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**Gamification as Strategy in Business Context:**

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**A Literature Review***Bhisaji Surve<sup>1</sup> & Dr. B.R.Londhe<sup>2</sup>**<sup>1</sup>NMIMS University, Mumbai**<sup>2</sup>Amity School of Business Management, Mumbai***Email ID-editorcassstudies@gmail.com****ABSTRACT**

“Game Thinking” can be a common line of thinking in most of the modern human being irrespective of he / she is educated or not. Hence there is strong link establish between game like environment to that of work environment ; there are variety of means to address the relation between game and business in the aspects of human behavioral science. Game like thinking in non- gaming context especially with help of technology tools is known as “Gamification”. Millennials (Generation which is presently a major part of work force and they are future of business leads. Hence gamification can be the best suit to address and to connect this generation in most effective means. This paper explore various business oriented applications of Gamification through literature review. First part of paper take through psychological frame work of gamification. Secondly, paper develop construct with human psychology to gamification which can be utilizes in business environments. Paper mainly focused gamification in four core aspects of business as 1) Marketing 2) Human Resource 3) Process improvements 4) Education/Training.

**Keywords**—Gamification, Human Resource, Game dynamic, Game mechanics (key words)

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## INTRODUCTION

As per United Nations statistics Indian median age in 2020 will be 28 years and 30 years by 2025. Hence India is young nation by demographic dividend. This is a great advantage in itself provided we can channelize this youth energy in appropriate manner to our advantages. Youths are going to play important role in near future Business economy. Engaging these young generation in most effective means to produce more efficient throughput as a whole is great challenge in itself faced by many Business. In this digital world, Generation Y—the first to grow up with the Internet and smartphones and it can be a great technological blessing but at the same time can be curse in itself if not use appropriately.

These young human resource can be well communicated via mechanisms which imitate the personalized, competitive and socially connected world of Gaming which emulate environment for Non-gaming business context. The basic idea behind gamification is to design game elements which provides power to people such that it can transform their working, their relation with products, people, services, policies and their behavior can be monitored, tracked and modelled within gamified virtual space.

## GAMIFICATION AND BUSINESS

Gabe Zichermann (2010) defines gamification as —the process of using game thinking and game mechanics to engage participants and solve problems.

Game mechanics and dynamics design elements can be used in modern business practices to measure, influence and reward targeted user behaviours which may be customer or employees. It takes the essence of the game characteristics like-goals, rule playfulness, elements of fun feedback, reward and promotions applies them to solve the real world business problems. Gamification can be useful tool to gain insight into customer, employee behaviour and activities across various touch points like website, mobile app., and social web site [1].The gamification approaches need to be targeted where there is significant demand in markets or employee groups where Generation Y predominates [2].

## PSYCHOLOGICAL FRAME WORK FOR GAMIFICATION

### Self Determination Theory

As per this theory people are not motivated just by means of rewards or punishment, but are more effectively motivated through three core elements as: Competence, Relatedness and Autonomy.

**Competency** is the need to get feel of self-mastery and efficacy. **Relatedness** is a social aspect where individual like to be interacted, be connected and be caring for each other. **Autonomy** is the essentially a control of own choice about one's life.

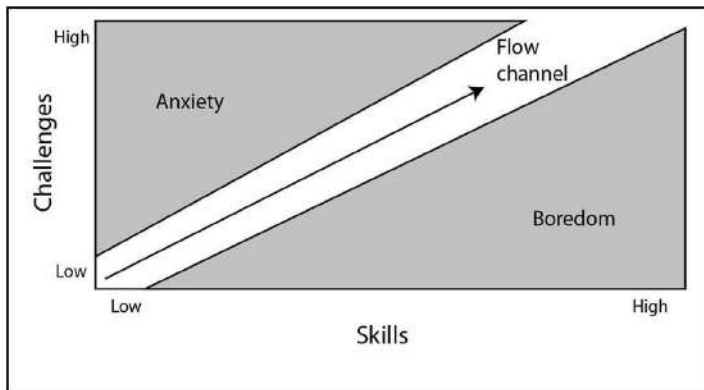
This Self Determination Theory gives powerful frame work to create long term motivational environment for their employees and can be effectively implemented by means of Gamification. But this theory fail to address short term motivational doses for productivity bursts.

### Fogg's Behaviour Model (FBM):

This model emphasis as there are three factors which influence human behaviour at large: 1.Motivation 2.Ability of individual 3.Trigger .In order to motivate People in right direction they can be provided with instantaneous feedback which can be positive or negative. The game dynamics in terms of points, badges,

status bar, progress etc. can serve these task. Person’s ability doesn’t always mean skills in this context. Ability can be mental capacity ,time, attention or any scarce resources that the user might need to complete the behaviour. Another method of increasing a users’ perceived ability is to make the target behaviour adaptive to user so users require less ability to accomplish the behavior. This essentially lowers the activation threshold of the target behaviour. Triggers are like reminders which periodically ask user to act. Although these can be effectively used in games to engage users. The game mechanic/dynamics must guide these three factors so that their cumulative effect can drive human behaviour. [3].

**Mihaly Csikszentmihalyi’s Flow Theory:**

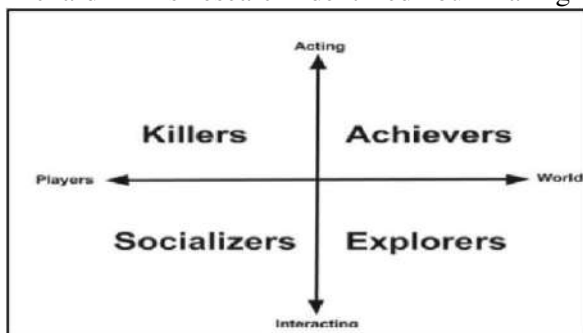


**FIG.1 Flow Theory diagram.**

This flow theory establish relationship between skills of user with respect to challenges or degrees of difficulties in work which drive user either in anxiety or boredom. Individual will be at best of his or her performance when he/she operates in flow zone as shown in fig. The flow channel is a zone where user is well focused, excited and engaged with his interest. Game elements can drive user to operate in flow zone so that he/she can be full of his/her abilities. Game dynamics can provide perfect balance of challenges with respect to user skills and keep user highly engage with interest.

**Richard Bartle’s Four Player types:**

Richard in his research identified four main groups of players doing four distinct types of activities as



- 1. Achivers
- 2. Explorers
- 3. Socializers
- 4. Killers

**FIG.2 Types of players based on behaviours**

Achievers are those who try to master everything there is to do within the game system. Explorers are just willing to go out and explore all the contents but not much interested to take on challenges and winning the same. Socializers are only interested to interact with each other, have conversation and build companionship. Lastly Killers who are not only strive to reach the top, but very keen on beating down the competitors in the process. Hence gamification can classify people with their natural instinct while playing. These different types of players are driven by different core drives and these can be simulated in game design to identify the type of player.

### Yu-Kai Chou's : The Octalysis Framework

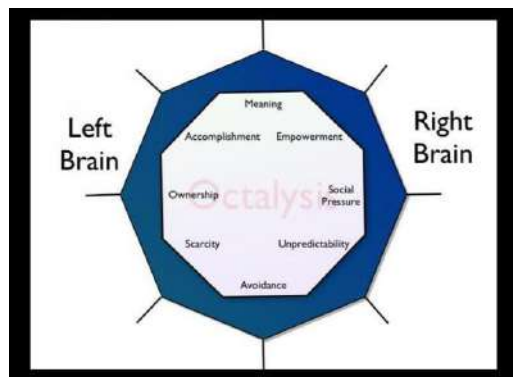


FIG 3 Octalysis frame work. [15]

The researcher has spent decade working to create a complete framework to analyze and build strategies which make games engaging. He has stated eight core drives of Gamification as 1. Epic Meaning and Calling 2. Development and Accomplishment 3. Empowerment of creativity and feedback 4. Ownership and Possession 5. Social Influence and Relatedness 6. Scarcity and Impatience 7. Unpredictability and Curiosity 8. Loss and Avoidance. This framework primarily focuses on psychological motivators instead of physical ones and it covers both Extrinsic and Intrinsic motivators. Octalysis is so arranged that the core drives that focus on creativity, self-expression and social dynamics are organized on right side to indicate right brain activities and drives which are associated with logic, analytical thought and ownership are graphed to left side representing left brain activities. [15]

## PSYCHOLOGICAL CONSTRUCT FOR GAMIFICATION

This framework as proposed in research paper [4] as gamification; it is effective to the extent that the gamified system is used and contributed to any explicit goals of user and system requirements. The framework has formative constructs as Users which can be defined as the consumption of system output. User alignment is the process of aligning the purpose of the gamified system with the goals of the user.

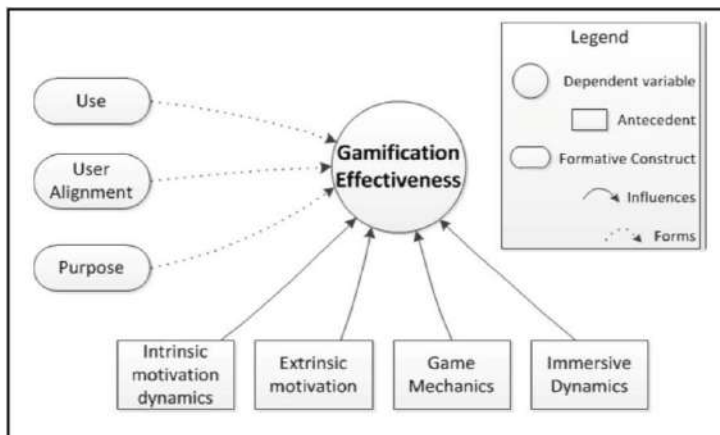


FIG.4 Construct framework.

There are four main antecedents for effective gamification as Intrinsic motivation dynamics, Extrinsic motivators, Game mechanics and immersive dynamics. Intrinsic motivation is provided to user if he/she feels autonomy, competence and relatedness. Autonomy can be incorporated in a gamified system with giving choices for using own tools and picking up own challenges. Competence is built in users by slowly increasing challenges and providing training or help as and when required. Relatedness is addressed by encouraging communication and collaboration within teams.

Games can use a number of extrinsic motivators like points, levels, badges or trophies. However, an over-reliance on extrinsic motivators may decrease performance. Game mechanics means environment, objects, actions, rules. They are important constructs towards the effectiveness of gamification. Immersive dynamics are factors that affect the player's immersion in the gamified system or activity, which is mainly bound to storytelling and aesthetics of the game.

## GAMIFICATION IN BUSINESS

There are many areas of business in which gamification can be used with clear objectives of Engagement, Attraction, Motivation, Retention and productivity. Gamification can be targeted with participants as customers as well as employees.

As it is already stated in this digital age, there is exponential growth in smartphones and computers, and especially generation Y spends maximum time with these devices, which create favourable ecosystems for gamification in industry. Numerous research works are establishing gamification standard frameworks to be used as a method to induce human behaviour in terms of innovation and productive engagement. Due to these facts, the gamification business was valued at \$2.17 billion in 2017 and is expected to reach \$20 billion by 2023, at a CAGR of 44.06% over the forecast period of 2018-23 [5]. Gamification, along with Artificial Intelligence, Virtual Reality, and Augmented Reality, makes it one of the most effective tools to handle a wide domain of business problems.

As per Gartner's report (2017), many businesses are looking for a gamification being overall innovation management strategy in digital workplace. Many business seeks to use this gamification concepts to enhance customer relationship as well as engage their employees in more constructive and productive means. The report also state following important points:

- Gamification designing differs from other IT solution in terms of unique approach based on a storyline, leaderboards, badges, etc. Success rate of gamification will depends on its implementation to meet perfect business requirements.
- Another difficulty in gamification implementation is lack of skill manpower.

Customers engagement will especially play a critical role in niche markets such as the physical fitness industry which can be fulfill through gamified marketing.

The benefits of gamification that business can perceive as higher participation of people, creative means of problem solving, long term information retention, people wellness as fun factor in involved. Even though there are numerous fields in which gamification can play vital role. In this paper we are exploring on four major aspects of business as 1) Marketing 2) Human Resource 3) Process improvements 4) Education/Training.

#### **Gamification in Marketing:**

Organization spend lot of funds for advertising through newspaper or TV advisements which definitely create impact ----but what if it's not just seeing ads but if one can get himself or herself involved into the same with due motivation ; definitely it will be more impactful. This concept of playing a game and possibly winning something give feeling of the creative, playful and competitive spirit in all of us which is more appealing to customer. Hence gamification is means to stand out and winning the order to close the deal on selling a product or service using that emotional gain. This techniques of gamifying marketing strategy increase the amount of time customer be engaged on the company web site or mobile app which can raise their engagement level with the brand enhancing brand value. This is going to play important fact as customer's purchase decisions are going be influenced by this brand image.

As per survey done in 2011 by M2, their finding is as gamification can leads to impact following three vital concepts of marketing.

**Engagement:** Customer emotional attachment to the brand through their involvement in many product development and uses.

**Brand Loyalty:** Serving to the customers' requirements and fulfilling their expectations gives repeat preferential behavior about particular brand.

**Brand Awareness:** The elementary level of brand knowledge to mass.

Gamification through business websites, online competitions and challenges, e-learning and assessments can give very positive impacts to users as exploratory research by Muntean (2011), Witt et al. (2011). Enhancing positive interaction leads to increase in user engagement is main advantage of using gamification. In order to achieve required objective this gamified campaign needs to be well design and executed.

Two concrete examples of brand enhancement through Gamification.

- Autodesk enhance Autodesk3dsMax softer download and trial uses by 40% giving gamified experience to the users.
- Starbuck- My Startbucks Rewards. They replace traditional card loyalty program into something much more exciting gamified version which attract more customer.

A survey by Pew Research Center showed 53% of people surveyed said that, by 2020, the use of gamification will be widespread and Gamification Growth Statistics is as followed:

47% Client Engagement, 22% Brand Loyalty , 15% Brand Awareness.

In this highly competitive environment, gamification can provides innovative tools to attract client and retain them for long term loyalty.

### **Gamification in Human Resource:**

HR is primarily responsible for organization recruitment process. The prime objective is not to get good people but to have great people which are going to be assets for company. Gamification can change the process of recruitment using the social network. It can attract great candidates and even can assess them in more realistic mean as compare to traditional methods of recruitment.

Over a period the recruiting activities have shifted as Traditional ---- to E-recruitment--- to Social Recruitment---to Gamified recruitment. Last method is most suitable for Generation Y as they can be effectively attracted through gaming. Gamified recruitment covers three phases, firstly to activate candidate to explore their web site and learn more about organization .Secondly to attract and tempt candidate to apply and send their CV. Finally gamification can be used for existing employ referral programs which can produce good results [7].

After attracting candidate selection is very critical process and traditional process of interviews but it has some limitation and drawbacks which can be overcome through gamified selection process. Candidates have to go through different levels of competing with other candidates to achieve the job position and this exactly game can implement.

In gamified recruitment process instead of calling applicants for interviews, HR can ask them to play games on site which are specifically design and customized to companies requirements. These games simulate the work environment and test candidate for aptitude as well as attitude. Gamification can allow HR department to test candidate's skill, motivate them to complete certain task with his/her full involvement without any bias. In combination with Data mining and machine learning can be incorporated to automate the recruitment process much more efficiently. As stated above that gamification take the framework of psychology when we dealing with human being of different nature gamification can give more effective tools.

After recruitment, major task for HR is to carry out onboarding and orientation of new recruits. In this process also gamification can provide good instrumental process. Next is talent management, engagement and it is big deal for many organization, gamification can help in this domain also. In fact,

Brian Burke Vice President of Gartner estimates “employee focused gamification applications now exceed customer focused gamification applications.”.

Training and performance assessment process also can be gamified to great extend and it gives employees engagement with fun and excitement. **Gamification** is 75% psychology and 25% technology. (Gabe Zichermann, in his book **Gamification by Design**)

Few example of gamification in HR domain [8]:

- In PwC as they uses a game known as Multipoly which simulate their business environment for new recruited employee. It is observed as this process gamification leads to tenfold rise in their recruitment rate.
- In onboarding processes of SAP, they have introduced simulated gaming called “SAP Career City” which introduces new employee about the organizational procedures, culture etc.
- Gamified employee wellness activity can be implemented through Keas; which is an employee management program.
- Gamification is used by US Army for recruitment and promotions.

### **Gamification in Process improvements:**

Kaizen is Japanese philosophy and method for continuous improvement in business processes. This Kaizen is built on gradual changes rather than rapid and extreme changes. As Gamification work on behavior change in people; combining gamification with the Kaizen model can bring in very impressive results in stated objectives. The PDCA (Plan, Do, Check, Act) model can implemented through gamified version incorporating immediate feedback, analysis, action trigger and reward to motivate people for positive changes as desired in process.

For many corporates it make business sense to invest in strategies and process enablers to so that their business objective ,KPIs can be meet through behavioral change in employees. Competitive challenges, recognitions and rewards are all game mechanics which can motivate people to improve a business process and fulfill the business objectives. [9].

It is observed in software industry that the main reasons to failure of Software Process Improvement (SPI) initiatives is that the lack of motivation of the professionals. Hence in order to encourage People to contribute positively in process improvement Gamification can be a solution.

In this regards, there is a qualitative research methodology was implemented through interviews that involved a total of 29 domain experts in gamification and SPI. The study outcome confirm the validity of gamification towards people engagement leads to process improvement. [10].

### **Researcher of the paper propose model as GameLog which consists of three major phases:**

I: Analysis and Exploration phase, II: the Design and Realization phase III: The Evaluation and Reflection phase. The model was used to create a gamification application for material handling process and results are quite impressive in terms of employ engagement and motivation. Existing work context must be integrated with game elements and mechanics to make it effective. [11].

### **Gamification in the Service industry:**

Service industry is directly interacting with customer, hence there is a challenge to standardize and structure service processes especially in comparison to processes in industrial production industry. Gamification can provide set of tools to measure various parameter and hence monitoring and controlling



the processes is feasible. As per Huatari and Hamari, a service with affordances of gameful experiences can enhance user's overall value creation [12].

### **Gamification in the Production industry:**

Gamification is not that popular in production environment of industry but that is quite unusual. In fact many processes in production have physical outcomes like production lot, defects, material consumption etc. These outcomes usually are already measured and transferred to business intelligence systems like ERP or PPS (Enterprise Resource Planning; Production Planning System). Hence gamified elements like progress visualization, score and leaderboards can easily be implemented and it can be use as motivational drive for production people and to monitor their performances [12].

### **Gamification in Education/Training:**

The education sector is looking forward for paradigm change from memory based rote learning to action oriented induction learning through real life simulation. These objectives are achieved through gamification. There are some obvious overlap between games and the classroom that makes gamification of curriculum a logical approach: in games players compete with each other to achieve specific goals and win, in the classroom students work to achieve specific learning objectives and get academic rank; in games players progress from one level of complexity to next level as it acquire the skill, in the classroom students must pass prerequisite courses to move in next class. Gamification is becoming more suitable in education because of its perceived ability to motivate students and thus enhance the learning process. Huang and Soman (2013) assert that the trend is increasing for two significant reasons: it resonates more directly with today's "digital generation" and "in real life, individuals do not feel that they are as good as they are in games.

In their research at the Simon Fraser University in Canada, Andrew Stott and Carman Neustaedter also discuss two characteristic of gamification they call the freedom to fail concept and storytelling that are directly related to the application of gamification to education. The freedom to fail concept involves providing rapid and ongoing feedback that does not directly affect the students' final grades, but encourages incremental or scaffolded learning. Similarly, storytelling in education increases engagement and progression through content .

The majority of the papers they reviewed report positive results from introducing gamification to education. Specifically, they found :

- Students engagement in forums, projects, and other learning activities increase significantly;
- Attendance, participation, and material downloads Increased;
- Passing percentage of students raised;
- The gap between the lowest and the top graders is reduced. [13]

As per survey report, the gamification of education in the year 2015 was marked at \$93 million but market is likely to explode by 2020 and can reach to about \$1.2 billion. Next five year 2016-2020 prediction of CAGR is about 68%. [14].

Personalized learning and assessment is feasible through gamification techniques which has many benefits, including increased student engagement and achievement. Working on psychological aspect of

the gamification it can be very useful to assessment tool for Non cognitive skill of students when use in conjunction with data mining.

### **Examples of Gamification in Education**

- i) DuoLingo: This free language learning web site provide with gamification to encourage peer review about the translation by other learners and if the student completes the task within the time limit, they earn points and time bonus. [14].
- ii) Virtual reality house: The game comes with scenario-based learning, which take learners to learn through step by step approach as they follow through the steps of planning, installation, and costing. It provide a real-life simulation so that learners can get experience of skill picked up without wastage and harms [14].
- iii) Virtonomics: This platform provides in a friendly but business-oriented community. However, players have to use their strategic, experience, analytical thinking and knowledge to implement business strategies effectively in order to bring exponential success in your company. [14].
- iv) Khan Academy also has incorporated the notion of gamification into its site by adding gaming elements to the learning environment.

### **CONCLUSION AND REMARKS**

Researcher identify great potential of work in this space of gamification for business applications; which is innovative means of connecting and engaging generation Y people in this digital age with specific business objective. Human psychology is base of gamification and in combination of computer science can provide required implementation means which can be very creative and attractive to this Millennial.

Mobile computing, data analytics, social media network and cloud technologies provides perfect eco system to implement and transform user experience through gamification. It is not simply creating games for entertainment value but to incorporate game elements into existing processes which make people excited about it so that their involvement increases. Hence it can be used to improve skills, drive their performances and boost productivity. [16]

In Indian industrial scenario, next few years the great challenge for HR is to identify, engage and have continuous performance monitoring for talent management of Generation Y. These activities can be automated to great extent through gamification. Artificial intelligence, Machine learning and data mining like technology tools bring in new dimension to gamification making it more effective and efficient.

### **REFERENCE:**

- [1] G. Social Business Transformation through Gamification by Jitendra maan,Tata Consultancy Services Ltd., IJMIT, Vol.5, No.3, August 2013.
- [2] Why gamification is serious business by Macro Ryan, Andy Sleigh, Kai Wee Soh and Zed Li, Accenture, Outlook article 2013.
- [3] Wu Michael (2011), *Gamification 101: The Psychology of Motivation*, Retrieved June

- 2011:<http://lithosphere.lithium.com/t5/Building-Community-the-Platform/Gamification-101-The-Psychology-of-Motivation/ba-p/21864> K. Elissa
- 011:<http://lithosphere.lithium.com/t5/Building-Community-the-Platform/Gamification-101-The-Psychology-of-Motivation/ba-p/21864> K. Elissa,
- [4] Proposing a Theory of Gamification Effectiveness, Bilal Amir Sur University College, Paul Ralph Lancaster University
- [5] <https://www.mordorintelligence.com/industry-reports/gamification-market>
- [6] Gamification in Consumer Marketing - Future or Fallacy? Garm Lucassen\*, Slinger Jansen ,Dept. of Information and Computing Sciences, Utrecht University. Netherlands. ScienceDirect
- [7] Gamification in the field of human resource management Gamified solutions for recruitment, Camilla Pernot, Thesis for International Management master programme Ca'Foscari Venezia University.
- [8] <https://businessfirstfamily.com/hr-gamification-examples-onboarding/>
- [9] White paper “Gamification: It’s all About Processes” by Cognizant 2012.
- [10] Towards a Gamification Framework for Software Process Improvement Initiatives: Construction and Validation by Eduardo Herranz (Universidad Carlos III de Madrid, Spain, Eduardo Herranz, Antonio de Amescua Seco, Mary-Luz Sánchez-Gordón , Universidad Carlos de Madrid, Spain.
- [11] Implementation model for the gamification of business processes, A study from the field of material handling, Markus Klevers, Michael Sailer, Willibald A. Günthner
- [12] Gamification of business processes: Re-designing work in production and service industry, Oliver Korn, Albrecht Schmidt University of Stuttgart, VIS, Pfaffen waldring 5a, 70569 Stuttgart, Germany,2015
- [13] Gamification in Education: A Literature Review ,Michael Jackson Center for Faculty Excellence, United States Military Academy, West Point, NY, 2016.
- [14] <https://raccoongang.com/blog/gamification-education-and-its-example>.
- [15] Print Book: Yu-Kai Chou. Actionable Gamification, Octalysis
- [16] Gamifying Business to Drive Employee Engagement and Performance, Cognizant Report 2013.