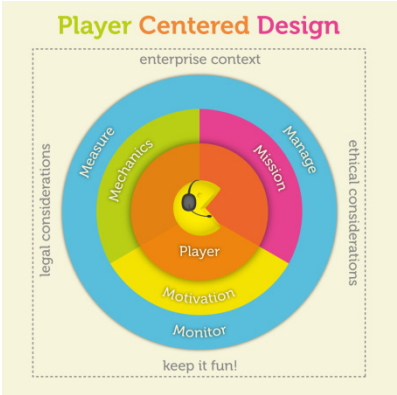


Fig. 1. Player Centered Design Process

Is your player a sales representative, a financial controller, an employee, a supplier, or a customer? Identify them and understand as much as you can about them.

Fig 2 provides a template to capture the multi dimensionality of the player, since this has a direct impact to their gamification preference.

Fig. 2. Player persona template

3.2 Understand the Mission

The next step is to define the Mission. This step involves understanding the current business scenario (what players are doing today), identifying the desired or target business outcome (what management wants to achieve), and setting an appropriate mission for your gamification project.

3.3 Understand Human Motivation

“Gamification is 75% Psychology and 25% Technology.”

– Gabe Zichermann

There are two general types of motivations: intrinsic and extrinsic. Intrinsic motivation refers to internal motivations such as autonomy, mastery and meaning. Extrinsic refers to external motivational techniques such as money, trophies etc.

There are a number of theories of human motivation. We recommend you familiarize yourself with the latest research on motivation in order to create effective game mechanics.

Motivational drivers, discussed below, have applicability beyond digital technology. They are based on observations on what motivates people in the real world, and drawing from this knowledge to design engaging experiences in the virtual world.

Here is a curated list of behaviors that drive motivation.

Collecting

We enjoy collecting – trading cards, coins, stamps, antique wristwatches, cars or friends on Facebook. Some collections may have monetary value, e.g. trading cards. While other collections may be symbolic of social status, e.g. friends on Facebook. Once we get started on a collection that comes in a “set”, we have the urge for “Set Completion”. If the set is infinite, we are motivated to keep collecting for the joy it brings us. In some cases, we may compare our collections to others and feel the urge to compete.

Connecting

We long to be part of something larger than ourselves. This could mean connecting to other people to be part of a community, or connecting to a cause to be part of something larger and meaningful. We join clubs of various sorts to connect with people like us and have meaningful shared experiences. It validates our existence and makes life more enjoyable.

Achievement

We get great satisfaction from achievement, no matter what our Bartle player profile. If we are challenged, we are more likely than not, motivated to try hard to achieve success. When we do, we get a positive psychological feedback that makes us want to do it again. There are some subtle factors to pay attention to. If the challenge is too difficult or too easy, we may not be as motivated by achievement, as we would be if the challenge is the just right level of difficulty.

We do not expect to win every time. A variable schedule of achievement or a chance to win may be enough of a motivator to make us try. Lottery players play for the chance to win even if they know intellectually that the odds of winning are not high.

Feedback

We like to receive feedback. This could be as simple as the small nods we get when we talk to people. It communicates “I heard you. I am paying attention. What you are saying is worth listening to”. It motivates us to continue talking to this person. A digital example is Amazon sending us an instant confirmation email when we place an order. It communicates “We received your order. It is safe with us”. It enhances our sense of security and wellbeing.

Not receiving any feedback can be extremely demotivating. If you were talking to someone and they remained impassive, you will eventually stop talking, since you are not sure if the other person hears you or understands you. Software that gives you no feedback when you perform an action is significantly less enjoyable to use than one that does.

Self-Expression

We are entering an era of hyper-personalization enabled by technology. Companies like Nike are offering customers the ability to specify the exact size, features, colors, and style of their shoes. Players of online games spend time customizing their avatars, from eye and skin color and body shape to accessories like earrings, hats and gloves, to control how they are viewed by other players.

Reciprocity

Many of us have had the experience of walking into a store, accepting a “free” sample, and feeling compelled to make a purchase out of a sense of reciprocity. Organizations such as the March of Dimes, Cystic Fibrosis Foundation, World Wildlife Fund, Easter Seals and the American Diabetes Foundation send free address labels to potential donors to leverage this motivational driver as a fund raising technique.

Blissful Productivity

Mihaly Csikszentmihalyi (pronounced MEE-hy CHEEK-sent-me-hi-ee), a distinguished professor of Psychology and Management at Claremont Graduate University. He is the director of Quality of Life Research Center and has done pioneering work researching human strengths such as optimism, motivation and responsibility. He defined the concept of Flow as “The mental state of operating in which a person in an activity is fully immersed in the feeling of energized focus, full involvement and the success in the process of the activity”. When a task is too difficult, it causes people to be anxious. When a task is too easy, it causes boredom. When the task is just right, we are in a state of heightened focus and immersion, or in other words a state of Flow.

Video game players experience this sense of flow when the game is the right level of difficulty for their skill. Games offer levels so users can graduate to increasing difficulty levels as their skills improve. Business software can benefit from incorporating the concept of levels to enable their users to achieve this sense of flow.

3.4 Apply Game Mechanics

Armed with a clear understanding of the player and the mission, and the theory behind human motivation, it is time to apply game mechanics, and create a positive flow for your gamification project. Game mechanics refer to the UI elements player interacts with such as badges, points and leaderboards to name a few. Here are a list of game mechanics relevant to enterprise software.

Points

Points are the granular units of measurement in gamification. They are single count metrics. This is the way the system keeps count of the player’s actions pertaining to

the targeted behaviors in the overall gamification strategy. For example, FourSquare counts each check in, and LinkedIn counts each connection.

Points provide instant feedback to the player, and thus address the feedback motivational driver. Players may also be motivated by collection, to see their points count go up.

Badges

Once the player has accumulated a certain number of points, they may be awarded badges. Badges are a form of virtual achievement by the player. They provide positive reinforcement for the targeted behavior.

Foursquare awards badges, when the player has accumulated enough check-ins. Another example of a badge is eBay's top seller virtual "ribbon".

Badges address the motivational driver of collection and achievement.

Leaderboards

Leaderboards bring in the social aspect of points and badges, by displaying the players on a list typically ranked in descending order with the greatest number of points at the top. The possible disadvantage of a leaderboard is that it could be demotivating to a new player. For example, if player A has 10,000 points, and is on top of the leaderboard, and a new player B had 10 points and is at the bottom, it is likely that player B may become demotivated and give up playing the game. They may believe that they are never going to compete with player A, and therefore why should they even try?

Foursquare has a modified leaderboard into a cross-situational leader board. This variant places the logged-in player in the center and shows similar scoring fellow players above and below for context. The ranking (points) is limited to a set of players who are close to the logged-in player. The goal with this variant of leaderboard is to motivate the player to compete with the players closest to them. Note that, a cross-situational leaderboard may be different for each player since it is limited to their context. It does not convey an overall ranking of all players.

The achievement motivational driver is addressed via a leaderboard.

Relationships

Relationships are game mechanics based on the motivational driver of connection. We are social beings, and relationships have a powerful effect on how we feel and what we do.

Peer pressure is not restricted to school age children. Adults succumb to it too. In 2010, the authors did research on personal sustainability and one of the findings was that a trusted person in a participant's network had more impact on their day-to-day choices than the media. For example, participants were more likely to recycle if a trusted member of their community did so, than if they were told to do so by the media.

Relationships reduce stress in people and are positive motivators. People who are trying to quit bad habits such as alcoholism, or deal with a loss of a loved one have found support groups to offer emotional support and encouragement during a time of

need. In the technology world, developer communities are a good example of a support group for developers where they offer and receive technical help.

Relationship addresses the motivational driver of connection.

Challenge (with Epic Meaning)

Challenge is a powerful game mechanic to motivate people to action, especially if they believe they are working to achieve something great, something awe-inspiring, and something bigger than themselves.

Scientists at the University of Washington challenged the public to play Foldit – a game about protein folding. Folding proteins provides important clues to the scientists on how to prevent or treat diseases such as HIV/AIDS, cancer and Alzheimer's. A team of experts had worked on this problem for over 10 years and had not solved it. Once the scientific challenge was launched in the form of a game, 46,000 volunteer players solved the puzzle in 10 days.

The challenge game mechanic addresses the achievement motivational driver. However, in the case of the Foldit challenge, the feeling of connection and perhaps reciprocity, (if the player had known someone dear to them suffering with the illness the challenge was seeking to cure) may have played a part in its overwhelming success.

Constraints (with Urgent Optimism)

Interestingly constraints such as deadlines, when combined with urgent optimism, motivates people to action. Urgent Optimism refers to extreme self-motivation. It is the desire to act immediately to tackle an obstacle combined with the belief that we have a reasonable hope of success.

Some registration sites use gamification to reduce the drop off rate by limiting the amount of time the user can take to complete the registration process.

Gilt, a fashion ecommerce site, constrains the time allowed for their customers to bid on items to motivate them to action.

Players are motivated by achievement when they are faced with these constraints and are driven to overcome them.

Journey

The journey game mechanic recognizes that the player is on a personal journey and incorporates this element into the experience. Here are three examples of implementations of this game mechanic.

Onboarding

A new player needs to be on boarded since they are just starting the journey. Offering help, and a brief introduction to the features and functions motivate the player to embark on the journey.

Scaffolding

Scaffolding is a way to help the on-boarded, but yet inexperienced user, prevent errors and feel a sense of positive accomplishment. A product could progressively disclose more features as the player gains more experience using the product.

Progress

Progress refers to providing feedback to the user on where they are in the journey, and encouraging them to take the next step.

Journey addresses the player's need for blissful productivity, by presenting the right set of features appropriate to the player's level in the game.

Narrative

The narrative game mechanic draws the player into a story within the game. *Zombie Run*, a fitness game, uses narrative to make the player believe that zombies are after them, and they need to run as fast as they can to get away. The object of the game is to motivate the player to get fit without making it explicit.

Narrative offers the player a chance to express themselves via role play. In the case of *Zombie run*, players are motivated by achievement by out-running the zombies.

Emotion

As Don Norman eloquently argues in his book *Emotional Design*, our emotions do play a role in how we experience a product.

In many ways, emotional design is a large category in and of itself. In the context of gamification, we are not attempting to cover the topic as a whole. Rather, we want to draw inspiration from it, to enrich our gamification designs.

Game designers have led the way in investing in high quality artwork that appeal to our emotions in their products. Consumer products (iPhones, iPads) and websites (Pinterest) are following this trend. Employees experience emotional delight in the consumer software they use, and have similar expectations with enterprise software.

Humor is another emotion pertinent to game mechanics. The tone of the product can be conveyed in the micro-copy, or the informational text and messages on the user interfaces. Humor has the power to deflect a negative experience into a (some-what) positive one.

Humorous micro-copy addresses the motivational driver of feedback. While people may choose to use esthetically designed products as an avenue of self-expression.

Game Economy

Garner describes game economy as follows:

There are four basic currencies that players accumulate in game economies — fun, things, social capital and self-esteem — that are implemented through game mechanics, such as points, badges and leaderboards. These game mechanics are simply tokens of different currencies of motivation that are being applied to reward players.

As part of the game plan, you can decide the mechanics you want to use as currencies in your game economy.

3.5 Game Rules

Once you have decided what mechanics to use, the next thing is to come up with a set of rules of the game. If you are designing a system to motivate call center employees to undergo training, and you decided to use points in your game economy, you will need to decide how many points you award for the action. If the employee only took 50% of the training, do they receive all the points, none of the points or 50% of the points?

The rules of the game pull together the mechanics into a flow to motivate the player to achieve the mission.

3.6 Engagement Loop

The core engagement loop refers to game mechanics combined with positive reinforcement and feedback loops that keeps the player engaged in the game. This concept has been discussed by both Amy Jo Kim, a renowned game designer.

The four main stages in the loop are:

- Motivate emotion,
- Call to action,
- Re-engage,
- Feedback and reward.

This frequent invitation to interact with the system creates positive reinforcement and the player will be motivated to stay engaged.

3.7 Manage, Monitor and Measure

Gamification is a program and not a project. Therefore, it is important to start small, closely monitor progress, and adjust as needed. The mission needs to be managed, the motivation needs to be monitored, and mechanics need to be measured continuously.

3.8 Other Considerations in the Enterprise Context

There are many legal and ethical considerations that impact gamification in the context of the enterprise. Privacy and worker's protection practices vary across countries, and what may be legal in one country may not be in another.

The ethics of gamification need to be considered as part of any project. Gamification can be used to engage and motivate, and never manipulate.

The ultimate goal of gamification is to engender positive emotions in the player such as fun, trust and delight. It is important not to forget this when working on the serious aspects of gamification.

4 Conclusion

In this paper, we present a process of gamification, which we call Player Centered Design. It is inspired by User Centered Design, but goes beyond UCD to incorporate the concept of engagement. The process begins with a good understanding of the player, and the mission. This is followed by psychological research on motivation. Based on this solid foundation, we advocate a thoughtful application of game mechanics, economy and rules to create a core engagement loop. We recommend you start small, monitor closely for best results. The enterprise context including legal and ethical considerations cannot be ignored. And remember to make it fun!