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# Fostering HR practices through Gamification

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## TABLE OF CONTENTS

Introduction	I
<b>CHAPTER 1 – Gamification: an overview</b>	<b>1</b>
1.1 The hype around Gamification	2
1.2 Defining Gamification	8
1.2.1 Under the Gamification umbrella	10
1.2.2 Parallel concepts	13
1.3 Virtuous examples in the commercial-industrial area	16
1.3.1 Medicine	17
1.3.2 Education	17
1.3.3 Healthcare	18
1.3.4 Science	19
1.4 Gamification “at” work	21
1.4.1 Work gamification	21
1.4.2 Differences between consumer context and enterprise context	23
1.4.3 Levels of Gamification	26
<b>CHAPTER 2 – Workplace Gamification</b>	<b>29</b>
2.1 The relation between work and play: an apparent incongruity	30
2.2 Is Gamification a mandatory fun?	34
2.3 The game layer: approaches for gamification design	40
2.3.1 Wood and Reiners’ framework	43
2.3.2 The MDA framework	48
2.4 Why Gamification works?	55
2.5 Theoretical connections to Gamification	57
2.5.1 Self-determination theory	57
2.5.2 Behaviorism	61
2.5.3 The flow theory	62
2.5.4 Players types	64
2.5.5 Goal setting theory	67
2.5.6 Theory of user engagement	69
2.6 The usefulness of games in the workplace	71
2.6.1 Outcome one: relieving tedium and increasing satisfaction	72
2.6.2 Outcome two: improving performance	73
2.6.3 Outcome three: encouraging unremunerated work, externally and internally	75
2.6.4 Outcome four: bolstering HR practices	77

<b>CHAPTER 3 – What is coming for HR Gamification in 2018?</b>	85
3.1 The hype criticisms; Bogost’s point of view	86
3.2 Gamification in numbers	91
3.3 SWOT analysis	100
3.3.1 The methodology	101
3.3.2 Strengths	105
3.3.3 Weaknesses	107
3.3.4 Opportunities	108
3.3.5 Threats	110
3.3.6 What is needed to incorporate Gamification into the HR department properly and successfully?	113
<b>CONCLUSIONS</b>	117
Bibliography	120

# Introduction

Looking at the new trends in the HR field, gamification is one of the new technologies that are becoming more and more compelling as people are starting to become more acquainted about its potentialities. The idea of exploiting games is so appealing because there is some possibility that their power can be harnessed to benefit other fields of application.

But while gamification for commercial purposes has already explored the use of games to attract customers, organizations still lay behind in its implementation. This is due to important differences between the two domains. In the first case, people opt into the game experience and so the reason for engagement to such gamified activities is a given. In the enterprise setting instead, the reason for engagement is not an established fact. Thus, while in the former case users are already intrinsically motivated as they set goals as their own, in enterprise settings instead, employees need to be engaged and motivated since they are bounded to follow rules and goals that are set by the management. So here the problem is twofold. Gamification used in the enterprise system are leveraged to foster engagement and intrinsic motivation of the employees, but employees need to be engaged to opt to such activities. Just because gamification draw from games it does not mean that it is fun and effective in its intent to engage people.

In this matter, gamification is even more challenging and demanding. In the rush to gamify existing processes, organizations are risk of not doing proper analysis for the business case.

In this respect, from the theoretical point of view, it is important draw back the studies of games in the workplace to understand how games have evolved inside organizations. In fact, while gamification as we intended it today is a new-born phenomenon that has captured the attention of many people, games were already the object of many studies intended to observe their spontaneous arrangement inside the organizations. But while the latter were employee-created games and sprang up from the employees themselves, gamification applications are built as employer-imposed games where the goals of the games are designed to reinforce the goals of the management. Furthermore, it is important to review the theories of

motivation to identify which theories are most promising to describe the effects of gamification and to grasp important insight about the psychological mechanism of the human kind in order to leverage on these when designing a gamified application.

From the empirical standpoint, instead, most of the critics are related to the hype phase of the gamification phenomenon. While there are many people and game experts that assert the positive outcomes of such instrument, there are some others who are blaming the hype phase for have overlooked and misinterpreted important aspects for its effective implementation for the sake of only promoting this new approach. This is probably the reason why, there are still a lack of an in-depth knowledge of such instrument among managers inside the organizations, especially among those inside the HR department, to prefer it to the more traditional practice. Since the focus was only on the need promote the gamification industry, rather than going further in the understanding of such instrument, managers are still dubious about its appliation. They are willing to try it, at least to support the more traditional practice, but are still skeptics to prefer it.

In order to endow HR managers with a deeper knowledge of such new tool, we provide an analysis of gamification with the aim to dispense them a strategy for guessing what lies ahead in the future. In particular, through the collection of some interviews from game designers and experts we present a SWOT analysis for the gamification field. The goal of such analysis is to provide HR managers with a useful tool for identifying positive and negative aspects of gamification, as well as its perspective of development and risk of decline.

# Chapter 1

## GAMIFICATION: AN OVERVIEW

*While gamification is increasingly requested and implemented, within organizations there still exist a lack of uniformity surrounding the domain of research about gamification. The piecemeal approach observed in the field of studies that deals with the theme of gamification slows down the advancement in the understanding the effect of designing user experience that incorporate game elements in business activities.*

*This chapter is intended to be an overview of the Gamification phenomenon. In particular, in the first part a general definition of Gamification is presented with an analysis of main research trends in the field. Furthermore, Gamification is compared with other parallel and overlapping concepts in order to delimit the concept.*

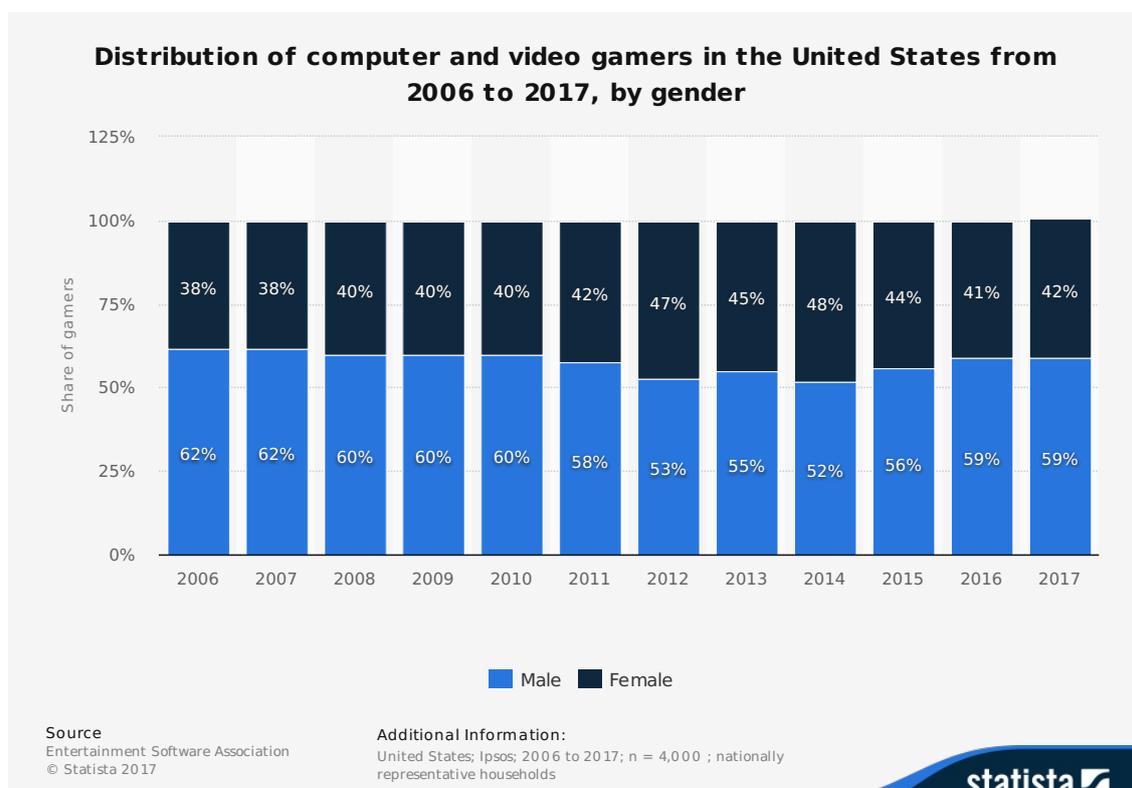
*Then, some examples of gamification applied in different field are made.*

*Finally, a narrower analysis is made focusing on the gamification inside the enterprise. A comparison between gamification for consumer market and for enterprise segment is used to highlight the elements that need to be considered when game mechanics are integrated in the organizational mechanism.*

## 1.1. THE HYPE AROUND GAMIFICATION

During the last decade, games have become an essential part of the entertainment culture, if not an integral part of the people's daily lives. The game industry has evolved so that 150 million Americans play video games and 65 percent of American households home to at least one person who plays video games regularly (<http://www.theesa.com/about-esa/industry-facts/>). Surprisingly, the statistics about the gender split among U.S. computer and video gamers from 2006 to 2017, shows that women account for nearly 42 percent of all gamers in the United States (**Figure 1.1**) with a growing pace. Instead, the average age of video gamers is 35 years old.

**Figure 1.1: Distribution of computer and video gamers in the United States from 2006 to 2017, by gender**



Source: <https://www.statista.com/statistics/232383/gender-split-of-us-computer-and-video-gamers/>

According to numbers, the video game industry is a power engine for the economic growth. In the 2016, the total games sold (including purchases of digital content such as online subscription, downloadable content, mobile applications and social network games) amounted to over 24.5 billion, generating more than \$30.4 billion in revenue. The pace is so fast that, according to the Entertainment Software Association (ESA) and the NPD Group, the U.S. video game industry reached \$36 billion in revenue in 2017 (**Table 1.1**), a growth of 18 percent compared to the previous year.

**Table 1.1: Video game industry growth from 2016 to 2017**

US Video Game Industry Revenue	2017	2016	Growth percentage
Hardware, including peripherals	\$6.9 billion	\$5.8 billion	+19%
Software, including in-game purchases and subscriptions	\$29.1 billion	\$24.6 billion	+18%
Total:	\$36 billion	\$30.4 billion	+18%

**Source:** <http://www.theesa.com/article/us-video-game-industry-revenue-reaches-36-billion-2017/>

This increased penetration of the computer game industry, along with the digital transformation (that is the innovative change associated with the application of the digital technology in all aspect of human society), has inevitably extended the scope of employment of the games beyond its normal application. People started to employ games in other everyday activities. As a result, the real world reality becomes increasingly game-like, not just because of the recent growth in the gaming industry and the mass appeal of the video games in the entertainment arena, but also because activities and systems that are not normally perceived as game-like are increasingly transformed with game-like features. Gamification refers to this

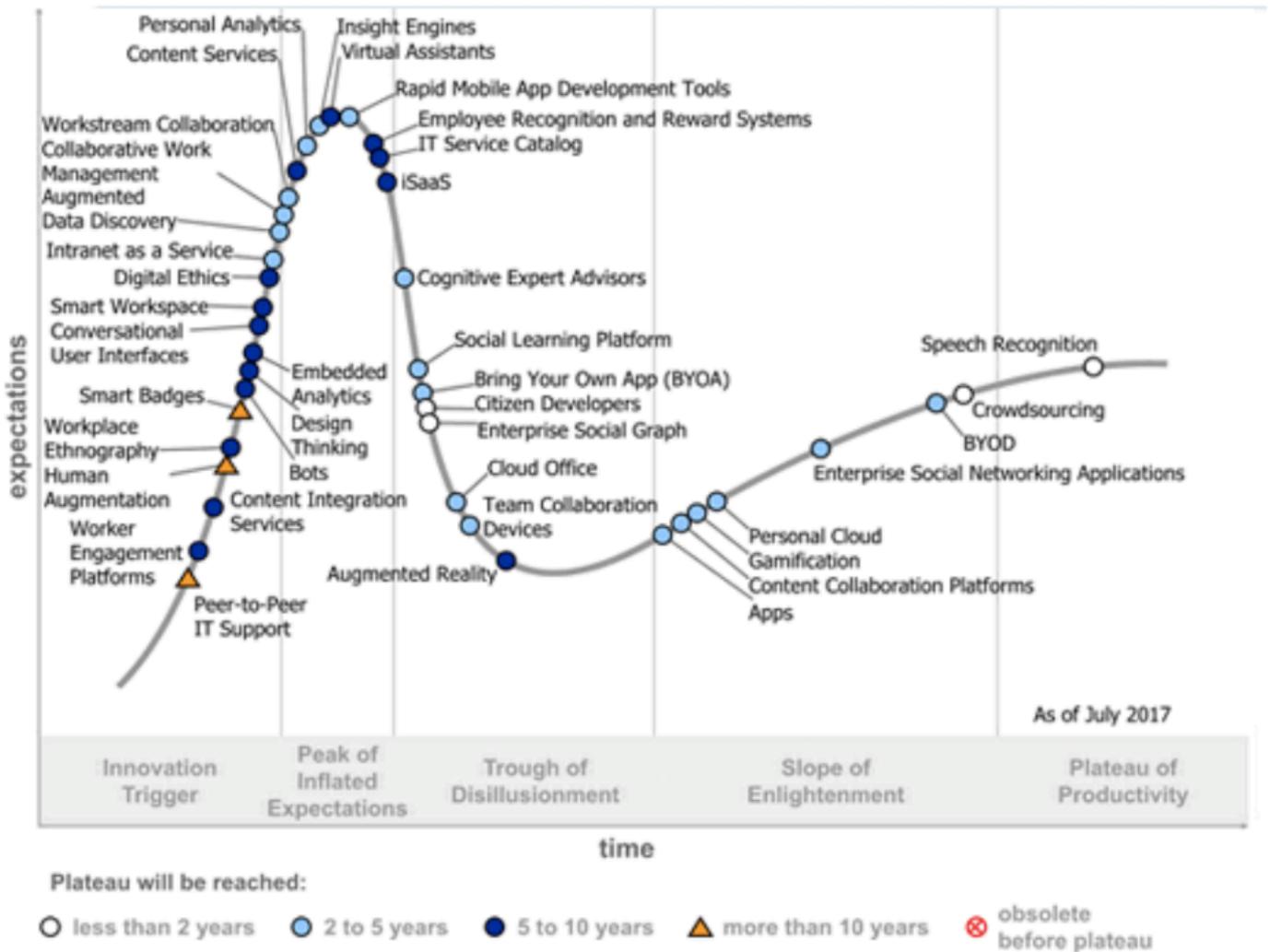
transformation that products, services and organizational practice are undergoing. It concerns the design change of the activities in order to afford similar experiences to games with the ultimately intent to create value and affect people's behaviour.

Within a short time, gamification has become an emerging phenomenon and its popularity skyrocketed to the point that more and more applications are gamified and the amount of the research is rapidly increasing. In that sense, gamification has been part of the Gartner's (the world's leading research and advisory company) annual aggregated research about the emerging technologies and has been represented in the Gartner Hype Cycle (a methodology that give you a view of how a technology or application will evolve over time) for being the new trend of the moment (**Figure 1.2**). The "Hype Cycle for emerging technologies 2017" report presented by Gartner (2017), provides insights about the set of new technologies that show the most potential for delivering a competitive advantage over the next 5 to 10 years and gamification was one of them. Actually, as illustrated in the figure below, gamification is no longer "emerging", but rather is becoming more and more integral to business and IT. It is not in the "peak of inflated expectations" anymore, but it has already exceeded the "trough of disillusionment", that is the phase where interest is vanishing as experiments and implementations are failing to deliver; investments continue only if the surviving providers improve their products (Gartner, 2017). Currently, gamification is just at the beginning of the "Slope of enlightenment" phase, in which practitioners and experts are becoming more acquainted about how the technology can benefit the enterprise and successful practice are crystalized, becoming more widely understood.

As it is just at the beginning of the path towards enlightenment, gamification need to be revised in order to understand where it fails to meet the aforementioned expectations. The actual research question is "Does gamification work?". Since many times the answer is negative, new research should focus on "Which are the gaps that should be adjusted in order to improve gamification?". Gamification is just starting to come out from the "trough of disillusionment" stage. Before reaching the maturity in the "Slope of enlightenment", further researches and experiments need to be

made in order to shed the light on the possible weaknesses of the blind application of the game mechanics.

**Figure 1.2 Hype Cycle for the digital workplace, 2017**

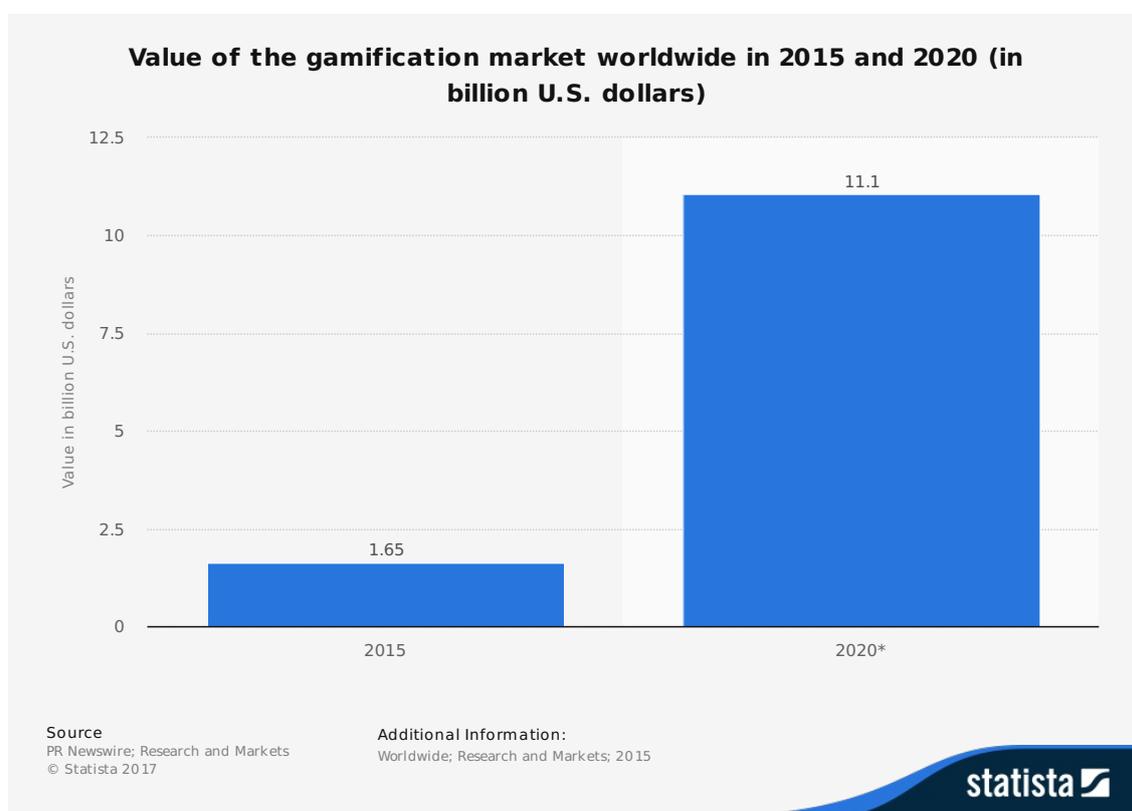


Source: GARTNER, Hype Cycle for emerging technologies 2017.

However, the expectations are already high and many experts believe that gamification will overcome this standstill. According to statistical forecast provided by Statista, the value of the gamification market worldwide is expected to increase

ten times in the years between 2015 and 2020 (**Figure 1.3**). Specifically, according to the data, the gamification market is expected to grow from 1.65 billion U.S dollars in 2015 to over 11 billion in 2020. This could be possible only with a deep analysis of the possible misunderstanding in the application of the gamified process. The aim of this review is to recognize which are the “black holes” that need to be understood in order to effectively implement the gamification revolution.

**Figure 1.3: Value of gamification market worldwide in 2015 and 2020 (in billion U.S. dollars)**



**Source: <https://www.statista.com/statistics/608824/gamification-market-value-worldwide/>**

As Brian Cugelman (2013) stated, “At present, there is no shortage of enthusiastic gamification advocates who claim that badges, points, and competition will get everyone so captivated and absorbed on digital technologies, that developers should gamify their interventions immediately, or get left behind. However, jumping on this gamification bandwagon is a risky undertaking. Not

because gamification does not work, but rather, because it is easy to get it wrong if developers do not understand what it is, know its limits, and make informed decisions on its application. Gamification is just one of many persuasive architectures. However, like all other persuasive design patterns, gamification has merit when used in the right way, under the right circumstances.”

## 1.2. DEFINING GAMIFICATION

The term “Gamification” originated in the digital media industry. The first documented use dates back to 2008 when first appeared online in the context of computer software. But the naissance of the term has its origins years ago, in 2002 when the British consultant Nick Pelling, coined the term as a “deliberately ugly word” to describe “applying game-like accelerated user interface design to make electronic transactions both enjoyable and fast”, describing the services of a start-up consultancy named Conundra Ltd (Burke, 2014). Whereas the Pelling’s view of gamification was all about hardware, today the term “gamification” outlived the consultancy field and has assumed a completely different meaning.

However, albeit its origins dates back many years ago, the term did not see widespread adoption until the second half of 2010. In that year it reached the critical mass required to appear on Google Trends thanks to the players of the digital media industry that popularized the term on conferences and on web. Since then, “gamification” became a buzzword and was seen as one of the latest trends to such an extent that Oxford Dictionaries selected “gamification” as a runner-up for the 2011 word of the year (Burke, 2014). The wide diffusion of the term gamification and the fast growing interest on it was the result of the excitement around the two most cited example of successful gamification which are Foursquare and Nike+. These widely publicized case studies were the outcome of the convergence of several enablers: cheap sensors that allow the tracking of everyday activity, a shift of Web analytics to individuals and their behaviours and the current cultural momentum of video games. Within the socio-cultural trend of “ludification”, gamification was the new exiting trend that captured the attention of marketers, human resource professionals, and others interested in driving motivation and engagement.

Many researchers tried to replace the word with others introducing terms such as “productivity games”, “surveillance entertainment”, “funware”, “playful design”, “behavioural games”, “game layer” or “applied gaming”. Nowadays

“gamification” is widely accepted even though there still no clear understanding about this new technology.

From the point of view of a person that is newly introduced in the field, gamification could make some confusion. Like any new technology, there were different opinions on what gamification means in reality. In fact, until a few years ago there was a lack of uniformity and clarity surrounding a universal explanation of the term. In the recent past, in literature there were several meanings of the concept of Gamification (**Table 1.2**). At present, the most accepted and widely cited is the Deterding and colleagues’ (2011) broad definition:

*gamification is the use of game design elements in non-game context.*

The common idea behind all these definitions is that game elements are introduced in non-ludic system with the main goal to increase user engagement and motivation (Marache-Francisco et et al., 2014). Instead of creating full games, gamification guiding idea is to use elements of game design in non-gaming context, products and service to motivate desired behaviours (Deterding, 2012).

**Table 1. 2: Some Gamification definitions**

Authors	Definitions
Deterding & Al. (2011)	An informal umbrella term for the use of video game elements in nongaming systems to improve user experience and user engagement.
Thom, Millen & DiMicco (2012)	The use of game mechanics in non-gaming applications (...) aims to create a sense of playfulness in non- game environments so that participation becomes enjoyable and desirable.
Zichermann & Cunningham (2011)	The process of using game-thinking and game mechanics to solve problems and engage users.

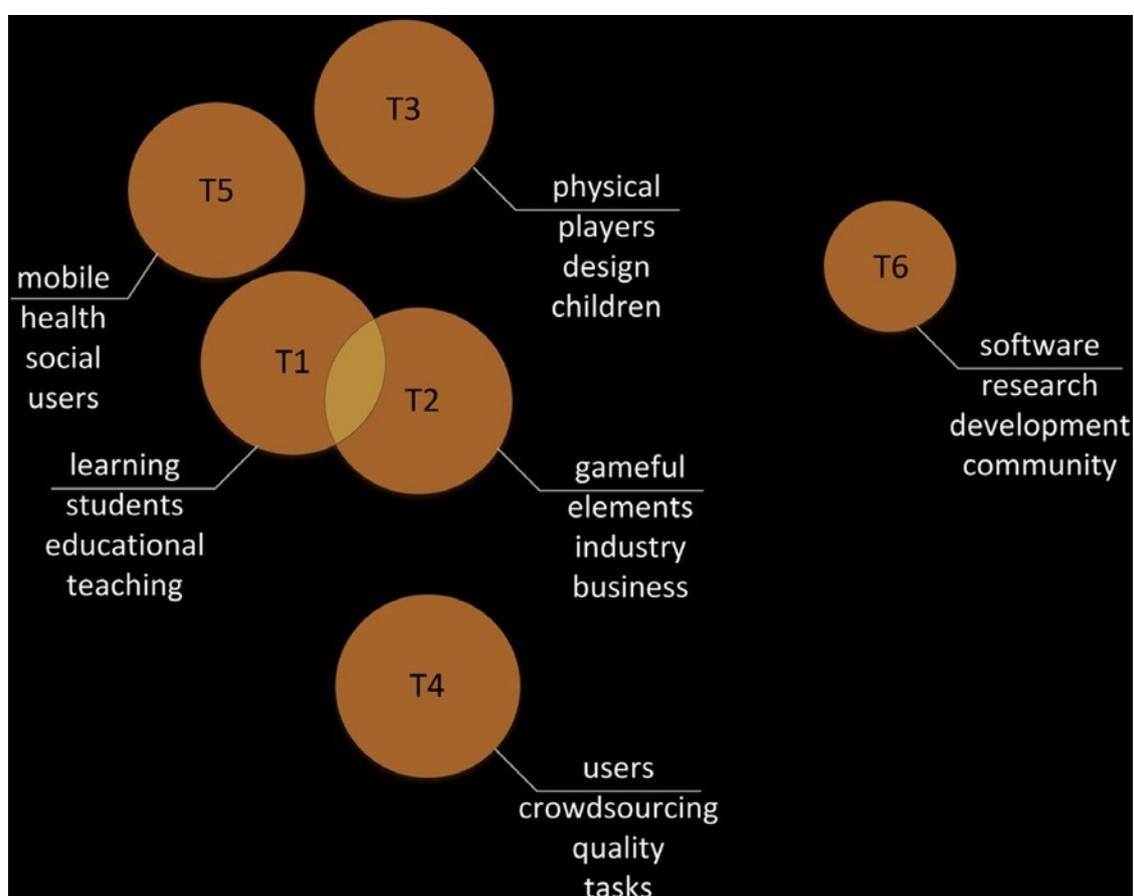
Witt, Scheiner & Robra-Bissantz (2011)	Implementing principles and mechanics of games (like points, leaderboards or levels) in a serious context is called “Gamification” and illustrates one possibility to increase the level of enjoyment and flow and hence, to address these challenges.
Werbach & Hunter (2012)	Gamification means that game features are “embedded into activities that are not themselves games”
Kapp, K.M. (2012)	the use of “game-based mechanics, aesthetics, and game thinking to engage people, motivate action, promote learning, and solve problems”

### 1.2.1 UNDER THE GAMIFICATION UMBRELLA

One of the main reasons for which gamification did not reach a unified definition at once, is that gamification domain is huge. The current state of the art in the gamification research is still evolving so that, overall, it is unclear what different aspects are situated under the umbrella of “gamification”. There exists different focus area, research topics and research trends. J. Kasurinen and A. Knutas (2018), in their systematic study, tried to map which are the research trends in gamification. They studied 1164 different papers collected from four search engines: ACM Digital Library, IEEE Xplore Digital Library, Google Scholar and Web of Science Core Collection. The objective of their effort was to answer to two important research questions: “What are the current trends in the gamification research?” and “Where is the effort of the gamification research focused”. Using the Latent Dirichlet Allocation (LDA) topic modelling algorithm, a statistical text meaning method for assigning documents into topics, which are detected using word association and distribution, they identify six different topics. They are illustrated in **Figure 4** and

can be summarized as education (T1), industry (T2), (children’s physical) activity (T3), crowdsourcing (T4), mobile health (T5) and (software and research) development community (T6). The relative sizes of the circles represent the prevalence of the topic in the data set while the location represent the intertopic distance.

**Figure 1.4: Gamification’s topics discovered with the LDA analysis**

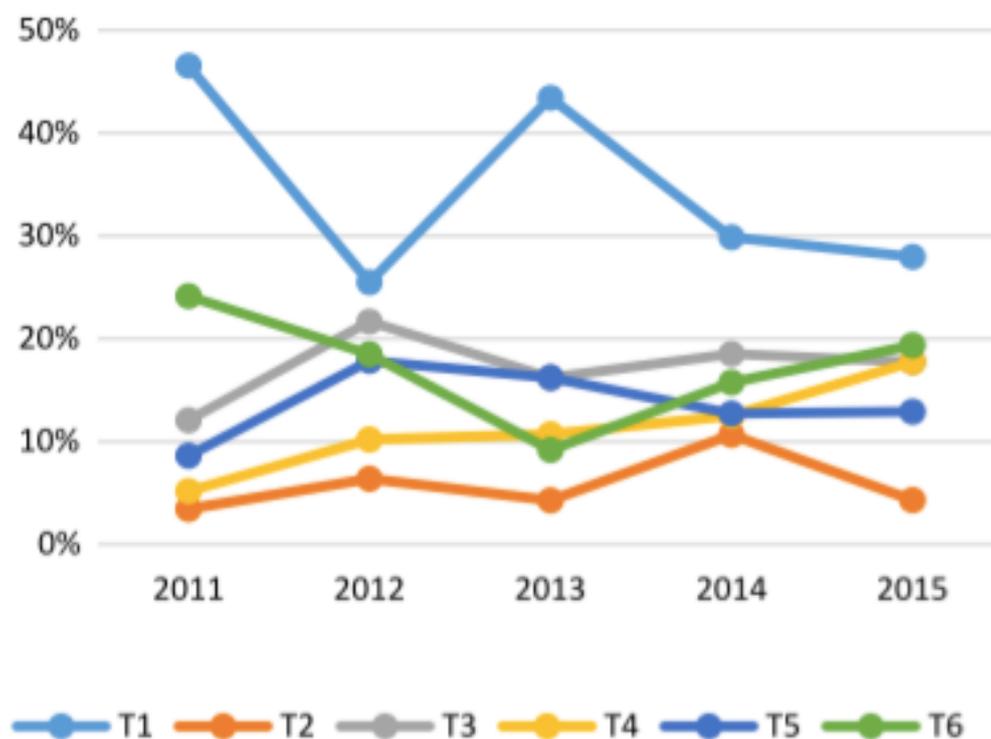


Source: J. Kasurinen and A. Knutas (2018)

Another meaningful visualization of the data set is the volume of publications in each LDA-detected topic, divided and normalized by year as illustrated in **Figure 5**. The graph shows that the focus area of the research for each year is education, with (children’s physical) activity close and development community on the rise.

Conversely, the volume of publications related to the business area remains low. This analysis shows that in the domain of gamification is still evolving. There are major trends in the research area influencing each other and new areas of application are continuously discovered. Furthermore, the publishing years were all relatively recent and the most pressing issue of the research work is to collect evidence on the practical applications of the gamification tools and their impact, pointing out that gamification-related search is still new and in evolution. Even though the publications are limited to the years between 2011 and 2015 it is clear that the gamification topic is a new rising trend.

**Figure 1.5: LDA analysis topics, volume per year**

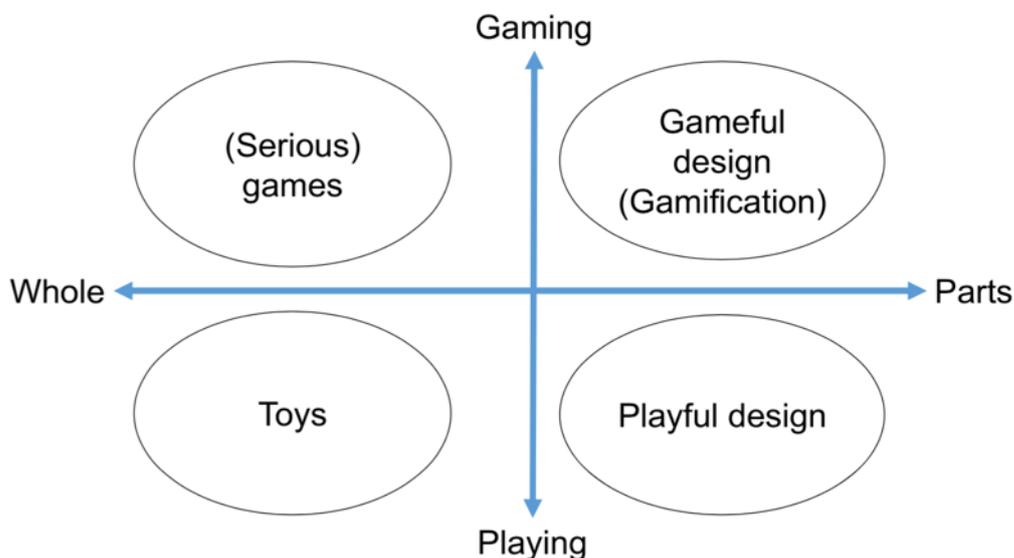


Source: J. Kasurinen and A. Knutas (2018)

## 1.2.2 PARALLEL CONCEPTS

Another important aspect to take into account is that there are several similar concepts. Gamification has grown within a rich bed of interacting trends and there are continuously new potentially competing and overlapping concepts. Notions such as serious games, toys, playful design and gameful design are parallel to that of gamification. Deterding et al. (2011) propose a model that divide the field into the vector of the entertainment purpose of the product, and the extent of the effect in the product design (**Figure 6**). It is worth observing that, in the context of “ludification” culture, this simplified model perfectly illustrate how gamification can be distinguished from the other related concepts via the two dimensions of playing/gaming and parts/whole.

**Figure 1.6: The axis of different gamification-related concepts as defined by Deterding et al.**



Source: Deterding et al. (2011)

Firstly, gamification is located on the gaming side of vertical axis which measure the degree of the entertainment purpose of the product. To understand why, is important to explain the distinction between games and play. In game studies, it is usual to quote the Caillois' concept of *paidia* and *ludus* as two poles of play activities. Whereas *paidia* (or "playing") denotes a more freedom, expressive, improvisational, even "tumultuous" recombination of behaviours and meanings, *ludus* (or "gaming") captures playing structured by rules and competitive strife toward goals (Deterding, 2011). Along those lines, gamification, in contrast to playful design and toys, is characterized by explicit rule systems.

**Figure 1.7: Paidia and ludus dichotomy**



**Source: Deterding, 2011. Drafted by the author**

Secondly, gamification is situated on the "parts" side of the vector related to the extent of the effect of the gaming design. This implies that, whereas "serious game" describe the design of full-fledged games for non-entertainment purpose, "gamified" applications merely incorporate elements of games (Deterding, 2011). Indeed, the boundary between serious games and gamified products can often be blurry. While gamification uses game thinking and mechanics in a non-game context to improve user engagement and solve problems, serious games, conversely, are games. But they are games designed with a purpose and developed with the intention to be more than entertainment. Serious games dates back several

millennia when it was mainly used for military purpose and then for education and business objective in the second half of the 20<sup>th</sup> century. In the early 2000s, the rise of the digital games has transformed and reinvigorated this instrument into an effective industry and a solid research field. It looks like and has all the elements of real game but has some defined purpose. The “serious” aspect comes from the fact that they are used by industries like defence, education, scientific exploration, health care, engineering, city planning, politics and so forth. Just because it is called “serious” game doesn’t mean that it cannot be fun, but it simply means that the reason it was created goes beyond the pure entertainment.

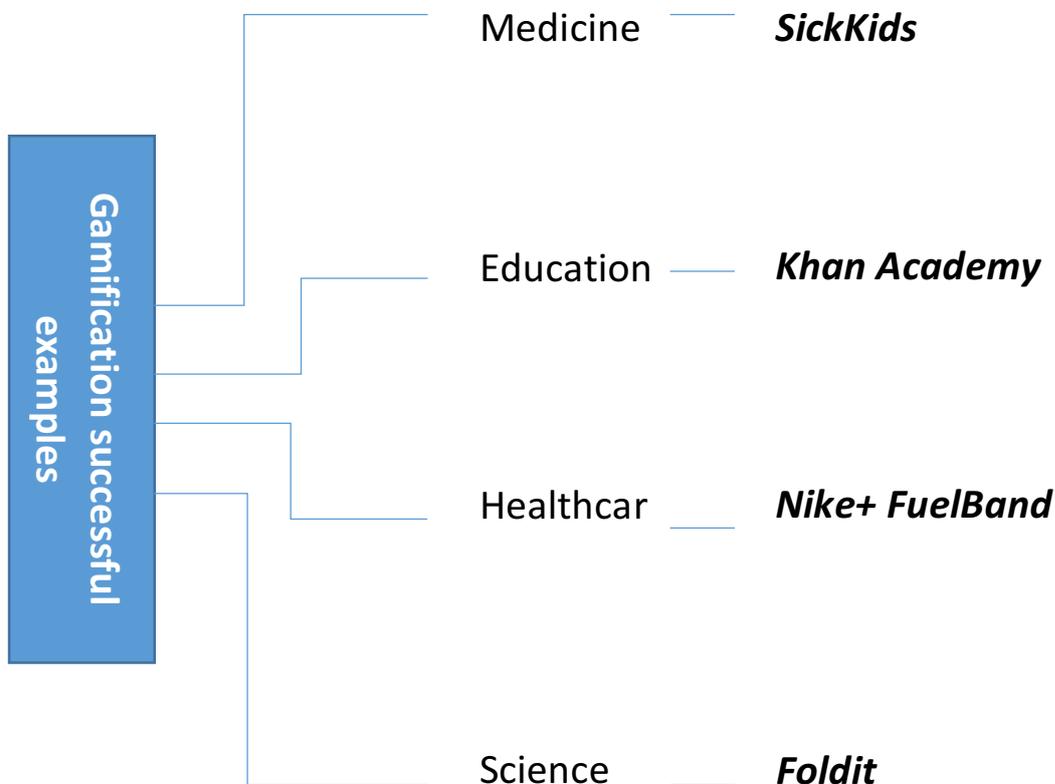
Conversely, gamified applications can be described as “artefacts with game elements” (Deterding, 2011). This implies that only a part of the system is designed with game-like components. According to Kevin Werbach (co-author of the book “For the win: how can game thinking revolutionize your business”), it is important to take in mind that gamification isn’t about building a full-fledged game. “It’s about using some elements of games, and because it operates at the level of elements, using gamification offers more flexibility than using a game” (Werbach, Hunter, 2012).

However, this distinction is still confusing and blurred. Clearly, gamification and serious games share similar traits and goals. They are not really distinct so that as points on a continuum. However, “what distinguish and sets them apart is the context in which game elements are applied. Gamification is more than a serious game as it expands game thinking and mechanics into-game environments, such a classroom or everyday life. Serious games apply game thinking and mechanics to “serious subjects” (<https://designingdigitally.com/blog/2013/08/gamification-or-serious-game-whats-difference>). As gamification matures, this still confusing distinction and the blurred boundary between the gamification domain and the other parallel and overlapping concepts will fade away. But it is still an ongoing process.

### 1.3. VIRTUOUS EXAMPLES IN THE COMMERCIAL-INDUSTRIAL AREA

Leaving aside the academic research for a moment, it is important to give a look to the evidence from the real application of the gamification tools. It seems that most of the hype around gamification derived from the numerous applications in the industrial field. Gamification has been widely applied in many different business domains and some successful evidences became popular since many of them are also used as case studies (**figure 1.8**). Although many sceptics claims that some of them are highly unreliable, this body of successful stories has served to raise the awareness around the gamification notion, and as a consequence stimulated the academic researchers to take a closer look on this theme. Here below are mentioned some of the most important application of game mechanics.

**Figure 1.8: Gamification most famous case studies**



**Source: Drafted by the author**

### 1.3.1 MEDICINE

In this field, a successful example that could be reported is that of the Hospital for Sick Children in Toronto, commonly known as SickKids. The hospital is a major paediatric hospital located on University Avenue in Toronto (<http://www.sickkids.ca/Paediatrics/index.html>), and as Canada's leading research hospital for children, the doctors need to gather information about the effectiveness of the various medical treatments so that to "use the best therapies while minimizing the pain for kids with cancer" (Burke, 2014). The kids should daily report and provide critical information about their pain levels to the doctors. But the treatments are painful and filling out their journals is hard, especially on bad days. Cundari, a Toronto-based communication agency, created Pain Squad, an iPhone app that was designed to collect daily information about children's pain level (Burke, 2014). The app creates an experience in which the kids are playing the role of a police officer and members of special force. Their mission was to hunt down pain by reporting their pain level twice a day. They also move up the ranks in the squad if they complete their pain report three days in a row. Furthermore, heroes from Canada's leading police television shows were recruited to create a series of inspirational videos to encourage the kids to complete their reports. Engaging the children at a deeper and meaningful level, the doctors have been able to gather important information for cancer treatment.

### 1.3.2 EDUCATION

Another important field of application is education. An important example is Khan Academy which is a non-profit educational organization created in 2006 by educator Salman Khan with a mission: "to create a free world-class education for anyone anywhere" (Burke, 2014). It uses gamification to drive users through learning journeys, rewarding them as they complete classes. Basically, it provides users with educational material and lessons via YouTube videos and automated exercises that help students to practice their skills and to achieve mastery (Burke,

2014). Feedbacks are provided on time: each answer is immediately scored right (with a green happy face) or wrong (with a round yellow sad face). “Energy points” are collected and detailed statistics on activities and progress over time are provided. Without going too deep in the detail, gamification is an important element that boost the students’ motivation at the Khan Academy.

### 1.3.3 HEALTHCARE

Nike+ is a leading edge example of gamification applied in the healthcare field. Nike’s digital sport division has built a profitable business around motivating and engaging their athletic customers to achieve their goals. It leveraged on the potentiality of gamification integrating game elements in their products. Nike first launched the Nike+ iPod sport kit in 2006, a wireless system that enabled Nike+ shoes to interact with an iPod to motivate athletes to achieve their goal. Nike’s mission is “to bring innovation and inspiration to every athlete in the world. If you have a body you are an athlete” (<https://about.nike.com>). Then, Nike launched Nike+ FuelBand in 2012 that was an activity tracker worn on the wrist that was connected with an Apple iPhone, iPad or Android device ([https://en.wikipedia.org/wiki/Nike%2B\\_FuelBand](https://en.wikipedia.org/wiki/Nike%2B_FuelBand)), as one can see in **figure 1.9**. It enables the athletes to track their physical activity, the steps taken daily and the amount of energy burned. This information is integrated into the Nike+ online community allowing users to set their personal fitness goals, monitor their progression and compare themselves to other community’s members. Furthermore, Nike gamified the fitness activities turning the tracked movements into NikeFuel points (Burke, 2014), which can be used to fix achievement, shared with friends and employed to engage others in competition.

**Figure 1.9: Nike+ FuelBand illustration**

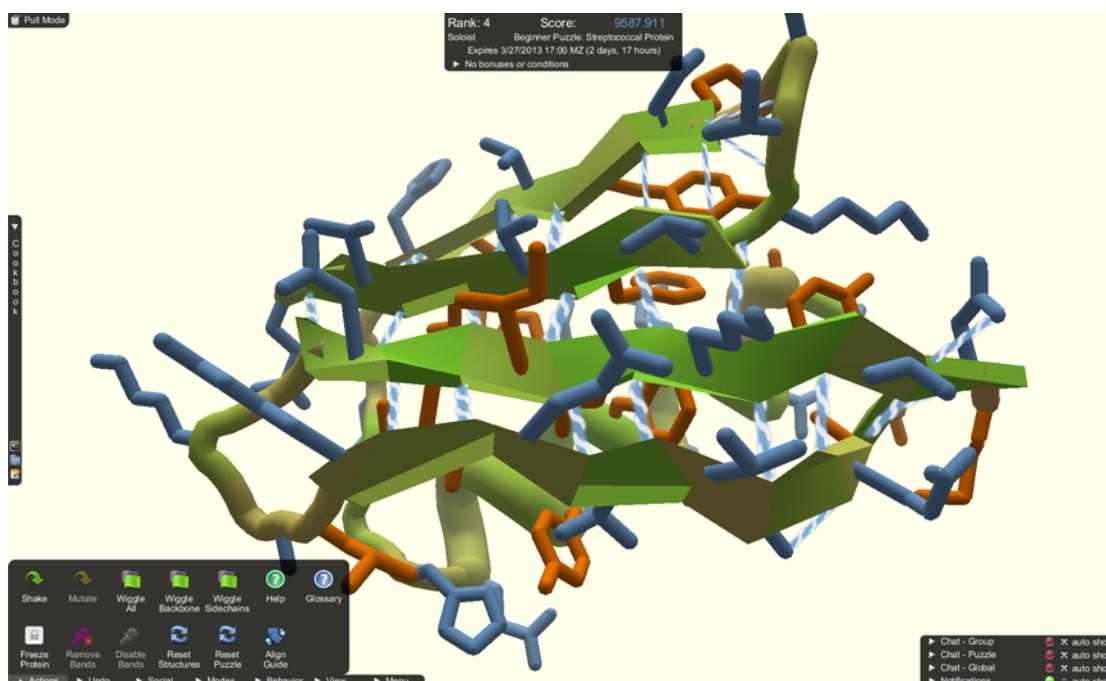


**Source:** <https://news.nike.com/news/nike-fuelband-app-for-android-now-available>

### 1.3.4 SCIENCE

In the field of science, we can mention the Foldit case which is an online video game about protein folding. It is part of an experimental research project developed by the University of Washington, Center for Game Science, in collaboration with the UW Department of Biochemistry. The objective of Foldit is “to predict the structure of a protein by taking advantage of humans’ puzzle-solving intuitions and having people play competitively to fold the best proteins”, as the company explains on its website (<https://fold.it/portal/info/about>). Gamification was exploited leveraging on our innate 3D spatial abilities to manipulate amino acid chains, as illustrated in **figure 1.10**.

**Figure 1.10: Foldit illustration**



**Source:** <https://fold.it/portal/info/about>

While these examples are not exhaustive of the infinite possible use of gamification, they are the most important with a meaningful impact on the field. They raised the interest of many practitioners and researchers that started to be more engaged and captivated by this new application of the game technology. Further in this review we will see that, apart from these lucky examples, gamification started to voice overwhelming doubts on its practical effectiveness. Because of the super-hyped expectations, along with the urgency to be more digitalized, many people in the business field started to adopt gamified systems in order to solve many problems inside their organizations. However, many of them failed because they unconsciously employed game tactics without any informed decisions. Superficially applying game mechanics in the organizational environments could not sustain the desired impacts on the enterprise activities. Inside the organizations, all the interventions and the activities are directed towards the fulfilment of the whole organization's purpose. So any developer, gamification designer or employer, before

any decision to apply gamification strategies, should consider the unique system that characterize the enterprise environment.

## 1.4. GAMIFICATION “AT” WORK

As a new model intended to change human behaviour by adding elements of fun and play to existing information system, gamification has been exponentially and widely adopted with the intention to booster the motivation of people. Gamification has been used in multiple domains: health care (Health Month, Nike+), Finance (mint.com), education (Khan academy, StackOverflow), insurance (MindBloom) are only few examples in the consumer domain. Inspired by the success of some of these cases, business organizations are increasingly recognizing the beneficial influence of fun and playfulness in workplace activities.

### 1.4.1 WORK GAMIFICATION

Though the aforementioned definition by Deterding give us a useful insight to understand a general meaning of gamification and its dissimilarity from other parallel concepts, it is apt in the domain of consumer market. Indeed, B. Burke (2014) identified three target audience for gamified solutions:

**Customer focus:** gamification is employed to commercial purpose. Customers are the targeted segment of the gamified solutions. As the users are divided in group on the basis of the consumer characteristics, gamification strategies are much more specific and customized to add value to the product offering and, ultimately, to engage customers and rise the profit.

**Employee focus:** gamification is employed for motivational purpose. Employees are the targeted audience of the gamified solution and as they are a heterogeneous group with their own personal goal that can differ from the company’s one, gamification initiatives are much more limited and are intended to foster intrinsic motivation.

**Community of interest focus:** players in these games are self-selecting group and they opt for gamified solutions openly available on the internet on the basis of their personal interest. For example, in this case gamified applications can be used to help those interested to develop new language skills or to engage people keen in scientific study in solving complex scientific challenge as in the Foldit case.

To be suited to the enterprise domain, the term “gamification” need other systematic specifications. B. K. Neeli (2015) formulate a definition that is: “Gamification in the enterprise is the usage of game design elements to engage, motivate, and persuade employees, customers, and partners on work and initiatives of the enterprise, to develop positive attitudes, personal and professional achievements, and productive behaviours.” This definition augments the Deterding’s one by adding the purpose (to engage, motivate and persuade), the participants (employees, customers, partners) and the outcomes (develop positive attitudes, personal and professional achievements and productive behaviours) to the gamified system fostering a proper use of the gamification inside the organizations. Another definition of the gamified workplace is given by F. Opreescu et al (2014): “as organizations that use gamification to transform some of their work processes into a game-like experience for the employees by applying selected principles of game design and game interaction”. As can be noted, gamification in the enterprise requires a separate analysis because of the multiple aspects that need to be considered as specific to organizational area like motivation, reason for engagement, impact of failure, etc. The Gartner’s prediction that 80% of gamification initiatives in the enterprise would ultimately fail, could be primarily due to the employment of design principles suited for the consumer market inside the organization and to the missed long term vision and objectives of the companies.

For this reason, the following analysis is intended to outline the differences between gamification in consumer and enterprise market. Though the mechanism and the process could be similar for both markets, they require different approaches. The analysis and the design need to be different.

## 1.4.2 DIFFERENCES BETWEEN CONSUMER CONTEXT AND ENTERPRISE CONTEXT

To understand why simply translating the processes and the tactics used in the consumer market in the enterprise domain is wrongful, we need to outline which are most important differences to consider when designing a gamified system. Leveraging on Neeli's (2015) study, we define eight aspects for which gamification for the consumer market and gamification applied inside organizations are different.

**Purpose of gamification.** Gamification initiatives in the consumer markets are geared to induce specific actions from the “players” (Neeli, 2015). In the enterprise setting instead, the initiatives need to inspire specific actions but also to meet the enterprise goals and the personal development aspirations of the users. In the context of enterprise, the challenge is arduous: the usage of game mechanics and the purpose should take into account the whole enterprise and cannot be bounded to the specific action alone.

**Reason for engagement.** Gamification strategies in the consumer domain are built for specific users. The users are already motivated as they see the set goals as their own. For example, the Nike+ is design for people who already feel the necessity for a healthy lifestyle (Neeli, 2015). So while gamification for the consumer market can be made specific to various player personalities as the objective is to make enable goals set by the consumer himself, gamification for the enterprise context should be follow the overall organizational goal considering also employees' needs. Thus, we can say that the reason for engagement in the consumer domain is a given, as they choose commit to the gamified application by their volition. In the enterprise context, instead, the use of game mechanics is bounded by the goal of management and gamified applications are built in order to generate reasons for engagement and commitment in the employee's mind, as the goals choose by the employer. The users need to be persuaded to play and also they need to be motivated and engaged considering the overall organizational goal.

**Design of gamified environment.** In consumer segment, the design of gamified environments is highly open based on the targeted audience (Neeli, 2015). Elements like fantasy, choice, paradox of control, etc. can be easily integrated in the gamified system based on the consumer preference and characteristics. However, in the context of enterprise, these aspects are bounded and should be suited into the broader organization's goal and culture (Neeli, 2015). In the consumer market, the game rules can be transparent and are one of the mechanics that can be used to introduce surprise and curiosity, while in the enterprise environment these are mandatorily transparent to create trust and acceptance.

**Creative freedom.** Game characteristics such as fantasy elements, graphics, narratives etc., are freely use by game designers to provide fun and better user experience in the consumer market context (Neeli, 2015). On the other hand, in the enterprise context, company's culture, ethics and other aspects limit the usage of these options.

**Factors of Motivation.** As previously mentioned, in a consumer gamified environment the users are already motivated by their own goals. Standard mechanics like rewards, points, status, etc. are external reinforcements that provide external motivation and instant gratification to keep user attention. But in the context of an enterprise, these mechanics are not sufficient. Users need to be intrinsically stimulated. The primary design objective here is to internalize the motivational factors as the overall objective of the company is different from the user objective. Theories like Self Determination Theory (Ryan, Deci, 2000), provide a detail on how the motivation factors can be internalized (Neeli, 2015).

**Impact of failure.** Failure of a gamification initiative can be easily managed in the consumer market because of the limited impact on the other applications from the same provider (Neeli, 2015). It could be possible that the target audience itself has changed so new elements can be introduced on the basis of the feedback of the failed strategy, without any implication on the future initiatives. Conversely, in the

context of enterprise, any failed plan to engage users will negatively impact the other future initiatives. Because of the long term perspectives of the company's strategy, a negative perception on the players can lead to the rejection of any other future program.

**Design of the work.** In the context of consumer gamification, the work can be designed to fit to the specific characteristics of a targeted segment of players. The work itself can be designed to be fun. Any type of game element can be employed because the ultimate objective is to engage the consumer. On the other hand, in the context of enterprise, the options could be limited as the work is oriented to provide value to the end customer and the engaging the user (employee) is secondary (Neeli, 2015).

**Conflict of interest.** The difference resides mainly in the employment of the mechanics like reward, statuses, etc. In the consumer segment, these are typically used to report the level achieved, the progression reached or simply the profile of a player and the absolute value perceived is limited within the gamified environment (Neeli, 2015). Conversely, in the enterprise context, these gamified mechanics could conflict with the organizational roles. They can be incompatible with the existing enterprise mechanisms. For example, how a status in gamification affects the career progression or how game rewards work with compensation (Neeli, 2015). So there is a need to delimit the game environment and fix the interdependencies between the game mechanics and the enterprise rules.

As we can see, the differences are consistent. While in the consumer market these is much more freedom in the application of game mechanics, in the enterprise context this is not possible. The culture, the objective and the general mechanism of the company need to be considered in the design of gamified application. Furthermore, the targeted users are different. In the context of consumer market, the customers are segmented on the basis of their own interest and are already intrinsically motivated. In the enterprise context instead, employees are usually a

heterogeneous group. Gamification need to be applied considering all these fundamental differences.

### 1.4.3 LEVELS OF GAMIFICATION

The complex environment of the enterprise context, allow game designers to integrate game mechanics at different level. These can be assimilated with the underlying activities performed inside the company at various degree, as illustrated in **figure 1.11**. The different levels of gamifications are:

**Superficial:** game mechanics are used independently from the activity performed inside the organization (Neeli, 2015). Points, badges etc. are only superficially correlated with the task without any qualitative consideration of the job (for example, ten points for every activity undertaken).

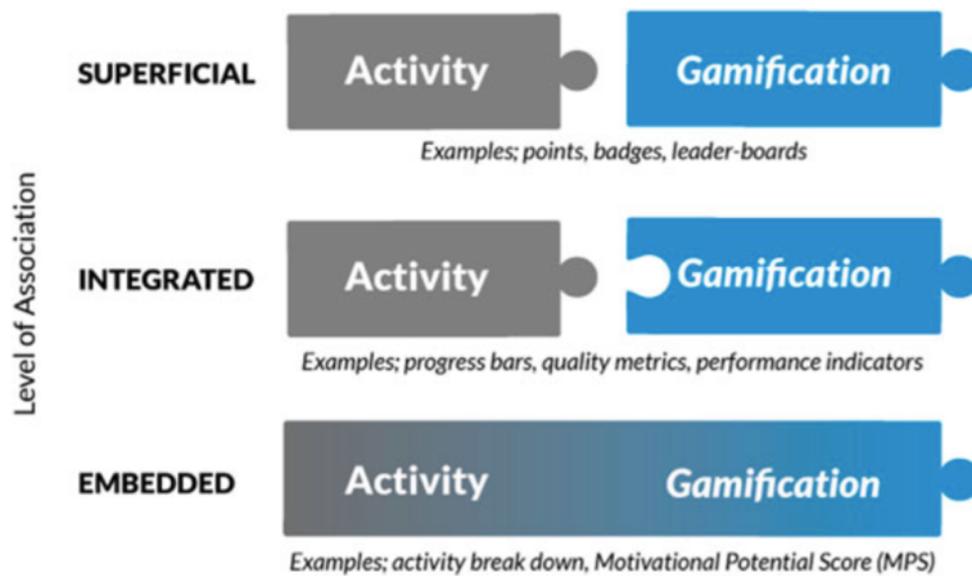
**Integrated:** game mechanics are integrated into the activity performed by users (Neeli, 2015). This means that the game elements such as points are assigned based on the progress and the quality of work.

**Embedded:** the enterprise activities are designed considering game mechanics as fundamental element to foster user engagement and motivation (for example, an activity is divided into multiple sub-task, each providing a stage in a quest).

As the organization is progressively committing itself to foster intrinsic motivation rather than extrinsic motivation, it will carry out a gamified application that is even more bound to enterprise activities. While short term goals are achievable with a superficial application of game mechanics, the long term vision of management is only pursuable through an embedded implementation of such mechanics. At first, gamification was associated with the famous PBL (point, badge, leaderboard) triad. Nowadays, as gamification mature, there are more and more experts in the gamification domain that claims that such superficial use of gamification inside the enterprise is not sufficient. Since the management of people

inside the organization has to deal with the human being, an effective strategy that is intended to foster a change management process need to be more addressed towards intrinsic motivation.

**Figure 1.11: Levels of gamification in enterprise**



Source: Neeli (2015)

*Throughout this first introduction of gamification, we saw that while its definition seems so simple, in reality is far from being trivial. There are many parallel and overlapping concepts that have similar traits and goals such that is still premature to distinguish them clearly as gamification mature.*

*Along its evolution, it raised many issues mainly about its application inside the enterprise. Among these we remember that, while in the gamification for commercial purposes the reason for engagement to such gamified activities is a given, in the enterprise settings is not an established fact. Indeed, in the former case, users are already intrinsically motivated as they set goals as their own. Conversely in enterprise systems employees need to be engaged and motivated since they are bounded to follow rules and objectives that are set by the management. As gamification mature, many studies and findings are leveraging on this issue.*

*The following chapter give some insight on how the research on this matter have tackled this issue. We will see that studies about workplace games were already present years before the appearance of the boom of gamification. Furthermore, we will give a look to some insights about intrinsic motivation and how this matter was addressed by the academia field.*

# Chapter 2

## WORKPLACE GAMIFICATION

*While Gamification as we intended it today is a new-born phenomenon that has captured the attention of many people, games were already the object of many studies intended to observe their spontaneous arrangement inside organizations. But while the latter were employee-created games and sprang up from employees themselves, gamification applications are built as employer-imposed games where the goals of the games themselves are designed to reinforce the goals and purposes of management. Here it comes the issue of mandatory fun that we outline in the first part of this chapter.*

*Furthermore, as gamification evolves, studies started to concentrate their attention to the psychology of users and how to create effective gamified systems that can foster intrinsic motivation. To this intent, in this chapter we will give a look to the principal psychological and sociological theories that were used to explore and give a theoretical basis to the gamification phenomenon.*

*Lastly, we will carry out a simple categorization of the principal uses of gamification inside organizations in order to give a look to the principal exploitations of such instrument in the enterprise settings.*

## 2.1 THE RELATION BETWEEN WORK AND PLAY: AN APPARENT INCONGRUITY

In the theoretical literature, long before the appearance of the gamification movement, games were already the object of many studies intended to observe their spontaneous arrangement inside organizations. At first, as games were intended only for pure entertainment purpose we do not distinguish it from play, but we interchangeably employ both as opposite to work. In these first studies, game and work were regarded as contradictory. The differences between the two activities have often been pointed out: games have to do with leisure activities and work is always described as incompatible with the first to the extent that the existence of time and spaces dedicated exclusively to one or the other have been underlined frequently. This dichotomy is outlined also by Caillos, who stated (Caillos, 1967, p. 9): “[a game] always results in an atmosphere of rest and entertainment. It relaxes and amuses. It recalls an activity without any commitments and without consequences in real life. It is opposed to work; lost time against utilized time. A game produces nothing: neither goods, nor products. It is essentially sterile”.

Among the features listed by some authors and associated with games, that feed this diametrical opposition with the concept of work, we could mention: “freely agreed rules”, the fact that is “autotelic” and has no other goal but its own enactment, and its components of “delight and enthusiasm” or “the joy and relaxation” that characterized it.

However, far from standing in opposition to each other, play and work started to be seen, in recent years, as two close activities.

First of all, other characteristics of games, far from those we have already mentioned, such as the individual and the social dimensions of a game, the uncertainty it entails, as well as the tension associated with achieving success or winning, could at first challenge this traditional opposition between the two terms (Savignac, 2016). In his recent analyses of games, Brougère (2005) revolutionized this historical opposition providing a new definition of game: “a game is something that is associated with a figurative dimension, it generates a decision-making process (for the player in the game) according to the mechanics that govern the

decision (rules), it is half uncertain and half frivolous and finally its actions would not lead to the same results in a non-game context". "Most importantly, these elements should be interpreted in relation to the marched unpredictability that characterized their force and presence in the game" (Savignac, 2016). This close relationship between play and work is also pointed out by Henriot (Henriot, 1989, p.197): "If we consider the psychological dimension of the term, there is work in every game: attention work, perception work, muscular work, intellectual work — together with those elements that any kind of work usually involves: effort and strain. In all likelihood, this is the reason why, in terms of behavior, it is difficult, and even impossible in certain cases, to distinguish between game and work".

"Can play at work itself be useful, though?

Researches conducted in the workplace by several authors, especially those writing about the sociology of work, confirmed this connection between play and work. Their studies show that this conflictual nature of these two activities must be reconsidered. In particular, they found that games are actually used to do the work and are mutually supportive. As Brown (2009) stated, "What I have found is that neither one can thrive without the other. We need newness of play, its sense of flow, and being in the moment. We need the sense of discovery and liveliness that it provides. We also need the purpose of work, the economic stability it offers, the sense that we are doing service for others, that we are needed and integrated into our world. And most of us need also to feel competent" (Brown, et. all. 2009). Games are useful in the workplace in the sense that they allow playful relationships on the job as well as fighting against boredom, uninvolvedness and disengagement. Turning work into a game may provide a better workplace in which the reality is more manageable and achievable. By respecting our biologically programmed need for play, we can help workers to deal with difficulties in their job, provide a sense of expansiveness, promote mastery of their craft. Consequently, play helps to find lasting joy and satisfaction in our work.

Play combined with work, can have a transformative and recreative effect that has a favourable outcome on creativity. "Play is nature's greatest tool for

creating new neural networks and for reconciling cognitive difficulties. The abilities to make new patterns, find the unusual among the common, and spark curiosity and alert observation are all fostered by being in a state of play. When we play, dilemmas and challenges will naturally filter through the unconscious mind and work themselves out. It is not at all uncommon for people to come back not only reenergized, but also with fresh ideas for work.” (Brown, et. all. 2009).

Furthermore, a playful environment open people to experience some failure. In the real world, work is an activity that stress us out, takes time away from our friends and family and comes with too much criticism to the point that we are afraid of failing. Conversely, mastering a game is all about experimentation. Failure doesn't feel so daunting because you can always start over. Players are continually motivated to try again even if they loose because they are acknowledge that they can never permanently loose if they strive for improvement. Games are useful in this sense: they allow a new relationship with the failure that is used as a learning experience, encouraging to try new and different approach to find better solutions. According to Savignac, taking up Dujarier work (Dujarier, 2015), “turning work into a game may consist of creating a collective construction of a certain ‘reality’ which help us manage to achieve it” (Savignac, E. 2016).

Finally, there is nothing like true play to promote social cohesion at work. Team-building exercises is a common practice to get people more involved and attuned to each other. Through the use of some sort of play, groups pull together in pursuit of a common goal and get more connected with the others.

Another important contribution is the one provided by Jane McGonigal (2012), a game designer and author of the influential 2011 book “Reality is broken”. She confirms this misleading opposition between work and games. She defines games as “hard work that we choose for ourselves”. This is a completely turning point as we don't normally think of games as hard work. Far from being opposite of work, McGonigal assert that “playing a good game is an extreme emotional activation. All of the neurological and physiological systems that underline happiness — our attention systems, our reward center, our motivation systems, our emotion and memory centers — are fully activated by gameplay”. It is an

opportunity to focus our energy at something we are good at that prevent us from boredom and depression (Sutton-Smith, B. 2001).

What we usually describe as a “relaxing” kind of fun — watching television, window shopping, eating chocolate, or just chilling — doesn’t make us feel better. Instead, what puts us in precisely the right frame of mind and physical condition to generate all kinds of positive emotions and experiences, is what is called eustress (a combination of the Greek eu, for “well-being, and stress). “Hard fun is what happens when we experience positive stress”. It is a stressful situation that we choose on purpose, and so we are confident and optimistic as we feel confident of meeting the challenge. From a physiological and a neurological point of view, eustress is virtually identical to negative stress: we produce adrenaline, our blood flow increases to the attention control centers of the brain and the reward circuitry is activated. What changes is our frame of mind. We are priming our mind for happiness and optimism in a way that is more mood-boosting than relaxing. “As long as we feel capable of meeting the challenge, we report being highly motivated, extremely interested, and positively engaged by stressful situations. And these are the key emotional states that correspond with overall-being and life satisfaction” (McGonigal, J., 2011).

Getting oneself in a state of play could help employees to tackle the urgent purposefulness and the associated anxiety. Framing work as a challenge that we purposefully face in order to feel wellbeing and satisfaction for our job is the right path to follow.

To conclude, what we could infer from these authors, is that games seem to have a transformative power that has a favourable effect on the demanding and boring aspects associated with work. Games represent here an antidote against the reactions of refusal for the task that has to be carried out, while also allowing employees to get involved in their work again. What a boost to global net happiness it would be if we choose to be positively engaged in our work. Games make it bearable through a sort of symbolic compensation that keep workers attentive in the workplace and it could be represented by the sense of accomplishment, self-expression, victories stratagems, applied knowledge and skills.

As Savignac stated about games, “far from being opposed to work, they actually complement it: they represent a solution adopted so that work can be done” (Savignac, E. 2016).

## 2.2 IS GAMIFICATION A MANDATORY FUN?

Scholars have been studying the use of the games in business for decades. Games at work was a well-known practice among workers from an early time and has been noted by organizational scholars since the 1930s, but there is archeological evidence that workplace games were present as far as back as ancient Egypt (Mollick, Rothbard, 2014). Early management research studied many workplace games.

At first, the assumption was that games were a mere distraction from the task at hand. In fact, in 1959 a study conducted by a Duke’s sociologist named Donald F. Roy (1959) of Chicago machine-line workers, working twelve-hour shifts, found that laborers coped with the monotony of their jobs by making them more fun. In his study titled “Banana time: job application and informal interaction” he found out that, since employees had little control over their time or task, games helped them to deal with the “beast of monotony”, improve their morale and their affective experience of work. As the New Yorker reports:

“... workers consciously broke up their day with food breaks (“peach time”, “fish time”, “coke time”); self-imposed, if meaningless, benchmarks (“stamp a thousand free shapes in a row”); and even practical jokes, such as a daily ritual in which one employees stole and ate another’s banana, participating a volley of “protest and denunciations” from the victim—who nevertheless always made sure to bring another banana to work the next day” (The New Yorker, 2013).

Through this kind of ritualized fun, Roy found, “the ‘beast of boredom’ was gentled to the harmlessness of a kitten”.

Michael Burawoy (1979), an authority on the relationship between games and work, expanded the study of the game at work to show how they had subtle but important benefits to management. At the time in fact, management tolerated the games to an extent but typically considered them time-waster and a form of resistance. But Burawoy, unlike several of his predecessors, demonstrated that games are not organized against management (Savignac, 2016). The primary game he discussed was “Making Out”, where the goal of workers was to achieve an individual production goal over the quota level. He found that “the workers there had become obsessed with a factory-wide competition to beat individual production quotas. What’s more, employees were more enthralled by the game itself than by the modest cash prize for which they were competing. Games, the researcher concluded, could divert factory workers’s away from collective bargaining and toward internal competition”, as the New Yorker reported. Furthermore, the game provided a variety of “social and psychological rewards”, such as the “reduction of fatigue, passing time, relieving boredom, and so on” (Burawoy, 1979). Therefore, the game improved workers affect by changing how they experienced work, and channelling their dissatisfaction into inter-worker competition rather than viewing management as their real competition. In doing so, games started to be considered in a new positive way. Far from being a mere distraction from the task, games encouraged workers to consent to the factory owners’ production goals.

As a result, since Burawoy’s study, games started to become ubiquitous in the work setting, and managers have begun to take a new interest in workplace game, rather than merely tolerating their natural evolution between workers. At a certain point, there was a transition from viewing games as something that hurt production to a management tool. This is new insight that drove managers to integrate games into the work environment through the process that we well known as “gamification”.

But what is the shift from the games in Roy’s study to the games that are “built on the top of the goals of management” or what we call today gamification? (New Yorker). While the former are employee-created games and sprang up from employees themselves, the latter are “employer-imposed games where the goals of

the games are designed to reinforce the goals and purpose of the employer” (Mollick, Rothbard, 2014).

Here, the “critical paradox” of “mandatory fun” come into focus, as Mollick and Rothbard outlined.

To understand this powerful assumption, it is essential to know about the idea that lies behind the concept of fun. “The link between games and affective experience at work hinges on the belief that games are fun and that fun from games can transfer to feelings about works” (Mollick, Rothbard, 2014). Yet surprisingly, the word “fun” is rarely present in almost academic discussions on games, and, indeed, is rarely invoked in the management literature at all, with some exceptions where, to the extent that fun is discussed, it is presented as an outcome of constructs, such as intrinsic motivation. However, for the purpose of explaining workplace game and the rise of managerially-imposed gamification, the two authors tried to figure out a re-evaluation of the idea of fun and how games generate it. They assumed that the “fun” associated with games and gamification at work is important in itself and is different from how is discussed in construct such as intrinsic motivation. As the two Wharton management professors stated:

In gamification, unlike intrinsic motivation, “fun” does not necessarily arise from a volitional, inherent interest in the work task itself, but rather from a game that makes tasks that are otherwise not inherently interesting more fun. Thus there is an externally-imposed structure that is associated with the task, which does not make the task itself more enjoyable; rather it makes the work experience more enjoyable.

Mollick and Rothbard (2014, p. 10) also point out that “where intrinsic motivation, for example, requires a task to be inherently rewarding or engaging, gamification acknowledges that a task is not inherently rewarding or engaging, and then seeks to hide the non-motivating nature of the task under a layer of fun games— a process sometimes referred to in the literature on game design as ‘chocolate covered broccoli’”. So whereas traditional management techniques change the work process itself to improve enjoyment among workers, gamification

give up on making work itself more meaningful or enjoyable by setting a “game layer” that change the experience of work without redesigning the actual job.

But fun is not enough. While gamification is focused on improving the employee’s affective experience at work, there is a difference between good and bad gamification. Basically when managers provide a game that is built into the work experience, they are essentially imposing that game on the employees. The critical paradox underlying the notion of “mandatory fun”, as pointed out by Mollick and Rothbard (2014, p. 14), is fundamentally about “the desire to make work more pleasant for people or to distract them from the unpleasant and taxing aspects of the work, yet it also requires the managers decide what it is that will be pleasurable to the employees”.

To solve this paradox and understand when a game is engaging and serves as an affective event that leads to increased positive affect and eventually even improved performance or when is aggravating employees, is critical to consider to what extent employees voluntary consent to playing the game and opt into the game experience, rather than seeing it as an imposition of management. As gamification is not driven organically by employees as in the Roy’s study, but instead is imposed from the top by managers and explicitly designed to reinforce their goals, employees are not necessarily consenting to the game and its legitimate place in the workplace.

The concept of consent has been seen as the decision of individual workers to actively cooperate with managerial goals. While it could be described as positive attitude towards management and their decisions that might have some behavioral manifestations, it also have cognitive response to managerial initiatives. Mollusk and Rothbard (2014), building on Burawoy’s work, look at three cognitive indicators.

The first indicator of consent entails clearly understanding of the rules of the game. The presence of the rules and the adherence to them is required for a game to be played. According to Burawoy (1979, p. 81), “the very activity of playing a game generates consent with respect to its rules”. If the rules of the game are not clear or are missing, it would be a significant impediment to workers’ consent to actively participate in production and collaborate towards management goals.

The second indicator of consent is the notion of perceived sense of justice and fairness relating to managerial initiatives, conceived as procedural justice, that is the sense of fairness of the process by which rules and managerial initiatives are enacted, and as perception that the initiative itself is fair and just.

The final indicator of consent is active engagement, that refers to people voluntarily attending to, and being absorbed by managerial initiatives. While in games initiated by employees, voluntary engagement is a given, otherwise they would stop playing it, in gamification, however, because games are being imposed by management, engagement is a voluntary choice of the employees as a sign that they are willing to actively cooperate. "Thus, their engagement is not a given, but rather a component of their consent" (Mollick and Rothbard, 2014).

"Consent, in the sense of active cooperation in an otherwise mandatory activity, entails the presence of all three indicators" (Mollick, Rothbard, 2014, p. 15). It plays an important role since imposed activities, like gamification, do not automatically foster the active cooperation of employees, and thus is a critical determinant of how employees affectively respond and from a performance point of view.

In their second study, the authors also discovered that in the context of gamification at work, there are potentially two sources of consent.

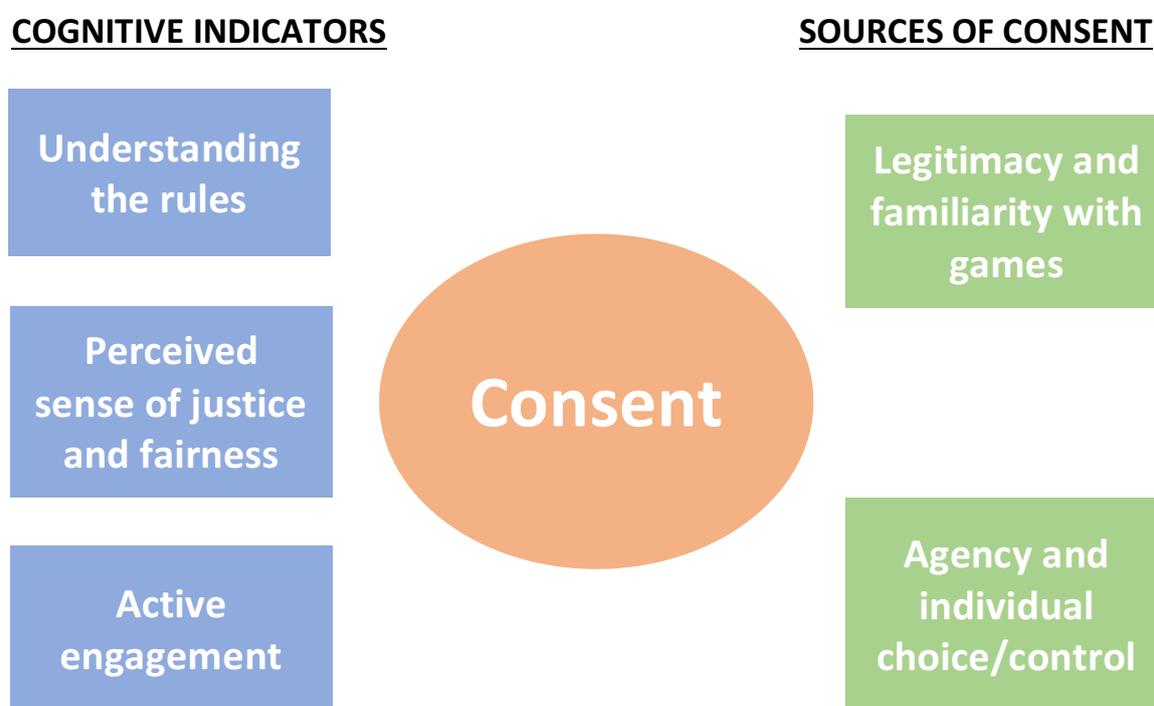
The first source of consent rests on how much employees view games as legitimate, in the sense of how much they feel themselves comfortable and familiar with games as they use it generally in their lives outside of work.

The second source of consent lies in the feeling that the employees have some ability to exert agency or a sense of individual choice and or control over the gamification process. Making the process of gamification more cooperative and not imposed, for example, giving people a choice of theme of the game, give them a feeling of empowerment that helps them embrace the game itself.

To conclude, the paradox of mandatory fun poses a real challenge for organizations. Engaging employees requires more than imposing a layer of fun games in the workplace. "Consent is not just about participation and engagement, it is also about the belief that managerial goals are legitimate, appropriate, and just

and entails an active acceptance of such goals” (Mollick, Rothbard, 2014). Gamification is not just about fun. It can’t be just a piece brought in an imposed. It’s about how you engage enough that employees want to stay at work and pursue the management goals. In doing this, managers should ensure that games themselves are fair, engaging and have clear rules. Furthermore, they should foster the perceptions of individual agency through, for example, the solicitation of ideas from employees about what games might be fun, ensuring that employees feel that they have input into the game or workplace initiatives. The idea that a particular game is not just imposed from the top, but rather has elements emerged from the ideas of workers and is not simply unremunerated work, might help to undermine some of the “mandatory” aspects of the fun.

**Figure 2.1: Cognitive indicators and sources of consent**



**Source: Mollick, Rothbard, 2014. Drafted by the author**

## 2.3 THE GAME LAYER: APPROACHES FOR GAMIFICATION DESIGN

After this first introduction about gamification in the workplace, a consideration of gamification design elements is needed in order to create a successful engagement experience. As Gartner stated in 2012, many gamification-based solutions would fail to meet their business objectives primarily because of the absence of a clear and formal design process. The obvious conclusion of Gartner's point of view is that: a clear design strategy is the key to success in gamification. However, as ascertained by many game designers, there is a lack of systems of design framework within which we can explain what makes gamification effective or not. Or better still, there are a lot of design framework available now in the literature, but each of them are characterized by different features and there is a lack of consent about their effective validity, probably due to the fact that gamification is still a relatively new and experimental strategy.

Before analysing the most common gamification design frameworks, we define "game design" as "the action of making sense of things related to game" or as "the act of deciding what a game should be" (Schell, 2008). In this regard, a distinction between gamification design and game design is of utmost importance.

Basically, the first important difference is the fact that the purpose of gamification design is quite different from that of game design. While the former is used to enhance the engagement in different context, the latter is directed towards pure entertainment, as explicitly evidenced in the Marczewski's scheme (<https://www.gamified.uk/2014/03/25/gamification-design-vs-game-design/>) (**Figure 2.3**). Creating a gamified system will always differ from creating a game. The starting point for game design is the basic idea of enjoyment, whereas gamification is focalized toward business objectives. Nevertheless, there is a thin connection between the two types of design since the basics of gamification rely heavily on the principles of game design theory.

The second important difference is that gamification systems are required to impact the real world in some way, while keeping people engaged, as simplified by the **figure 2.2**. In doing this they should contain components of game aligned with

real world purposes. The creators of gamification systems are expected to overcome the difficult challenge of providing appealing experiences, while at the same time satisfying the real-world purposes for which the gamified systems have been created. Therefore, gamification should not be the arbitrary selection and implementation of game components (such as points, badges and leaderboards) in real-world application, but a concise approach to design is needed, to ensure that gamification is both effective and efficient.

Third, gamification is not focusing on game and trying to create a game from a system, but it extracts the core components from games and uses them in the design of a system. The result is not a game, but a system that is more enjoyable as it engages and motivates the user to continue working and improving (Wood, Reiners, 2015)

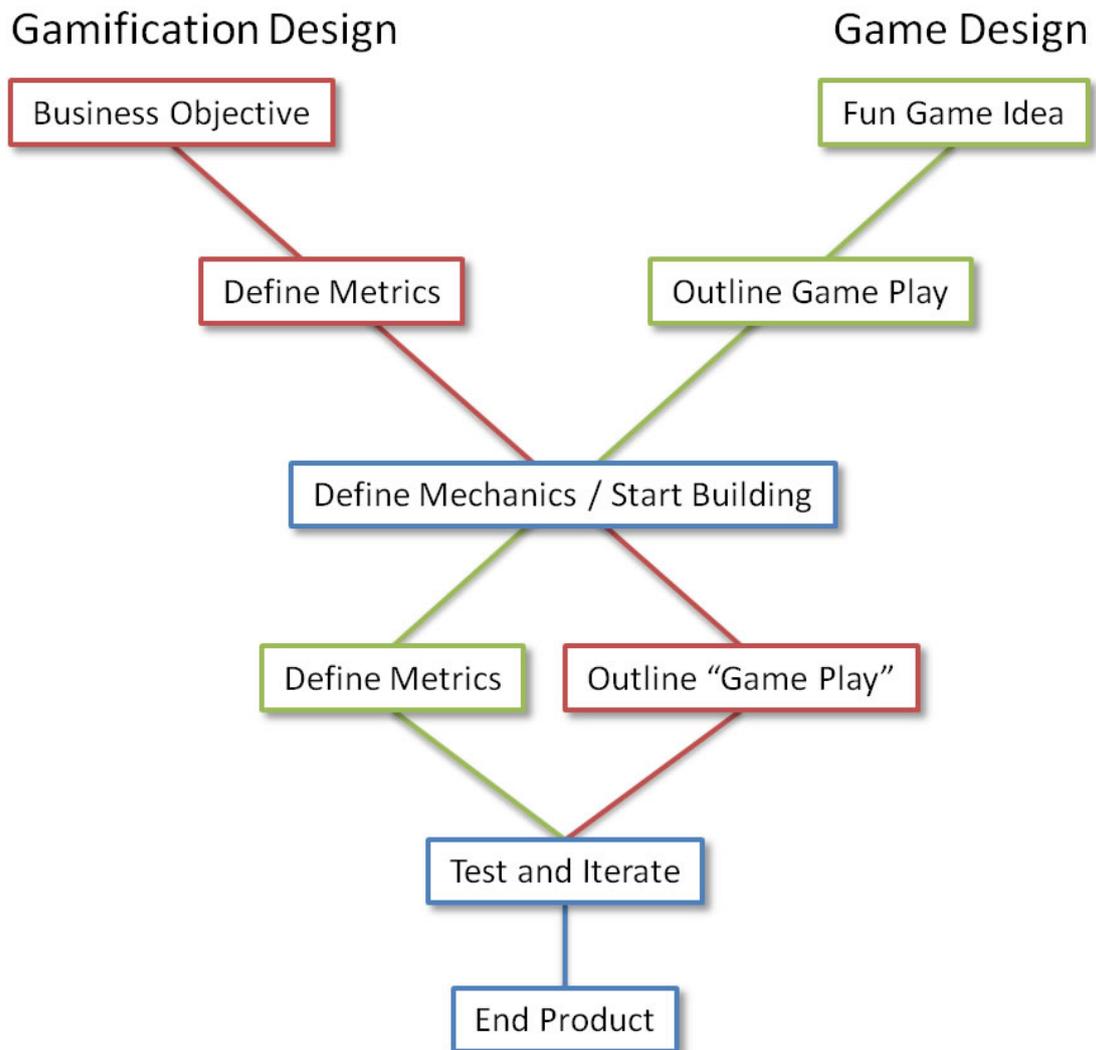
In that respect, in the next section we present two conceptual structures, adapted from game design literature, intended to serve as a support or a guide for the building of effective gamified systems. Specifically, first we introduce a gamification design framework as it is intended by Wood and Reiners. Then, we present the MDA framework that is developed from the game design approach but was recently conformed to design gamification environments.

**Figure 2.2: The use of gameful experience**



**Source: Vegt et al., 2015**

**Figure 2.3: Gamification design vs game design**



Source: <https://www.gamified.uk/2014/03/25/gamification-design-vs-game-design/>

### 2.3.1 WOOD AND REINERS' FRAMEWORK

As we explained earlier in this dissertation, gamification is not about turning work activities into a game; but instead is about to redesign work process with a game layer for the purpose of creating a more enjoyable experience. To increase employees' affective experience and engagement as well as their motivation to pursue the management goals, a careful combination of a range of building blocks into the design and structure of a given process, need to be accomplished. Taking up Werback and Hunter's framework (2012), Wood and Reiners examine key gamification elements: components (tools and approaches that can be used), mechanics (essential actions describing the way in which these components drive micro-level behaviors), and dynamics (outcomes relating to the behaviors, interactions, and intentions of players) (Wood, Reiners, 2015).

One of the very common misconceptions of gamification is it is as simple as the addition of points, badges, or leaderboard-based systems (the PBLs triad) to existing activities (Wood, Reiners, 2015). However, in doing this, only particular user behaviors will be influenced and modified, with the consequence that the desired change of behaviors in general will not be necessarily achieved. To implement a really effective gamification, the different components and mechanics must be designed and thought through in an effort to support design business dynamics. These dynamics, in their turn, must be clearly related to key business process and desired outcomes.

In order to have a clear understanding of what 'components', 'mechanics' and 'dynamics' are, in the following section we present these design items as conceived by Wood and Reiners, taking up Werback and Hunter work (2012), who conceived these game elements as interrelated with each other in a sort of hierarchical relationship (**figure 2.4**).

## **COMPONENTS**

The components are the more specific forms that mechanics and dynamics can take. The most important components are:

- points: the numerical representations of game progression
- badges: the visual representation of some pre-defined achievement within the gamified process, which are generally known in advance to motivate the user to master their scores and achieve personal goals without direct competition.
- leaderboards: the visual display of user's progression and relative success in comparison to opponents.
- quests: predefined challenges with objectives and rewards.
- levels: defined steps in player progression with incremental difficulty.
- virtual goods: game assets with perceived or real-money value.
- combat: a defined battle, typically short-lived.
- content unlocking: aspects available only when players reach certain objectives.
- gifting: opportunities to shatter resources with others.
- social graphs: visual representation of player's social network within the game.
- teams: defined group of players working together for a common goal.
- avatars: visual representations of a player character.

## **MECHANICS**

The mechanics are concepts of game design process that are slightly more abstract than the components and define potential actions by and states of the user. They are a sort of guidelines that often relates to the ongoing nature of how specific components evolve over time and how users interact with the framework (Wood, Reiners, 2015). They generally define how the user progress through the game, what

are the possible reactions on an occurring event, and what kind of situation influences the behavior of the user. The best know mechanics are:

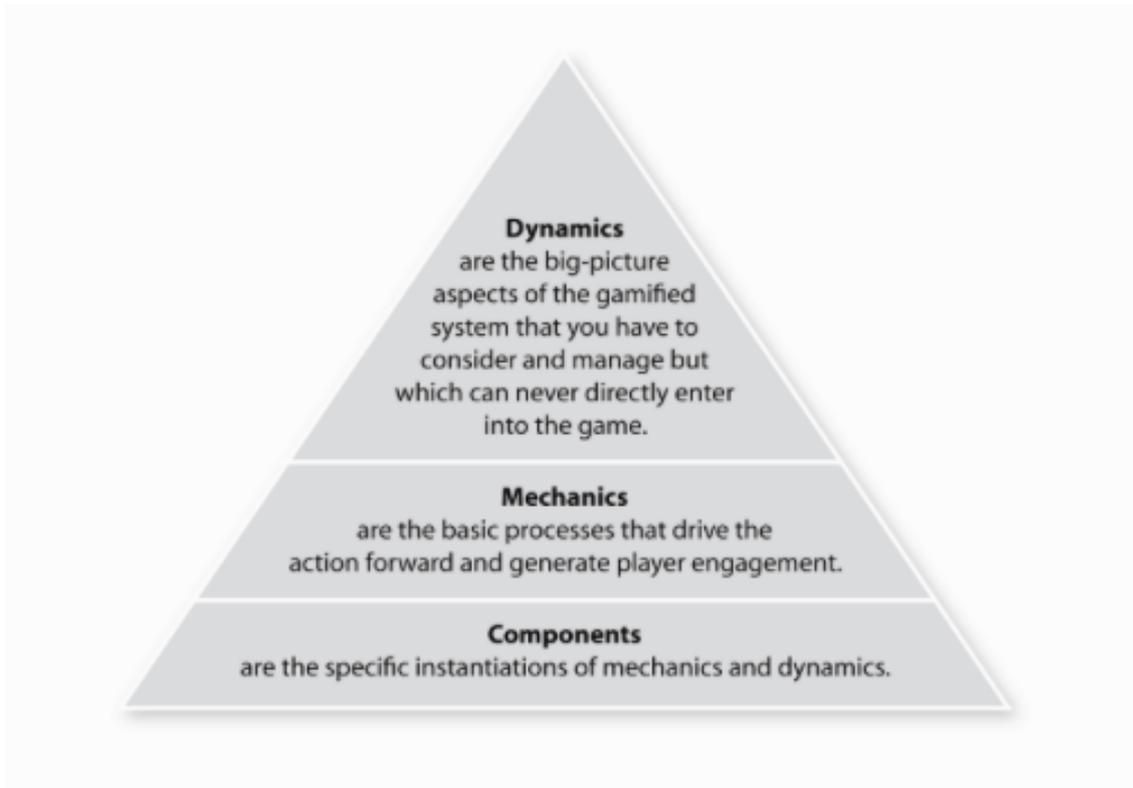
- challenge: puzzles or other task that require effort to solve.
- achievements: defined objectives for the user.
- cooperation: the combined effort of a group to achieve a shared goal.
- competition: one player or a group plays against each other to win a prize.
- feedback: information about how the player is doing.
- chance: elements of randomness.
- progression: the moving forward through the game that represent player's growth and development.
- transactions: trading between players, directly or through intermediaries.
- rewards: benefits for some action of achievement.
- ownership: the possession of a resource.
- turns: the sequential participation by alternating players.
- resource acquisition: obtaining useful items.
- win states: objectives that makes one player or a group the winner.

## **DYNAMICS**

The dynamics are the behavioral, psychological and relational outcomes that are incentivized by the components and mechanics described above and are characterized by an highest level of abstraction. The most important game dynamics are:

- emotions: curiosity, competitiveness, frustration, happiness, and so on.
- narratives: a consistent, ongoing and compelling storyline that provide context and meaning for user interactions and adventures.
- relationship: social interaction generating feeling that generate emotional attachments in users such as camaraderie, status, altruism and so on.

**Figure 2.4: The game element hierarchy**



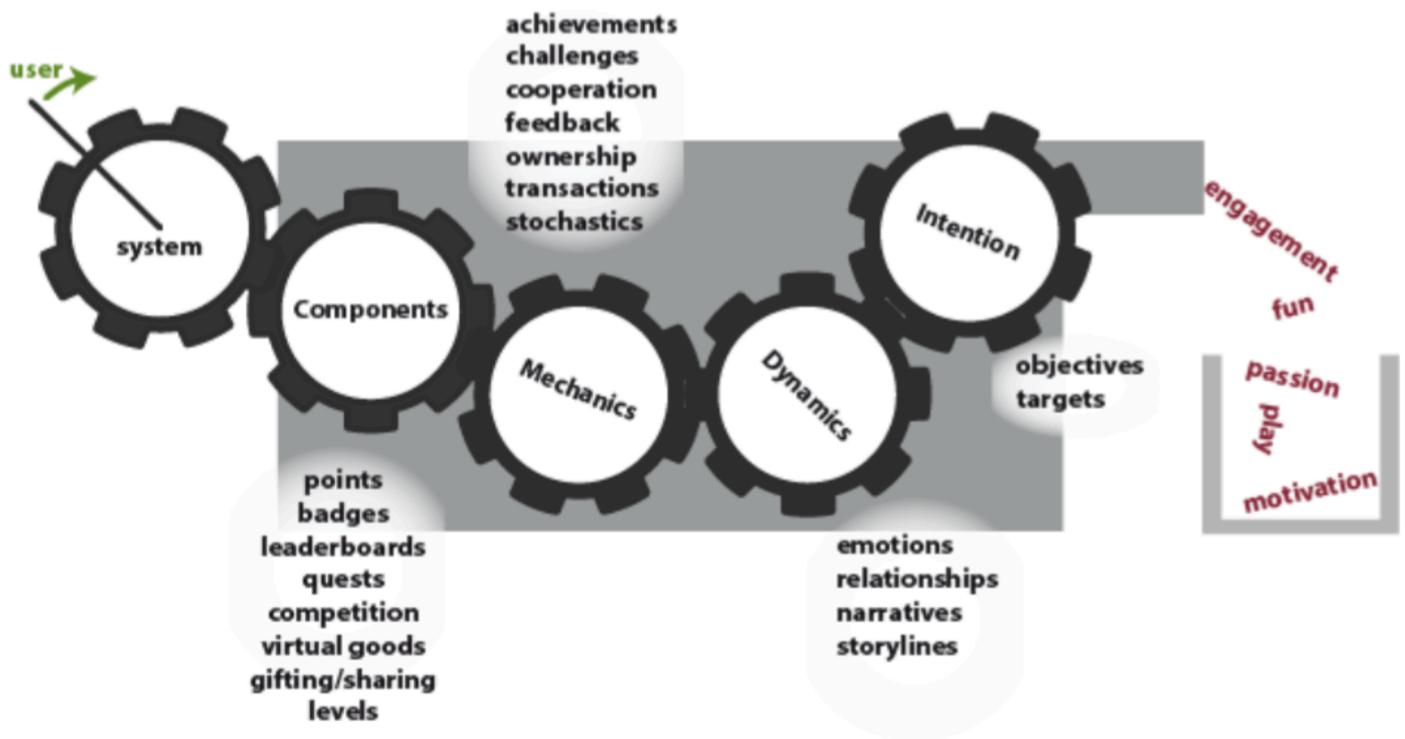
**Source: Werbach, Hunter, 2012**

### **INTENTION**

Putting together all these game elements, as illustrated in **figure 2.5**, is the central task of gamification design. However, this is not enough since gamification must occur within a wider context with particular outcomes that need to be encouraged and support. In the business context this actual intended key outcome is usually related to the management objectives that need to be clearly decided in advanced. The failure to fix this big picture may result in the design and use of several game-based elements that force some users to become more engaged within a certain part of the system, while driving other users away, or providing others with a disincentive to get involved in the system (Wood, Reiners, 2015). Gamification, if design correctly, can result in valuable outcomes. In reaching such result, it requires

a precise definition of the desired outcomes of the full package during the design phase.

Figure 2.5: The game design mechanism



Source: Wood, Reiners, 2015

## 2.3.2 THE MDA FRAMEWORK

The MDA framework, developed by Hunicke et al (2004), is one of the most used framework in game design. It is a formal and recognized approach to understand games, which tend to bridge the gap between game design and development, game criticism, and technical game research (Hunicke et al., 2004). It is conceived as a methodology aimed at clarifying and strengthening the iterative process of developers, making it easier for game designer to create game artefacts.

According to this framework, games can be broken down into three distinct components: rules, system and fun. Then, from these three elements, three levels of game design elements are defined following this order: mechanics, dynamics, aesthetics. From the designer perspective, the game mechanics (like points, controls, and levels, for example) are used to obtain a particular aesthetic (like challenge or fellowship). Conversely, the user will first experience the aesthetic and then start to disentangle the mechanics through the dynamics (Vegt et al., 2015). To reach a deeper understanding of the MDA framework, each of the game design elements are described below.

### **Mechanics**

Mechanics “describes the particular components of the game, at the level of data representation and algorithms” (Hunicke et al., 2004). They are the building block of the game experience and they consist of the decisions that the designers make to specify which are the goals, the rules, the context, the setting, the types of interactions and the boundaries of the situation to be gamified. The gamification mechanics are explicitly defined and explained before the experience starts, they remain constant, and they are used to induce a particular behaviour and outcomes.

According to Robson et Al. (2015) there are three types of mechanics which are of the utmost importance for building up games and gamified experiences:

*Setup mechanics* are those decisions that shape the environment of the game experience. These considerations could be related to the setting, what objects are needed, how the players are equipped with these objects, who a player is playing against, which kind of competitor they have to face (know or unknown, internal or

external, a single competitor or a group). Designers have to decide the special dimensions, whether the experience should be set in the real or the virtual world, and also the temporal dimensions, whether it is a real-time or a turn-based, or whether it has a finite end or infinite play, in order to dictate the rhythm of the time of the gamified experience.

*Rule mechanics* are those considerations that shape the goal to be pursued in the gamified experience. They are not only related to the decisions about which actions are permissible, but they also prescribe the constraints within which those actions can be enacted. A rule mechanism could be for example the time restriction given to the players in order to create pressure for them. They could be highly deterministic, for example when the player put the same input each time and the system produce inevitably the same identical result. Rule mechanics could be non-deterministic, especially when players are given some room of chance or when they are allowed to interact with each other. They can be topological to specify what happens and what kind of actions are permitted when a plyer lands in a specific virtual or real space or location. Furthermore, rule mechanics can be time-based as mentioned before, for example when actions are limited within a time period, or they can be objective-based, whether for example the effects of a specific circumstance are specified (e.g., completing one level unlocks the next).

*Progression mechanics* are those type of instruments that are adopted by game designers to affect the experience while it happens. They are those kind of reinforcements mentioned in the Behaviorism theory that we will explain in the next session. In the context of gamification, progression mechanics are particularly important since persistence and enforcing a particular behaviour are what game designer strive to create in a gamified environment. Since players are more likely to repeat behaviours with rewarding outcomes, appropriate progression mechanics are used to increase the likelihood that certain behaviours will be performed again in the future (Robson et al., 2015). They could be virtual with a meaning only in the virtual world and that players accumulate as they progress (e. g., scores, levels, progress bars) or they can be also real rewards (e. g., currency), with social importance (e. g., badges, leaderboards, trophies).

Game mechanics are the motivational building blocks and the fundamental aspects of gamified experience. They form the structure in which the gamification is realized. However, mechanics are only the superficial layer of the game design. To create a motivational experience that carry out a behavioural change in targeted employees or customers, other two game elements are needed to enrich the experience. Dynamics and aesthetics are the two missing key dimensions that are necessary to create the desired behaviour change. Mechanics, dynamics and aesthetics are interdependently related: any cues from one dimension, especially those from the aesthetic layer, are used by the designers to make changes to the mechanics in order to ensure that the organization's goals are met.

### **Dynamics**

Dynamics “describes the run-time behaviour of the mechanics acting on player inputs and each other's output over time” (Hunicke et al., 2004); they “describe how the rules manifest during actual gameplay (run-time) based on the players' inputs to the system as well as interactions among players” (Ruhi, 2015). Gamification dynamics are the type of player behaviour and reaction that emerge when they take part in the experience. Once the mechanics are set by the designers, the gamification dynamics are the result of how the players follow the rule of the play chosen by designers. They could be described as in-game behaviours, strategic actions and interactions that are enacted by players during the game. As reactions to mechanics that emerge during play, they are difficult to predict, and thus can lead to unintended behaviours that designers should anticipate in order to develop the mechanics appropriately. Thus, dynamics together with mechanics, can be conceived as the fundamental basis for a feedback system in gamification to drive changes in user behaviour, and ultimately to lead to improved outcomes. Furthermore, since immediate feedback is a prerequisite to ensuring cognitive flow, dynamics and mechanics (in particular, progression mechanics) are effective design elements that determine user engagement.

## **Aesthetics**

Aesthetics “describes the desirable emotional responses evoked in the player, when she interacts with the game system” (Hunicke et al., 2004). They represent “the emotional response outcomes among end users as they participate in various activities in gamified applications” (Ruhi, 2015). Robson et Al. (2015) use the term “emotions” as it describes better the link to the engagement outcomes that can be attained from employees and customers as the result of their responses to the gamified experience. They could be described as the effective mental state and reactions aroused among the players that immersed themselves in the game experience. Aesthetics are the emotional product of how players follow the mechanics and then generate the dynamics. According to Robson et Al. (2015), these emotions evoked in a gamified experience should be fun-oriented end appealing, not only from a pragmatic point of view but also from an emotional level. Fun should be part of the experience and creating player enjoyment should be seen as the most important mental reaction as the player engage with the game. Conversely, the empirical research conducted by U. Ruhi revealed that, in the context of enterprise gamification, end users are most inclined to search instrumental gratifications that bring towards achieving specific valued outcomes such as learning and recognition. Therefore, they verified that gamification activity was used as a means to an end, whereas in the context of traditional games, aesthetics belongs to specific type of “fun” that players seek and experience when they interact with the game. In general, we can say that while fun is a desirable emotional outcome that can trigger engagement and motivation, there are many other emotional responses to gamification experience (e. g., challenge, confidence, creativity, excitement, surprise, contribution etc.).

In sum, the MDA design theory is a useful framework that define the interdependent relationship between mechanics, dynamics and aesthetics. How these gamification design principles relate to one another is key for successfully gamifying the player experience. It illustrates to designers how to effectively create and extend the player experience applying together these principles. The core utility of this framework is that it shows how to improve continuously the experience for

the player understanding how small changes in one principle can impact the other two. An optimized gamified experience is where the players' emotional responses and the dynamics that emerge during the play shape the mechanics that govern play and vice versa (Robson et al., 2015). Furthermore, it helps to clarify how different is the perception of the gamified experience between the designers and the players. While the formers are more focused on how appropriately select the mechanics in order to drive the player experience, following the cues from the dynamics and the aesthetics, the later are more concentrated on their emotions and mental reactions. Designers only have direct control over the mechanics and they work with their features and functions in order to generate specific types of user interactions (dynamics), and ultimately meet the organizational and end-user requirements from the gamified applications (aesthetics). On the contrary, player engage in specific gamifications activities (dynamic), in order to achieve the goals they aspire to obtain and the emotional response they could fulfil from these gamified experience (aesthetics). As these two perspectives are opposite, the **table 2.1** illustrates these two diametrical vision of designer and end-user about gamification elements as conceived by Ruhi (2015). To conclude, understanding gamification mechanics, dynamics and aesthetics and how these are interdependently related is of utmost importance to design a successful gamified experience.

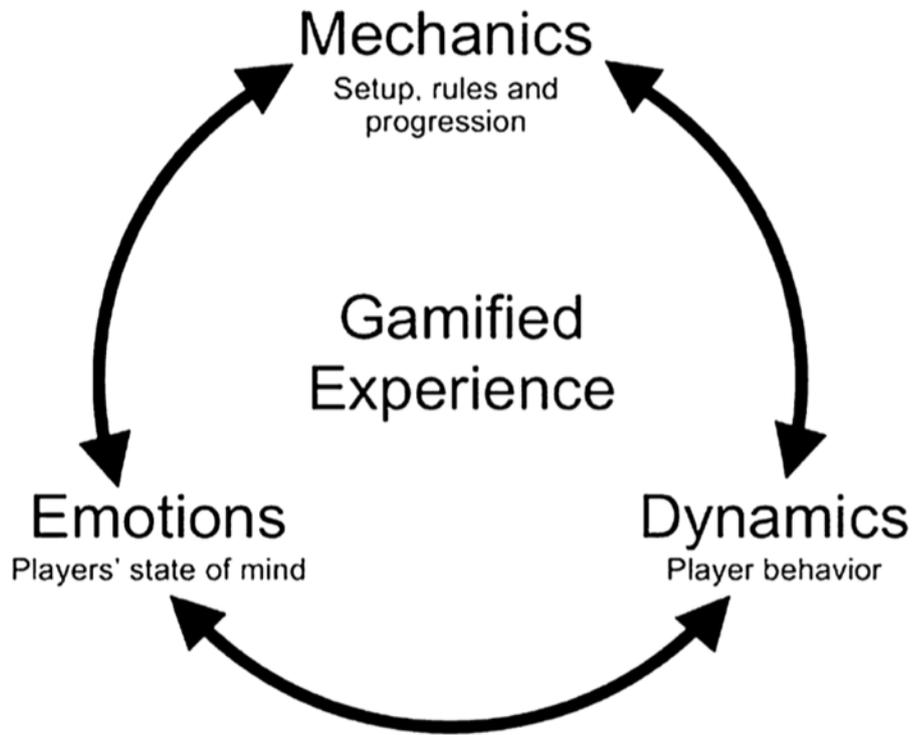
**Table 2.1: Designer and end-user perspective of gamification elements**

GAMIFICATION ELEMENTS	DESIGNER PERSPECTIVE	END-USER PERSPECTIVE
Mechanics	<ul style="list-style-type: none"> <li>• Objects, rules, and algorithms that need to be developed for the gamification application</li> <li>• System specifications in terms of features and functions of the gamification platform</li> </ul>	<ul style="list-style-type: none"> <li>• Gamification features and functions that act as affordances for motivational needs</li> <li>• System of features that enable performance of activities</li> </ul>

Dynamics	<ul style="list-style-type: none"> <li>• Projected user interactions and system responses</li> <li>• Utility of features and functions in delivering gameplay</li> </ul>	<ul style="list-style-type: none"> <li>• Execution of planned activities to fulfill personal gratifications</li> <li>• Spontaneous opportunities to participate in activities that would satisfy motivations</li> </ul>
Aesthetics	<ul style="list-style-type: none"> <li>• Business requirements and planned user-experience outcomes from gamified systems</li> <li>• Intended end-user responses to be evoked during gameplay</li> </ul>	<ul style="list-style-type: none"> <li>• Motivations to engage in gamifications</li> <li>• Gratifications sought from gamified experiences</li> <li>• Meaningfulness ascribed to gamification experiences</li> </ul>

**Source: Ruhi, 2015**

**Figure 2.6: The MDE framework of gamification principles**



**Source: Robson et al., 2015**

## 2.4 WHY GAMIFICATION WORKS?

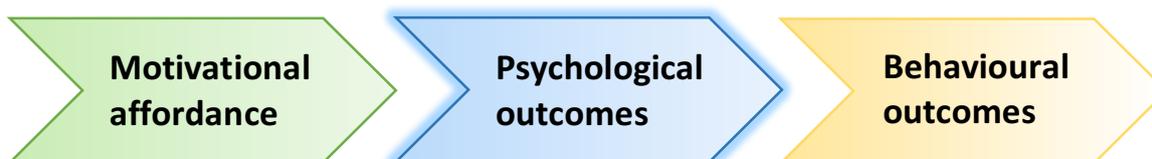
Games are everywhere. We use to play games since childhood and is a pervasive part of our lives. We play game while travelling, while relaxing, or while at work, simply to create enjoyable experience for ourselves and for others (Robson et al., 2015). Inside business environment, firms too have tried for long time to motivate their employees and customers with game-like incentives (e.g., competition among financial traders, leaderboards for salespeople, participation badge). However only nowadays, in the era of digital technologies and social media, these incentives have been widely exploited and transformed into something completely different from the traditional process with game-like features to such an extent that they resemble more to an engaging “experience” with a deeper meaning for employees and customers.

Many researches have been conducted to investigate the effects of gamification. While empirical results on the effectiveness of gamification are already on examination, many papers that reviewed the gamification topic have a positive opinion about the possible effects of the gaming experience as a mean to enhance user motivation and engagement.

But how does gamification put people doing stuff willingly, joyfully and highly motivated is the main question at the centre of our investigation in this section.

Humari et Al. (2014) conceptualize gamification into three parts: motivational affordance, psychological outcomes, behavioural outcomes (**Figure 2.7**).

**Figure 2.7: The gamification conceptualization**



**Source: Humari et al., 2014. Drafted by the author**

They conceive gamification as a set of motivational affordance (game design mechanism) that arouse psychological outcomes (they make people feel, sense) resulting in behavioral outcomes (e.g., solve a 3D puzzle in the Foldit case, set personal fitness goals as in the Nike+ example or fill out the journals on daily basis in the Pain squad instance). It pushes people to train harder and more often as a desired behavior. People, while engaging with the game mechanics, feel good and accomplished as a result of seeing their evolution, the pressure for competing with their peer and the loss avoidance (psychological outcomes).

Leaving aside the game design mechanism (motivational affordance) and the behavioural outcomes, hereafter we would like to consider which are the psychological effects of a gamified experience. Many pioneers consider gamification as the ultimate invention that has the power to enhance the motivation and the engagement of the users. Especially in the business domain, it is considered the panacea of many motivational problems inside the organizations. In fact, the general goal of gamification is to increase productivity and performance leveraging on the most involving aspects of games. But while successful examples and empirical studies on gamification shows that this design technique has positive effects on performance and participation of the users as well on their motivation and engagement, very thin is the connection with theoretical principles. Empirical research founded on theoretical principles is scarce (Alsawaier, 2018).

According to Gamification by Design co-author Gabe Zichermann, “gamification is 75 percent psychology and 25 percent technology”, as he stated in many gamification conferences. So, what a gamification tool does is to influence the psychological behaviours that govern the day-to-day decisions we make. The purpose of gamification, from an employer’s point of view, is to encourage the behaviour of the employee.

However, behaviour is a hard thing to change. In this sense, we can find some theoretical frameworks from the academic field that could be help to provide the necessary understanding on how gamification can foster behavioural changes.

In this regard, little connections with classic theories of motivation and engagement has been made. The Self-determination theory, behaviourism, the Flow

theory, the players type theory, goal-orientation theory, and user engagement theory and only few classic theoretical foundations that are used to reduce the gap between theory and practice. But the road to reach a strong theoretical links that bridge this gap is still long. However, beyond the fact that these frameworks are based on research conducted in specific domains and related to gamification research only successively, an examination of all of these theories is needed to inform our understanding of the gamification phenomenon.

## 2.5 THEORETICAL CONNECTIONS TO GAMIFICATION

While future research about game-thinking and gamification is still necessary for the successful progression of its application, here below we will give a look on how the application of gamification to work is theoretically justified nowadays by the available literature and thus can be implemented consciously and insightfully, while providing important evidence to clear up its benefits for human resources management.

### 2.5.1 SELF-DETERMINATION THEORY

Self-determination theory (SDT) is an approach to human motivation and personality that investigate people's inherent growth tendency and innate psychological needs that are the basis for their self-motivation and personality integration. By considering the perceived force that move people to act, SDT has been able to identify different types of motivation each of which has specifiable consequences for learning, performance, personal experience and well-being (Ryan, Deci, 2000). It distinguishes two primarily types of motivation, intrinsic and extrinsic motivation. Intrinsic motivation refers to the innate tendency to seek out novelty and challenge, to explore one's capacities and to learn. It is a natural inclination towards mastery, assimilation, spontaneous interest and exploration

which is typical of children that, in their healthiest state are active, curious, inquisitive and playful, even in the absence of specific rewards (Ryan, Deci, 2000). Although this type of motivation is desirable, most of the time people are moved to act by an another type of self-determined motivation. Indeed, after early childhood, the freedom to be intrinsically motivated is bounded by social norms. Extrinsic motivation refers to the performance of an activity, not for the simply enjoyment of the activity itself, but in order to attain some separable outcome (instrumental value). These two types of motivations are influenced, in their variability, by three types of innate psychological needs: autonomy, competence and relatedness. *Autonomy* relates to the volition and choice making in pursuing and being responsible for one's action. It is defined as the sense of freedom and will when performing a task (Ergle, 2016). *Competence* is connected to the motivation to overcome challenge and achieve success. The need for *relatedness* is about social status and connection with others based on mutual respect and interdependence (Alsawaier, 2018). These three elements constitute the basis for two subtheories of SDT called Cognitive evaluation theory (CET) and Organismic integration theory (OIT) which respectively aims of specifying the factors variability in intrinsic and extrinsic motivation. Without going too deep in details, these three basic psychological needs of SDT, are used to explain which are the desired psychological outcomes of gamification. Gamification try to satisfy these needs exploiting elements that are typical of video games. Aparicio et Al. (2012) proposed in their research which game elements to use in order to satisfy the motivation needs of employees. They provide an overview of different game elements divided according to SDT principles (**Table 2.2**). Although this framework could be useful to make a good gamified system, it has not been applied and research is still ongoing.

**Table 2.2: Overview of game elements divided according to SDT principles**

INNATE PSYCHOLOGICAL NEEDS	GAME ELEMENTS
AUTONOMY	Profiles, avatars, macros, configurable interface, alternative activities, privacy control and notification control.
COMPETENCE	Positive feedback, optimal challenge, progressive information, intuitive controls, points, level and leaderboards
RELATEDNESS	Groups, messages, blogs, connection to social networks and chat

**Source: Aparicio et al., 2012.**

According to some authors, many players in a gamified environment fulfil these needs by making choices, competing or collaborating with others and mastering their ability. When the players engage the gamified environment, they willingly immerse themselves in virtual playful experience. This lead to a general feeling of excitement and confidence that bring to enhanced performance, persistence and creativity. The fulfilment of the three intrinsic psychological needs of Ryan and Deci theory (autonomy, competence and social connectedness), may seems to be easily satisfied in a game, but of course in practice it is difficult. Wim Westera (2015) argued that the conditions for which game are valued for their motivational power are undermined by four limitations.

First, motivation in game is often driven by reward systems. Scores, property, permissions and reputation are use in this sense. But such reward typically triggers extrinsic motivation rather than intrinsic motivation. According to Ryan and Deci

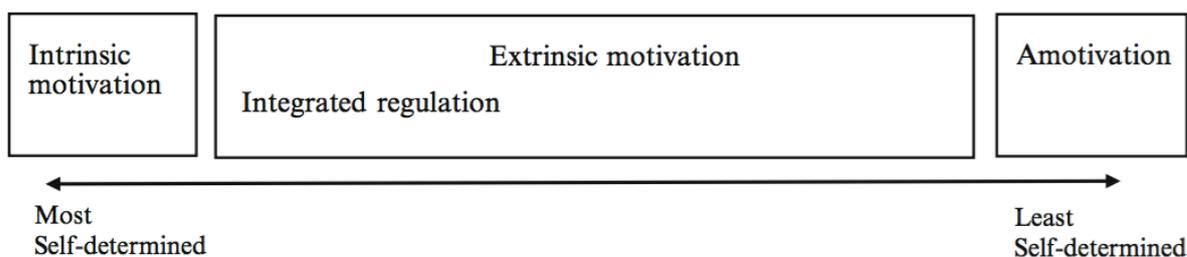
(2000), even if there are different forms of extrinsic motivations with different degree of locus of causality, from external to internal (**Figure 2.8**), most of the study in the field of gamification address the motivational problem considering the intrinsic motivation as the most desirable one. Indeed, comparisons between people that are authentically motivated and those who are merely externally controlled for an action reveal that the former, relative to the latter, have higher vitality, self-esteem and a general well-being. But such condition is anything but straightforward to reach. Further research is needed to not reduce gamification as a mere substitute of the reward system.

Second, extrinsic reward systems could undermine intrinsic motivation. Once gamification is used to provide extrinsic motivation, the intrinsic motivation decreases according to some research.

Third, extrinsic rewards may still be productive, in the sense that they could help to amplify intrinsic motivation by making the activity more engaging, but they should be of relevance for the task at hand.

Fourth, the motivational power of games is often treated as an axiom (Westera, 2015). There is a general enthusiasm between scholars and proponents of gamified systems on the basis of general arguments, without any grounded coherent theory. So claiming that games are motivational per se is wrongful.

**Figure 2.8: The SDT framework**



**Source: Ryan, Deci, 2000**

## 2.5.2 BEHAVIORISM

Gamification also has a strong connection to theories in human psychology, specially behaviorism (Alsawaier, 2018). Some of the basic principles of behaviorism are parallel to gamification elements. First of all, the token economies or simply the virtual economy (in the language of games) emerge whenever we use points to influence behaviour. Basically, the principle of the token economy is to enforce a certain behaviour by rewards and to correct a misbehaviour by lack of rewards or a form of penalty. This same principle is applied in gamification where motivation is triggered by rewarding and penalizing through points and badges, or upgrading or demoting the level reached in a game setting. Players can buy virtual goods with virtual currency that function as reinforcers, that increase the frequency of a behaviour or punishers, that decrease the frequency of a behaviour. Furthermore, behaviorism discovered that using a particular pattern of reinforcements, a pattern of persistence can be created, especially whether rewards are based on time (interval) or effort (ratio), and whenever the rewards are predictable or unpredictable (variable) (Ferster, Skinner, 1957). Persistence is what game designers strive to create. They usually implement predictable and unpredictable reward to engage players. Whereas fixed reinforcement schedule has resulted in low engagement levels in the context of gamification, the variable reinforcement schedule has generated higher engagement levels as the element of surprise is activated. In the following table (**Table 2.3**) Heinzen et Al. (2014) illustrate the schedules of reinforcements generally applied in game design. There are many expectations in the field so that some scholar claims that gamification can produce significant behavioural change. From behaviourist-scientific perspective, gamification is seen as a powerful tool. As some researchers state “Gamification is a designed-behaviour shift through playful experience” (Wood, Reiners, 2015).

**Table 2.3: Schedule of reinforcements applied to game design**

Term	Definition	Examples
Positive Reinforcement	Presenting something that has the effect of increasing the frequency of a desired behavior	Praising a student for a well-written sentence
		Rewarding a gamer with gold coins for leveling up
Negative Reinforcement	Taking something away that has the effect of increasing the frequency of a desired behavior	Letting a student out of detention to reward their cooperation
		Not killing off a player who cooperates with others
Positive Punishment	Presenting something that has the effect of decreasing the frequency of a desired behavior	Criticizing a student for an ungrammatical e-mail
		Killing a troll for disrupting a game
Negative Punishment	Taking something away that has the effect of decreasing the frequency of a desired behavior	Denying recess to a student that is misbehaving
		A parent not allowing a child to play a video game

Source: Heinzen et al., 2014.

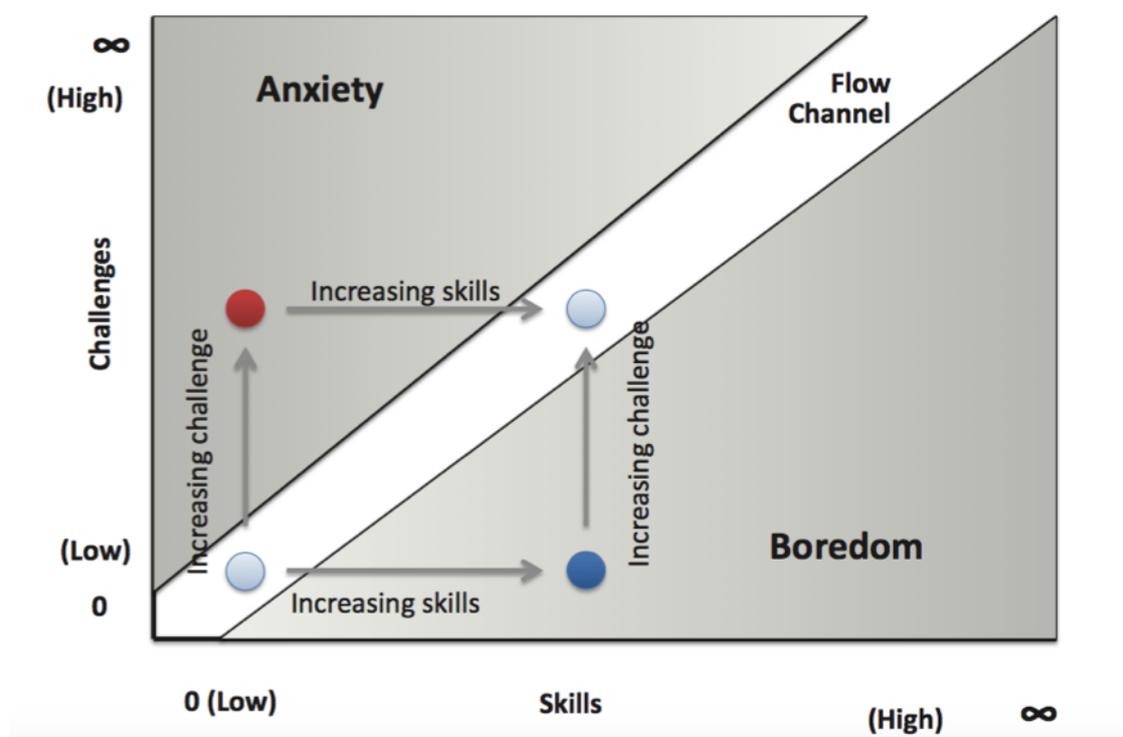
### 2.5.3 THE FLOW THEORY

Psychology professor Mihaly Csikszentmihalyi introduced a specific kind of happiness that he named flow, which is considered as one of the main reasons that people play games. Csikszentmihalyi was the father of the science of happiness, and in particular he studied a specific kind of happiness that he named *flow*, “the satisfying, exhilarating feeling of creative accomplishment and heightened functioning” (Csikszentmihályi, 1975). According to the theory, flow is a state of absorption, characterized by intense concentration, loss of self-awareness, a feeling of being perfectly challenged (neither bored nor overwhelmed) and a sense that time is flying (Xu, 2012). It is a kind of intense, joyous engagement mostly experienced in activities like chess, basketball, rock climbing and partner dancing: all challenging endeavours, with a clear goal, well-established rules for action, and

the potential for increased difficulty and improvement over time. Most importantly, flow activities were done for pure enjoyment rather for status, obligation and money (McGonigal, 2011).

In order to achieve flow, a balanced goal must be set as the most important condition. That means that the goal is challenging enough yet achievable within the individual's ability. A task that is not adequately challenging or require excessive time to be completed become boring and the players lose interest. Conversely, a task that is too hard cause anxiety and frustration and again players lose involvement because they feel not to be competent enough. To reach the flow one principle is important: with the improvement of one's skills over time, the challenge need to increase along with the improving skills. This balance between boredom and anxiety is referred to as the flow channel as shown in **Figure 2.9**

**Figure 2.9: The Flow scheme**



**Source: Csíkszentmihályi, 1975**

The Flow theory was and is already a source of inspiration for many researchers in the gamification field. This is true especially because

Czikszentmihalyi claimed “games are an obvious source of flow. As many researchers in the gamification field, Czikszentmihalyi’s belief was that games are the most consistent and efficient source of joyous engagement in our lives. He wondered why did real life so infrequently resemble a game (McGonigal, 2011). The solution for Czikszentmihalyi was to transfer the lesson that games teach us to the real life, that is what the gamification designers are trying to do when designing a gamified system. Real work should be structured like game work creating opportunities for freely chosen, challenging work that keep us at the limits of our abilities. In general, Czikszentmihalyi was convinced that there is the necessity to reinvent the reality to resemble more game like.

Since Czikszentmihalyi’s breakthrough discovery, two fundamental things then have happened: the rise of positive psychology and the explosion of the game industry. The positive psychology is “the scientific study of what make life most worth living” (Peterson, 2006). It is a study based on the human functioning and flourishing on multiple levels. It could be interpreted as a reaction against psychoanalysis and behaviourism which are focused on the study of mental illness, while positive psychology’s emphasis is on happiness, well-being and positivity. At the same time, the commercial game industry was investing on creating and developing games satisfy the same human feeling, putting all the positive psychology’s knowledge to use. These two intersecting trends are becoming today the basis of many researchers that are trying to explore the positive and beneficial effect of gamification.

#### 2.5.4 PLAYER TYPES

In order to understand why people play games, Richard Bartle (1996) identified four player personality types by studying players of the Multi-User Dungeon (MUD) game in 1960s (Xu, 2012). The objective of his investigation is to have a deep understanding of users and what motivates them to engage in a game.

He observed that not all players played for the same reason or played in the same way. Thus he identified a classification of four types that are described as follows:

*Achievers* are interesting in ACTING on the WORLD. They are typical gamers for which playing means to “win”. Players give themselves game-related goals and vigorously set out to achieve them. They consider point-gathering and rising in level as their main goal. Exploration, socializing and killing are only instrumental to find new source of treasure, to discover what the other players know about the business of accumulating points and to eliminate rivals or to gain vast amount of points if points are awarded for killing other players. The point of playing is to master the game.

*Explorers* like INTERACTING with the WORLD. They are interested in having the game surprise them and rejoice in having the game manifest its internal machinations to them. They always seek esoteric actions in wild, out-of-the-way places. Scoring points and killing may be necessary to enter some next phase of exploration but they are not their primarily objective, and socializing can be a source of information and new ideas to try out. The real fun comes only from discovery, and making the most complete set of maps in existence (Bartle, 1996).

*Socializers* are interested in INTERACTING with other PLAYERS. They give importance to people and to inter-player relationship: empathizing, sympathizing, listening, entertaining and joking, all happen inside the game that is considered as a context in which to converse and interact with the other fellow players. Socializers are interested in using the game’s communicative facilities and apply the role playing that this engender. Some exploration and point-scoring could be required to gain access to communicative tools. But the ultimately fulfilling thing is getting to know people, to understand them and to build long-lasting relationship.

*Killers* like ACTING on other PLAYERS. They like imposing themselves on the others by attacking other players with a view to killing off them. The more massive the distress caused, the greater the killer’s joy at having caused it. Normal points-scoring and even socializing are all just means to an end, maybe to gain access to some weapon that could be applied to the persona of another player in the game world.

Although Bartle's player types are useful in the practice of game design, there are some criticisms addressed by Dixon (2011). The first issue is that the player types were never intended to be a general typology of all digital game players; however, it is often referenced out of MUD context and applied to game design generally, and also recently in gamification. Secondly, the types may be overlapping or mixed, yet Bartle asserts that they are mutually exclusive. Lastly, it is not an empirically validated model, even if recently there are some researches that are working in that direction (Dixon, 2011).

Another important issue to take in consideration is the fact that, inside the enterprise environment, no single gamification system can cater to all users. Rather, the system should be capable of adapting to different user types (or employee personalities) or at least to be able of providing multiple gamifications, and offer features and functions that are aligned with the various types of employees' motivations to engage with the gamified system.

Even though Bartle's player types are specific to MUD-type games, they have served as a useful starting point and a general framework for other game researches. Marczewski (2013), for example, used Bartle's player types as a guideline to define another player types framework that may fit to gamification. The proposed classification is defined in the following manner:

- player (motivated by extrinsic rewards)
- socializer (intrinsically motivated by relatedness)
- free spirit (intrinsically motivated by autonomy)
- achiever (intrinsically motivated by mastery)
- philanthropist (intrinsically motivated by purpose)

To conclude, according to the theory of player types, to effectively design an engaging gamified experience, a distinction between end-user personalities is needed. To be significantly appealing, a gamified application should embed game mechanics and dynamics that are attractive to the target group and provide the type of rewards that are in line with their different types of motivations. For this reason, in designing gamification, it is necessary to carefully consider different type of

motivation that appeal to different user types in order to balance them out instead of overly emphasising one of them over the others (Kim, 2015).

**Figure 2.10: Player types**



**Source: Bartle, 1996**

## 2.5.5 GOAL SETTING THEORY

Goal setting theory is a theory of motivation that aims to explain the causes of people's performance in work related task (Tondello et al., 2018). It was developed on the basis of several empirical researches conducted over nearly four decades. It is based on Ryan's (1970) assumption that conscious goals affect actions. As defined by Locke and Latham, a goal is the object or aim of an action, for example, to attain a specific standard of proficiency, usually within a specified time limit

(Locke, Latham, 2002). Basically, the two core findings from the empirical studies were two:

- 1) There is a linear relationship between the degree of goal difficulty and the performance. Empirical observations showed that the highest or most difficult goals produced the highest levels of effort. Exceptions can be found when individuals reached the limits of their ability to perform the task or when the commitment to a highly difficult task collapsed.
- 2) Difficult goals lead to higher performance than no goals at all or abstract goal such as “do your best” (Tondello et al., 2018). More specifically, do-your-best goals have no specific external references and thus are defined individualistically. Fundamentally, when people are asked to do their best, they do not do so (Locke, Latham, 2002).

Gamification, as based on games, is basically a goal oriented activity. Setting “clear goals” is one of the main game design elements and practically speaking, there are many ways by which goals can be defined and implemented in a gameful system. Most of the design methods in gamification include some way of setting goals, both at the organizational and at the individual level. However, what is surprising is the fact that none of these methods has been used to connect gamification with the goal-setting theory. In their attempt to identify the current use of the goal-setting theory in gamification research, Tondello et Al. found that most of the reviewed papers employed goal-setting theory to explain specific gamification element rather than broad gamification principles. Most frequently, the theory of goal setting appeared on researches about the functionality of badges and leaderboards but it is not used to understand how gamification works in a broad sense. Thus, there is still lacking a comprehensive work that connect the most important principles from both gamification and goal setting theory. However, there are promising empirical evidence supporting the use of goal setting theory to explain the principles and common elements of gamification. In general, since gamification is based on setting specific and difficult goals and encouraging the users to pursue them through the constant provision of feedback, and thus satisfying the principles as explained by the goal-setting theory, it is logical to conclude that goal-setting theory can be used

as a theoretical base to explain why gamification can lead to better performance and thus to enhanced motivation.

## 2.5.6 THEORY OF USER ENGAGEMENT

As mentioned above, gamification is intended as an instrument with the ultimate outcome to enable users to feel more engaged with the gamified system. We discuss about user engagement as the last theoretical framework because engagement theory is not mentioned extensively in the context of gamification, in particular, applied inside the organizations. However, a consideration of the theory of user engagement is needed since it could give some cues for a better understanding how engaging experiences works when users interact with technology, in particular with a gamified interface.

Engagement has been defined as a quality of user experience characterized by attributes of positive affect, challenge, endurance, aesthetic and sensitive appeal, attention, feedback, perceived user control, intrinsic interest, curiosity and motivation (O'Brien, Toms, 2008). It is characterized by four different stages each of which have different attributes according to O'Brien and Toms model (**Figure 2.11**):

The *point of engagement* is initiated by the visual appearance or the novel presentation of the interface, the users' motivation and interest, and user ability and willingness to participate.

*Engagement* is maintained when users are able to keep their attention and interest in the application, and it is characterized by positive emotions.

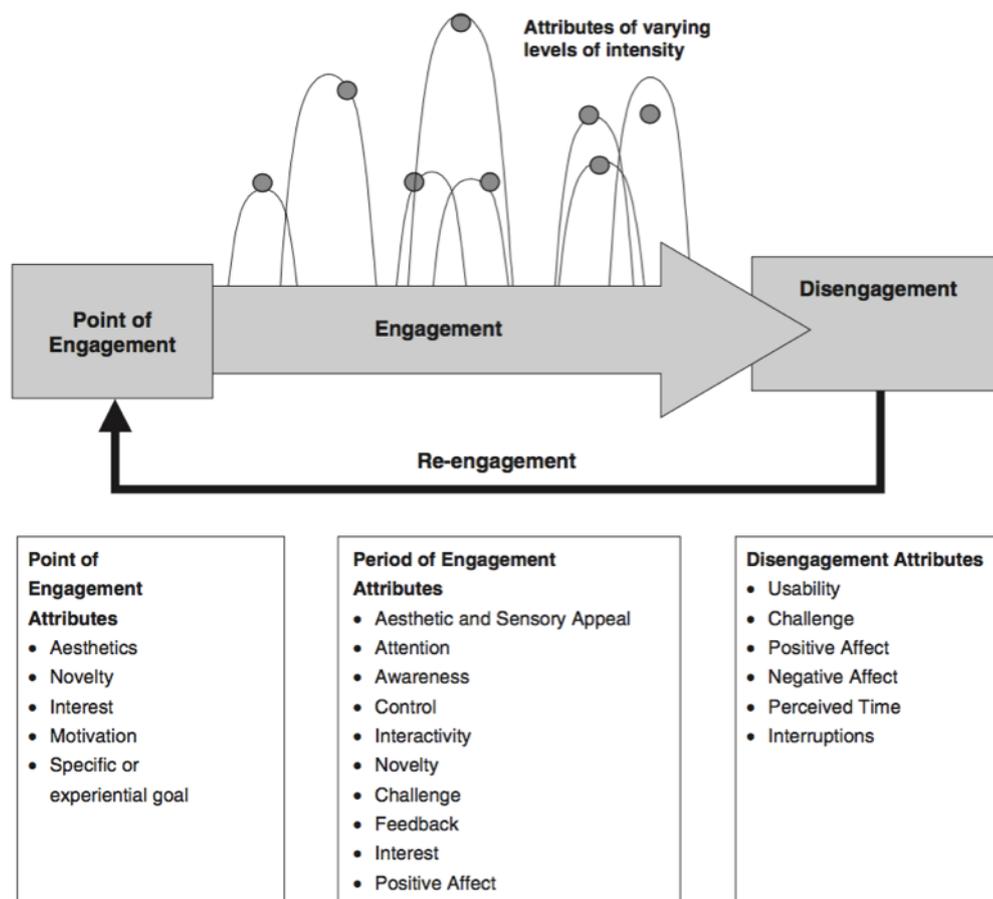
*Disengagement* is manifested for many reasons such as the usability of the technology (for example, the application is too challenging), and distractions in their environments.

*Reengagement* intervenes when the disengagement from a task or interface is not necessarily the end of the user engagement. It could happen, for example, that a video game player keeps trying several attempts to get through a stage of a game successfully, with the result that he wants to go back into the game. Basically, participants are willing to reengage if the system disengaged them before they were

truly ready or as a result of a positive past experience with that application. Having fun, learning or discovering something new and being rewarded with incentives are only few of possible motivators that could bring the user to engage again with a system.

According to Neeli (2012), even though this model does not entirely fit into gamification, it could be useful for designers that can exploit the theory to understand the phases of engagement and devise mechanics accordingly (providing “boosters” at specific periods when engagement decrease, for example).

**Figure 2.11: User of engagement framework**



Source: O'Brien, Toms, 2008

## 2.6 THE USEFULNESS OF GAMES IN THE WORKPLACE

As mentioned previously, early before the recent gamification movement, games were already present inside workplaces. Scholars examining workplaces have repeatedly discovered that workers regularly play games at work (Mollick, Werbach, 2015). Observing the positive outcomes of workplace games, primarily after Burawoy work (1979), firms have begun consciously to apply games to an extremely wide range of uses inside organizations. Enterprises have experimented the use of games in very varied ways, from innovation to recruiting.

However, the range of functions to which games are applied, the variety of gameful approaches used by enterprises, and the ongoing discovery of new insights, make it virtually impossible, if not nonsense, to develop a complete synthesis of enterprise games in a theoretical sense. Any attempt at a comprehensive overview of gamification in the workplace is necessarily limited by the sheer diversity of situations in which games appear and the ways in which gamification is being applied (Mollick, Werbach, 2015). From the spontaneous games observed by Roy (1959), to the games applied consciously by enterprises, workplace games have been employed for a number of reasons. However, focusing on gamification as a management tool inside enterprise, we believe that four hoped outcomes appear to be driving the attention, and so the interest and the adoption of enterprise gamification. In the following section, we review these four major rational for games and gamification in the enterprise based on the work of Ethan Mollick and Kevin Werbach, professors from the Wharton University, as illustrated in **figure 2.12**.

## 2.6.1 OUTCOME ONE: RELIEVING TEDIUM AND INCREASING SATISFACTION

This first outcome is the very first reason why workers at the machine shop in the Roy study started to play games at work. The widespread adoption of games at work was due to the fact that work on the shop floor was extremely tedious and boring that if there was nothing done to relieve it, the workers would “go nuts” (Roy 1959). As said before, to slay the “beast of monotony”, laborers played informal and ritualized games with each other. As named by Roy, their “banana time”, was the ritual of stealing and hiding one worker’s banana, just to break the work time with some kind of jokes. Since the early times, games filled a vital role in the work environment: reducing fatigue and boredom, passing the time and providing some satisfaction. Even though the proponents of gamification relate its widespread adoption to the popularity of video games in recent years, the role of spontaneous games within enterprises cannot be ignored. Nowadays, one of the main function of the modern gamification is always the same even if it is not anymore a spontaneous construction of employees. Much of the gamification movement attempts to re-create these boredom-relieving games of employees and reshape them more explicitly for the use of management (Mollick, Werback, 2015). Gamification builds on the believe that workers who are less bored and more satisfied in their work, are happier, more engaged and closer to their co-workers, and thus can be expected to perform better and have lower turnover. These are some of the reasonable argumentation that has led to the management’s decision to adopt game based structures in the workplace.

Just to make an example Zappos is a large online clothing retailer that was acquired by amazon.com in 2009. For the purpose of reducing boredom and add a bit of fun to the mundane task of logging into the corporate intranet and to reinforce its playful workplace culture, the company decided to implement the Zappos Face Game: whenever a Zappos employee logs into the corporate intranet, he or she is shown the picture of a randomly selected co-workers and presented with a multiple-choice quiz to identify the person’s name. Afterwards, the employee is shown the co-worker’s profile information in the company directory (Mollick, Werback, 2015).

By playing the game, employees ended up to know better their fellow employees and to become more acculturated to the company.

While in the Roy's study, boredom and dissatisfaction were a prevalent part of work, nowadays jobs are more varied and challenging. However, there are some tasks that are leaved aside but anyhow play an important role for the sake of management goals. Adding a game layer to these task can foster employees' interest and thus their satisfaction.

## 2.6.2 OUTCOME TWO: IMPROVING PERFORMANCE

Another general outcome emphasized in enterprise gamification is that games can increase performance. While relieving employees from boring task can make them more satisfied and happier and thus as a consequence more productive, enterprise use of games has increasingly tended to focus much more tightly on directly increasing performance through game-base incentives (Mollick, Werback, 2015). While there is a recent tendency to consider incentive systems, based on elements such as leaderboards, prizes, ranking, and feedback, to be innovations partially rooted in game design, there are lots of evidences that these types of mechanisms were largely applied in the workplace long before the gamification movement became popular. What scholars have found years before is that contest, rankings, feedback and other sort of gameful practice can be extremely complex, that has many implications in a wide ranges of area, such as psychological, economical and social spheres.

Leveraging on these previous findings and on the expertise of game designers in the construction of complex and dynamic rewards and feedback loops, gamification can do much more than traditional feedback or incentive system. Games, as compared to the traditional incentive system, offers more sophisticated ways of measuring and rewarding performance by deploying appropriate feedback and incentives depending on the complex needs of individuals. In doing so, feedback, incentives, ranking, prizes and so on, are not merely positive or negative

reinforcements, but meaningful instruments that allow each individual to better achieve their performance goals.

While nowadays these kind of gameful incentive systems that approaches these goals are still rare, more sophisticated techniques are being developed.

An example in this sense is the virtual call-center outsourcing company Live-Ops. Since its agents are independent contractors who work from home, in order to incentivize them and improve their performance, the system is based on feedback and competition which stimulate them to try harder and improve their skills. Getting to know how well they are doing compared to their co-worker and benchmarks trigger what is called engagement loops. Furthermore, on the basis of this information, management assign the rewards. Call-center operators are informed with continues feedback thanks to software that automatically routes calls and provide information on their computer screens and are stimulated to try harder or to improve their skills through training as a result of competition. But what's new from the traditional feedback and incentives systems?

As one can notice, the simple uses of these approaches can no longer stimulate workers to improve their performances. To the extent such gamification systems are linked to monetary compensations, they merely emphasize the extrinsic motivation. Without any engaging experience, feedback and competition, as the other game mechanisms, are susceptible to the well-demonstrated crowding-out or overjustification effect in which individuals become less motivated than they were before (Deci, Ryan, 1985; Ryan, Deci, 2000). But in the case of Live-Ops, gamification appears to have generated not only measurable performance improvements but also evidence that agents are pleased with the system and the company, as a consequence of two aspects of the implementation (Mollick, Werback, 2015). First, instead of focusing too much on competition, management decided to assign rewards for the right behaviors and they based feedback on the basis of metrics defined by the clients. Second, they built the competition with team structures, and gave incentives for community interactions and other social aspects to avoid an excessively zero-sum mentality (Mollick, Werback, 2015). Furthermore, the gamification system was built in order to emphasize the company culture based on the commitment to professional growth and flexibility for its agents.

Thus, Live-Ops instead of drawing on external reward system, attempts to motivate improved performance in a healthy way, building the competition so that agents view their self-defined personal and professional goals as integral part of the game. In doing so, the management try to generate intrinsic, self-motivated performance gains.

The Live-Ops game system, based on feedback and competition, worked because it does not merely apply the game mechanism, but take into account the complex needs of individuals. By designing the gameful performance enhancement system in a holistic way, rather than simply buying into the reward-and-punishment mechanism, Live-Ops has been able to create more meaning, as well better performance outcomes for the employee.

### **2.6.3 OUTCOME THREE: ENCOURAGING UNREMUNERATED WORK, INTERNALLY AND EXTERNALLY**

Drawing upon the intrinsic and the extrinsic rewards provided by the game in order to encourage communities of individuals to undertake some desired actions is the third use of games in enterprise environments. Commonly, this process is being used within firms to encourage corporate citizenship behaviors, but also to solicit unremunerated work by individuals outside the bounds of firms (Mollick, Werback, 2015).

#### **EXTERNALLY**

Games can be a powerful tool to encourage individuals outside of firms to engage in free work that can be useful to firms. They can be effective to motivate lie communities to assist enterprises. To illustrate how that can be possible we can mention the relatively simple example of the ESP Game, developed by Luis von Ahn of Carnegie Mellon, and later adopted by Google (von Ahn, 2004). The ESP Game applies gamification to a tedious job, the labelling of online images, an important task that computers cannot perform well (Mollick, Werback, 2015). In the game, two

players are matched online anonymously and are shown a picture, for example of a dog. Both players must type descriptive words as fast as possible, and they score points and advance to the next picture only when both individuals use the same word to identify the image. Then the same image is shown to different pairs of players who must come up with new descriptive words. Over multiple game sessions, therefore, each picture has many individuals identify the image in diverse ways that coherently agree with each other (Mollick, Werback, 2015), with the result that at the end it has many labels that are useful descriptions of the picture itself.

Community of dedicated users tend to form around many products and services, and these communities are often the original source of breakthrough innovations that are often exploited by firms (Von Hippel, 2005; Baldwin, Von Hippel, 2009). This is because users, not the firms themselves, are more acquainted with the problems and are the most experienced in actually using a given product or service, and thus are the best advisers to find the best way to solve them. Games like Foldit, mentioned previously, bring together communities to innovate around particular problems without any direct payment (Mollick, Werback, 2015).

## **INTERNALLY**

The same outcome of motivating collective action can also be applied to the workers inside an organization. The purpose is to collectively engage the employees beyond their normal job functions. While workers have always been reluctant to share accurate data and information into the knowledge management systems as it is conceived as a tedious and unrewarding activity, a number of firms are recognizing that tacit knowledge of employees and their expertise network can produce significant benefits for knowledge-based organizations (Mollick, Werback, 2015). Organizations such as Lloyds TSB Bank and the Department of Work and Pensions in the United Kingdom are acquainted that employees are source of significant information and expertise that can improve the effectiveness of enterprise knowledge management and social networking system. In this regard, they are recognizing that gamification is an effective tool in leveraging tacit knowledge of communities of workers. Both enterprises, in fact, have employed

virtual stock market games to encourage development and submission of internal innovation proposal (Mollick, Werback, 2015). At the same time, enterprise software giant SAP uses points and badges to encourage quality contributions to its developer community extranet (Mollick, Werback, 2015), while IBM employs virtual reward systems based on points and levels in order to promote knowledge sharing inside its internal system named Beehive. For the same reason, consulting firms such as Deloitte and Capgemini are seeking to achieve the same results by using points and leaderboards to encourage contributions to their internal social network systems.

While a number of firms are recognizing the potential utility of gamification in encouraging unremunerated work, alleged forms of exploitation started to raise. To the extent that firms are substituting gamified virtual rewards for traditional tangible forms of compensation, exploitation would be a legitimate concern (Mollick, Werback, 2015). However, the examples mentioned before have an important characteristic. The gamification is not built upon the core job responsibilities for which employees are evaluated and paid, but involves only the “organizational citizenship behaviors” (Smith, 2011), actions that are not required as part of their in-role job responsibilities, but have a great value for the good of the enterprise. In other words, the traditional workplace reward systems such as salary and bonuses address in-role activities, but they do not promote organizational citizenship behaviors, despite their value to the enterprise (Mollick, Werback, 2015). Gamification can create a secondary motivational system for those activities for which employees are not directly tasked with or individually paid for but have significant value for the organization.

#### 2.6.4 OUTCOME FOUR: BOLSTERING HR PRACTICES

The final major use of games within the enterprise is the most studied: games for HRM practices, in particular recruitment, selection, training and performance management. The first area, recruitment, is defined as those organizational activities that influence the number and the types of applicants who

apply for the position and affect whether a job offer is accepted (Breugh, 1992). Selection, instead, is the area that is intended to provide psychological assessment to applicants in order to predict whether they master or not their job performance and thus help in hiring decisions. Such assessments might include test of cognitive ability, assessments of personality, work samples, interviews, application blanks, and more (Armstrong et al., 2015). The third area, training, is defined as activities with the purpose to acquire knowledge, skills, and attitudes that are relevant to an immediate or upcoming job or role (Kraiger, Culbertson, 2013). The final area, performance management, is defined as “a continuous process of identifying, measuring, and developing the performance of individuals and teams and aligning performance with the strategic goals of the organization (Aguinis, 2009). More specifically, it includes activities such as identifying what good performance is for a given job, measuring employees’ performance on the basis of that criterion, and ensuring that employees are maintaining a given level of performance.

Gamification can be used within each of these areas in order to improve HRM practice compared to the traditional procedures. In the section below, we will see which are the possible application of game-thinking and game design with the final goal to benefit organizations. While we have already discussed the performance enhancement function of games as a general goal of management, here we would focus our attention to the other three HR activities.

## **RECRUITMENT**

Gamification and game-thinking can be a useful tool in the area of recruiting for two reasons.

First, gamified applications can be applied to the process of finding the best “fit” between applicants and hiring organizations (Armstrong et al., 2015). Recruiting techniques built with game like mechanisms might be leverage to make an organization more attractive, thus pulling more job applicants to an organization. An example in this sense, Deloitte China uses game elements during a recent recruiting campaign in order to increase its attractiveness towards new potential applicants. The management decided to virtually represent company offices in

Beijing, Hong Kong, and Shanghai to allow job seekers to explore different aspects inside the company. Job applicants were virtually immersed in the company environment and were given the ability to navigate to different rooms, floors, and buildings. They were also given control to focus their attention on a specific department (e.g. finance) or location and the application included a challenge element to find “Green Dots” throughout the company, representing different benefits and opportunities available to employees inside the company (e.g. development opportunities, career flexibility) (Armstrong et al., 2015). With a such a recruitment technique, job seekers were be able to explore every aspect of the company and understand if they fit with the true nature of the organization.

Furthermore, organizations could use game mechanism to provide a realistic job preview in order to enhance person-organization fit.

Second, game-thinking may be employed to enhance the recruitment process itself (Armstrong et al., 2015). To increase pool and the variety of applicants and thus the chance to find the best candidate, gamification can be employed to improve employee referral systems or to involve potential applicants in the workings of the recruiting organization (Armstrong et al., 2015). For example, gamifying the employee referral system by awarding points and prizes to employees for recruiting new applicants is the best way to improve the applicant pool, as software developer Herd Wisdom did with its mobile application. Another way to gamify the recruitment process is to use competition. For example, The U.S. Department of Homeland Security created a competition for high school student computer hackers in order to excite young hackers about working in the government sector. Thanks to this game based competition students were motivated to apply and participate in the recruiting process and were more acquainted with the government sector of computer security, an area of employment not well known between the young students.

While game practices used in the recruitment area are the most studied, further research is needed in order to investigate the effectiveness of gamified recruitment process and evaluate whether it is more or less effective than traditional recruiting methods.

## **SELECTION**

Gamification can also impact the selection process in different ways.

First, gamification may improve applicant reactions to selection. The use of these new technologies in the selection process may be perceived as more fair compared to the traditional selection systems, especially when job-applicants perceive a more procedural justice. In fact, when fairness perceptions are poor, a variety of negative selection-related outcomes for the organization are more probable, including decreased applicant self-efficacy and self-esteem, decrease organizational attractiveness, decrease job offer acceptance, and eventually decreased job satisfaction and performance, and increased turnover (Armstrong et al., 2015). However, this sense of fairness could be threatened by the computer experience of the applicants. The computer experience emerged as a key moderator of the relationship between technology usage and applicant reaction, revealing that the procedural justice perceptions are stronger among those with greater experience with computers. While, job-seekers with previous gaming experience and positive attitudes towards games in general are more likely accept and react positively to the idea of gamification in the selection process, those with little or no experience with games could perceive a sense of unfairness.

Second, gamification may be used to supplement or even replace the traditional performance assessments. The effectiveness of a game based assessment resides in the higher quality of information about job candidates obtained during the selection process, as a result of two improved qualities of the data gathering process through gamification. Firstly, game performance may be more difficult for the test-takers to fake in an effort to maximize their chance to be hired (Armstrong et al., 2015). Many test-takers use to distort their responses intentionally or unintentionally, mainly when the test outcome is high-stakes. They often inflate their responses from their true score in order to present themselves in a socially desirable fashion. Gamification of the assessment process can reduce this distortion since these desirable behaviors are less obvious within gamified systems, where the nature of measurement are often ambiguous and personality traits are evaluated

indirectly via gameplay behaviors. Secondly, gamification, if well designed, may be better able to elicit behaviors than traditional questionnaire-based assessments. Thanks to the use of new technologies game based assessment could provide a better prediction of future work behavior. However, gamification as a tool to predict future behaviors is still in its infancy. Future research is needed in order to investigate the basis properties of an effective gamified assessment process.

## **TRAINING**

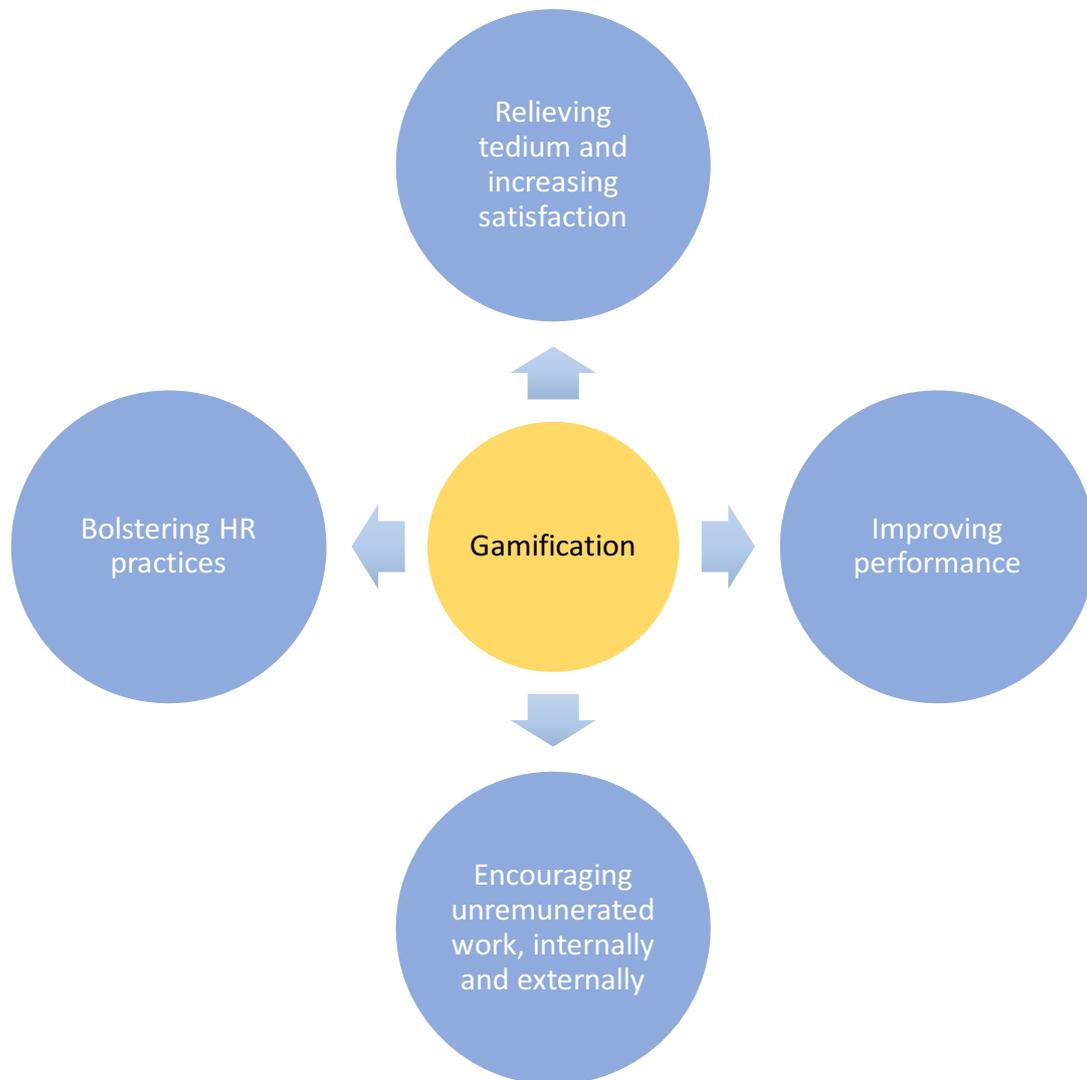
The study of serious games in learning contexts has existed for several years and has paved the way for the success of game-thinking in workplace training. Gamification in the field of training is one of the most explored from the theoretical and empirical point of view. Because of the substantial impact on learning outcomes in workplace training, gamification has been applied to both improving overall training effectiveness and to improving motivation during training.

For what concern gamification of training effectiveness, game mechanisms are intended to improve trainee reactions to learning, knowledge and skill increases, behavioral change, and organizational return (Kirkpatrick, 1976). Research in this domain is generally related with research on serious games, which have been used to support learning for decades, long before video games and gamification started to get the interest of people. This research area is primarily within the educational domain rather than within human resource management (Armstrong et al., 2015). While there is some space for overlapping considerations, effectiveness in the educational domain typically focuses upon the effective reactions to students and learning as the ultimate outcomes of instructions (Armstrong et al., 2015), whereas organizations are actually more focused on behavioral change and return on investment, putting more chance of failure as the ultimate effect on behavior is difficult to reach. Another point of concern is related to trainees' video game experience and attitude toward game-based learning. It has been demonstrated, in fact, that poor trainee attitudes towards new technologies, low trainee experience with training technologies, and poor organizational climate for training technologies can reduce reactions to training, learning from training,

behavioral transfer from training, and overall organizational return on investment, even if the technology itself has been implemented effectively (Armstrong et al., 2015). However, although attitude and experience with video games may have an impact to the motivation to engage with that type of training technologies, overall reactions to gamified training were still greater. Another important issue is that there is still little consensus on what specific game elements or game designs actually support learning, demonstrating that game design is an activity extremely complex, which involve different expertise and knowledge.

The other approach in the training field is intended to improving motivation of learners during training. The gamification of training motivation is intended to improve completion rates and trainee motivation to learn rather than to actually deliver instruction (Armstrong et al., 2015). Actually, this is the most popular approach of all types of gamification among educators because of the simplicity of its deployment. As motivation is one of the main concern in the field of gamification, many studies have focused their attention on the comprehensive review of the psychological theories of motivation to identify which theories were most effective to describe the effects of gamifying training motivation. While we have already review some of them previously, here we would mention the theory of gamified learning, which is the only psychological theory upon gamified learning. This theory is intended to explain how single game elements support learning-related attitudes and behaviors, which in turn influence learning process. The particularity of this theory is that it studies game mechanisms that are intended to affect learning through the lens of behavioral mediator. From this point of view, gamification is not intended to teach, but to support the learning

**Figure 2.12: Four major rational for gamification in the enterprise based on the work of Mollick and Werbach (2015).**



**Source: Mollick, Werbach, 2015. Drafted by the author**

*As gamification evolve, issues such as consent and intrinsic motivation are becoming more persistent in the path of deeper understanding of this new instrument. While studies on the psychology of games inside workplace were already present years before the gamification movement, nowadays these issues are becoming more persistent as more and more organizations are starting to notice the potentialities of such instrument. While theories as the Self Determination Theory, the Goal Setting theory and so forth can give some insights on the usefulness of gamification and provide a solid theoretical basis to its widely mentioned proprieties, empirical evidences that proves the relationship between theory and practice are still lacking. Given this fact, there are still a low number of enterprises that use such instrument for real world purpose, especially in Italy.*

*In the following chapter we will a look to the why enterprises are still sceptic in the substitution of the traditions practices for the more modern tools such as gamification. We believe that the hype around such phenomenon has played its part, but also the lack of an in-depth knowledge among managers has kept them apart from its adoption. In this sense a deeper understanding on this matter is needed to foster a wider exploitation of gamification.*

# Chapter 3

## WHAT IS COMING FOR HR GAMIFICATION IN 2018?

*In the path of its affirmation as the new trend of the moment, gamification has been claimed as the new potential instrument that should be able to foster the engagement of employees inside organizations. However, as the enthusiasm around such tool was so huge, many gamification proponents have exploited the moment without any concern of its validity or even its connection to actual factors in the material world.*

*As there are many people who are still excited about it and some want to try it out and see if it works or not, it is important to outline also the criticism of such instrument. In this sense, in the following chapter we will give a look to the most important issues, particularly those outlined by Ian Bogost, a game designer and professor at the Georgia Institute of Technology, who pointed out the problems that gamification hype has raised.*

*Furthermore, we will give a look to some figures about gamification, in particular in Italy, provided by Randstad in its report “HR Trends and Salary Survey 2017: The challenges of the unconventional”, in which the poor knowledge on this matter is the principal issue.*

*Finally, we want to provide an analysis of gamification with the aim to dispense a strategy for HR managers for guessing what lies ahead in the future. In particular, through the collection of some game designers interviews we present a SWOT analysis for the gamification field. The goal of such analysis is to provide HR managers with a useful tool for identifying both positive and negative aspects of gamification, as well as its perspective of development and risk of decline.*

### 3.1 THE HYPE CRITICISMS: BOGOST'S POINT OF VIEW

Far from being easily implemented and applied inside enterprise practices, many gamification implementations have failed to realize the management objectives. So many promises, from the worker engagement to the increased performance, have been broken as a consequence of the mistaken idea that gamification can be trivially carried out inside organizations. The idea that lay behind the concept of gamification is so promising and attractive that push many people to think naively and follow the hype around the concept with blinders on.

The truth is that making games is hard. It takes a lot of time, expertise, and hard work to create something of value. This is even more true when we refer to game-thinking inside the enterprise, where games have to draw on a wide range of techniques and knowledge from the field of psychology, economics, sociology, and the humanities to achieve a variety of outcomes (Mollick, Werbach, 2015).

The general sentiment around this new tool was characterized by both hypes and skepticism. In this regard, in November 2011, the research firm Gartner called gamification a “highly significant trend”, and predicted that by 2014, more than 70% of the Global 2000 organizations would have had at least one gamified application. The world’s leading research and advisory company was so optimistic that affirmed that the potential is “enormous” to the extent that gamification would have become “as important as Facebook, e-Bay, and Amazon”. Only one year later, however, Gartner decided that gamification was still being driven by “novelty and hype”, and predicted that by the same year of 2014, 80% of current gamified applications would fail to meet business objectives, mainly due to the poor design. That is to say that, also Gartner was definitely misled by the big on-going hype which has resulted in the increased focus on this phenomenon called gamification.

On the same wavelength, other experts in the game field took a critical point of view and distance themselves from the gamification hype.

Among these expert, not all designers are unruffled by the way games have transitioned in the workplace (The New Yorker, 2013). Ian Bogost, a game designer and professor at the Georgia Institute of Technology, is among the industry's most vocal critics. In his controversial paper "Gamification is bullshit" (2011), Bogost criticized the gamification movement with the intent to take aware people from the opportunistic behavior of some gamification proponents who have "pursued to capitalize on a cultural moment, through service about which they have questionable expertise, to bring about results meant to last only long enough to pad their bank accounts before the next bullshit trend comes along" (The New Yorker, 2013). His speech was made in the early of 2011, when gamification was on everyone's lips as a new innovative tool for management purpose, but not already well explored to understand pitfalls and benefits of this instrument.

Taking up Harry Frankfurt's treatise *On Bullshit* (2005), in which the moral philosopher gives us a new theory of bullshit as something different from the vulgar synonym of lies or deceit but rather something that has nothing to do with truth mainly used to conceal, to impress or to coerce, Bogost was very critical and judgmental against the new practical use of gamification at least for four reasons.

First, he conceives gamification primarily as a practice of marketers and consultants who seek to construct and then exploit an opportunity for benefit (Bogost, 2015). The opportunity in question is games, which remain a terrifying yet appealing medium for business (Bogost, 2015). Terrifying because traditional organizations have little knowledge about games, or rather they do not understand them and therefore fear them. The cost, complexity and unfamiliarity of games makes them seem risky, expensive, and confusing (Bogost, 2015). And appealing because they seem like magic attention machine that inspire people to spend tens or hundreds of hours in such concentrated attention when playing video games. According to Boost, games become a business opportunity for those who may be able to harness the fear of corporation and help them to believe that they are benefitting from such magic power of games. Consultants exploit the client's feeling of confusion, weakness and inadequacy to propose a pre-prepared gamified solution. They leverage, in particular, on the twofold trick of the "gamification" term itself. The first part of the term, "game", capture the attention as it is conceived as

something characterized by magic and power, as previously argued. How it might be if we could apply them to other contexts. Imagine what we could achieve! By putting games up front, gamification perks up the ears of its potential customers, offering a pique that stands out in a noisy environment of possible business solutions (Bogost, 2015). Yet this rhetorical power derives more from the “-ification” suffix of the term, which makes applying that medium to any given purpose seem facile and automatic (Bogost, 2011). It makes any proven techniques or devices look simple, easy and repeatable, in the same way as to beautify, falsify, purify and so forth. According to Bogost, the purpose of business consultants is to make profits from the exploitation of the gamification's rise. They are more intended to transform the idea into a trend that couldn't be ignored, leveraging on the context of “-ifying” games. While game designers interpret “key mechanics” to refer to elements of game central to the design aesthetics of the medium or to the player experience (Bogost, 2015), for the consultants and gamification advocates being “key” just means being “-ifiabe”. Which means that the gamifier's idea of centrality is different from the designer's one. For the gamification advocate, the nature of games is whatever is most easily abstracted, packaged, and sold as business services or software, most easily fashioned into a solution (Bogost, 2015), while for game designers this involves a more complex form of evaluation. This is the reason why, in the traditional version of gamification, it was misinterpreted as an easy and trivial process of adoption of simple, repeatable, scalable feedback systems such as points, levels, badges and other rewards (Bogost, 2015).

Second, Bogost sustained that gamification is not really a style of game design or a way of putting games to use. Rather, it's a style of consulting that uses games as its solutions. Despite appearances, this adoption is not very interested in the possibilities and potential of games as such. According to Bogost, consultants are more interested to the process of persuading customers without any interest on the truth value of the propositions presented. The problem is not found in the product, that is gamification, or even in the outcome, but rather in the process of presenting that product or outcome as what it needs to be in order to fit the individual circumstances, for the only purpose of benefitting the agent. They are not interested whether individual companies have or have not “succeeded” in their business

applications, or whether or not the gamification solution in question has “worked”. All that matters is that gamification has been pursued as a strategy meant to solve a problem (Bogost, 2015). The concern of the gamification consultant is to establish gamification as a solution that can be applied in many context, with the goal of increasing the possible customer base for services and increasing the demand for such activities by transforming them into a trend executives cannot ignore if they want to appear up-to-date (Bogost, 2015). That is why Bogost affirmed that “the end result of gamification solutions is to justify gamification solutions” (Bogost, 2015, p. 70). Moreover, “gamification is the pursuit of more gamification” (Bogost, 2015, p.70) since the goal of the movement is related merely to the establishment and continuance of the practice. The real purpose of consultants and service providers has nothing to do with the real reality of gamification and business problems such as engagement and loyalty. All that matters for them is making those services a required feature of an organizational strategy, so that consultants can make profit by selling the latest insight surrounding them.

Third, Bogost also sustained that gamification has little to do with games and he questioned if properties always related to gamification like real-time feedback, transparency, and leveling-up, have any special relationship with games. He claimed that nothing about these virtues seems limited to games. Rather, gamification have more in common with the concept of “business intelligence” proposed by the IBM researcher Hans Peter Luhn in the 1950s, as a way to automate statistical procedures to produce data that, when communicated effectively via “input-output equipment”, might be “assembled to accommodate all information problems of an organization” (Luhn, 1958). However, even though business intelligence has a long tradition in the enterprise, gamification proponents have not connected their effort to such historical examples. This is because such tradition is less palatable and appealing compared to game-based solutions. Moreover, IT solutions are far more complex to sell and given the flood of young millennials becoming the new workforce, it is more likely that a game-based solution seem sexier and more relevant to today business goals (Bogost, 2015). Finally, corporate middle and upper managers also want to make themselves and their division more creative and attractive by following the latest trend in the enterprise setting.

Fourth, in accordance with Bogost opinion, gamification's relationship with games is just one of exploitation such that Bogost suggested the term "exploitationware" as an alternative for gamification (Bogost, 2011). Moreover, gamification proponents are totally and completely indifferent and unconcerned about what games are, what uses they might be good for, and how they might be best employed in the context of business or organizational practice. Rather, they are far more concerned to establish an entire regime and industry around them and the gamification concept. In doing this, gamification construct is "carefully wrought", fashioned with such a rigor and detail over so long period as to strike us as something credible (Frankfurt, 2005; Bogost, 2015).

Thus, can we talk about gamification failure?

Yes, as gamification is intended in the hype phase. The Bogost's criticism targets all those who have exalted the gamification instrument without knowing the tool thoroughly. While he used harsh words against consultants, his criticism is addressed to all those who exploited the gamification's rise without any concern for its validity or even its connection to actual factors in the material world (Bogost, 2015). Many people have mistaken incidental properties of games such as points, leaderboards, badges and so forth, for the more fundamental and tricky activity of designing more sophisticated experiences in the service of diverse functions and goals. The only purpose of some gamification proponents is to advance it as a solution rather to determine how to accomplish either the goals of organizations or to exploit the capacities of games.

This should not be interpreted as a way to blame gamification's proponents and consultants. As any other new technologies, the hype phase is the normal evolution that lead to a more conscious application and usage of this technological tool. After reached the hype, gamification is getting to be aware on its limits, specially in its application inside the organizations. While the hype surrounding the gamification is slowly running out, the gamification sector is increasingly becoming more mature. In this path of evidencing its limits, our purpose is to validate gamification less a trendy flash but more a solid tool for organizational purposes.

Given the purpose of this dissertation, we will focus our attention to the HR processes. In accordance with the state of the art of gamification instrument, the HR department is still skeptic in the adoption of such tool. In Italy, especially, both because of the culture or because of lack of knowledge about this new insurgent, only few enterprises are adopting gamified solutions inside their HR processes.

In the following section, given a sample of 335 Italian enterprises, we will give a look to some statistics provided by Randstad about the adoption of the gamification in Italy, the reasons why they have applied it inside their organizational process and their interest on its future application.

## 3.2 GAMIFICATION IN NUMBERS

While gamification was on everyone's lips, both to exalt it both to proclaim its criticism, evidences suggest that there is still little usage of this instrument inside organizations. In literature we can find some virtuous and successful examples, but they are very few if we compare them to the population of organizations, especially if we focus on the Italian area. Big enterprises such as Cisco and L'Oreal, while they are the most named and popular between gamification's applications inside the HR department, the fact of the matter is that they are not adopting it yet for their HR practices in their Italian headquarters.

The Randstad's report "HR Trends and Salary Survey 2017" ([https://www.randstad.it/professionals/azienda/randstad\\_hr\\_trendssalary\\_survey\\_2017\\_report.pdf](https://www.randstad.it/professionals/azienda/randstad_hr_trendssalary_survey_2017_report.pdf)), in collaboration with ASAG (Alta Scuola di Psicologia Agostino Gemelli) of Cattolica University, was conceived to verify and comprehend how new trends in the HR field are perceived by HR professionals. Among these unconventional issues, we can find also the gamification tool. The research is intended to study the impact of this new innovative instrument and the challenges related to its application in the field of human resources.

## METHOD NOTES

### **Target universe**

- Over 4.000 HR professionals (pure or multi-fiction HR)
- Organizational position: HR Director, AD, Country Manager CFO, Owner
- North of Italy area
- Clients and potential clients of the Randstad Professionals division

### **Sample**

335 complete interviews

### **Methodology**

CAWI interview (Computer Assisted Web Interviewing): structured interview of about 15 minutes

### **Timing**

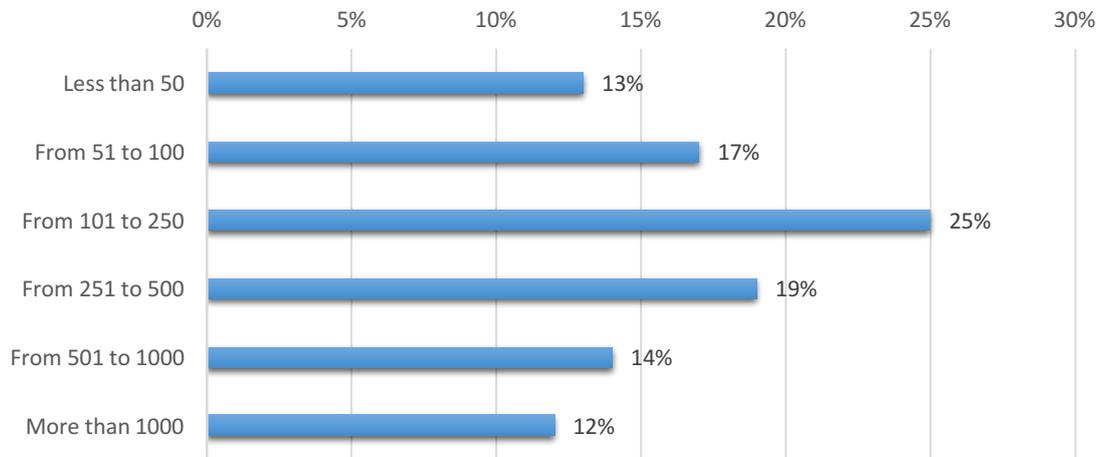
Data gathered in the period between the 1st of February and the 15th of March 2017

### **Sample profile**

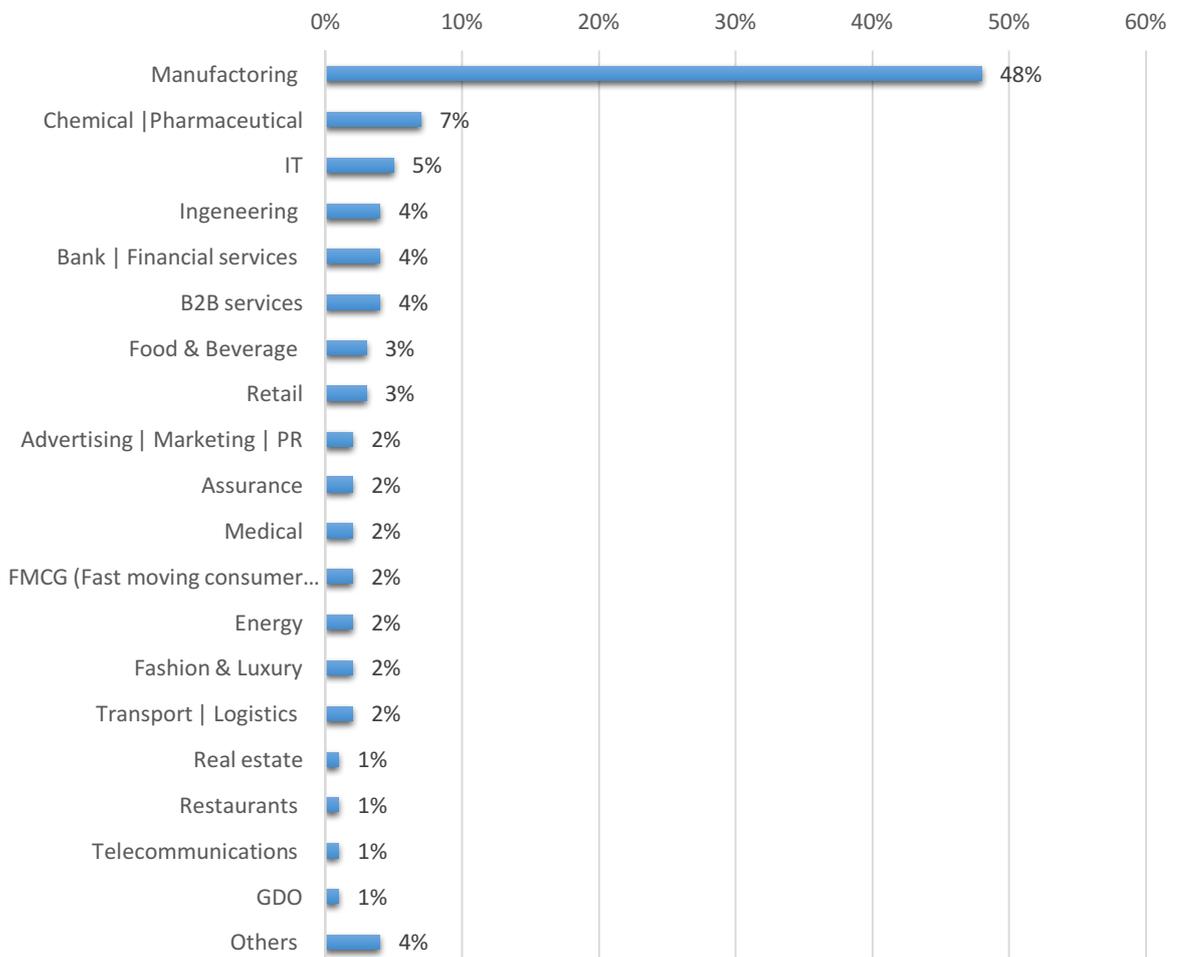
- Provenience



- Enterprise dimension/number of employees

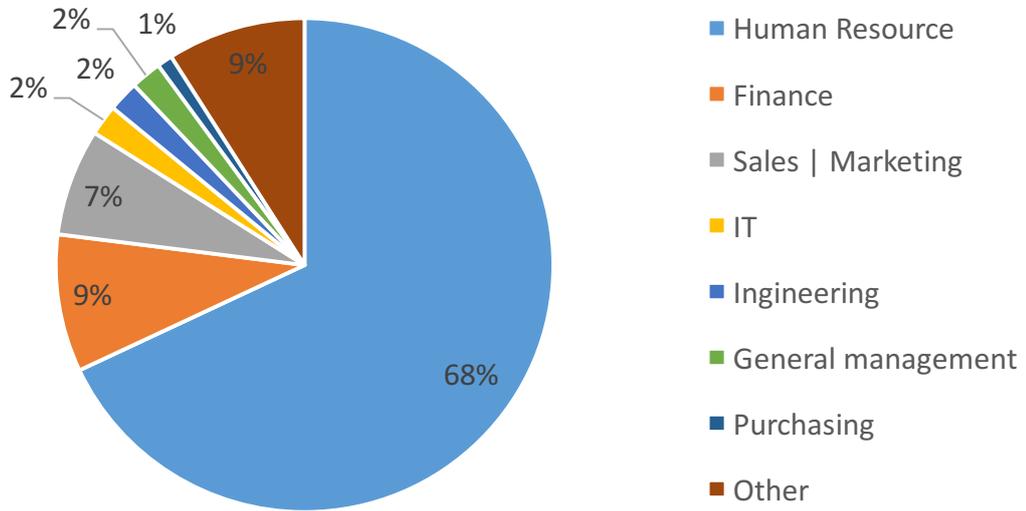


- Industry



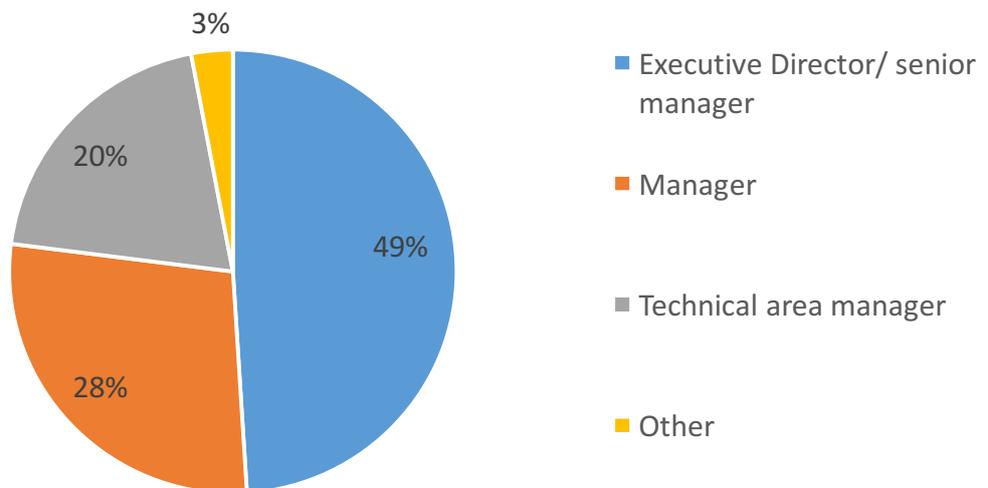
- Department of belonging of the interviewee

Department

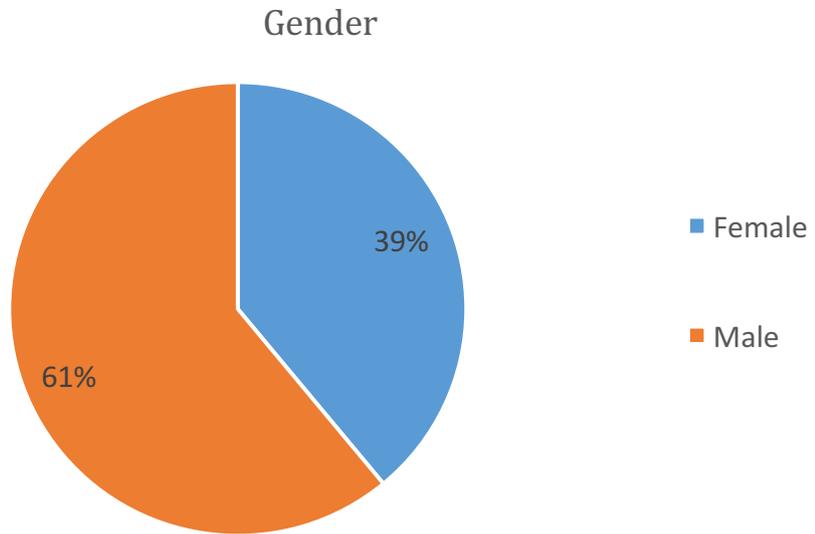


- Qualification of the interviewee

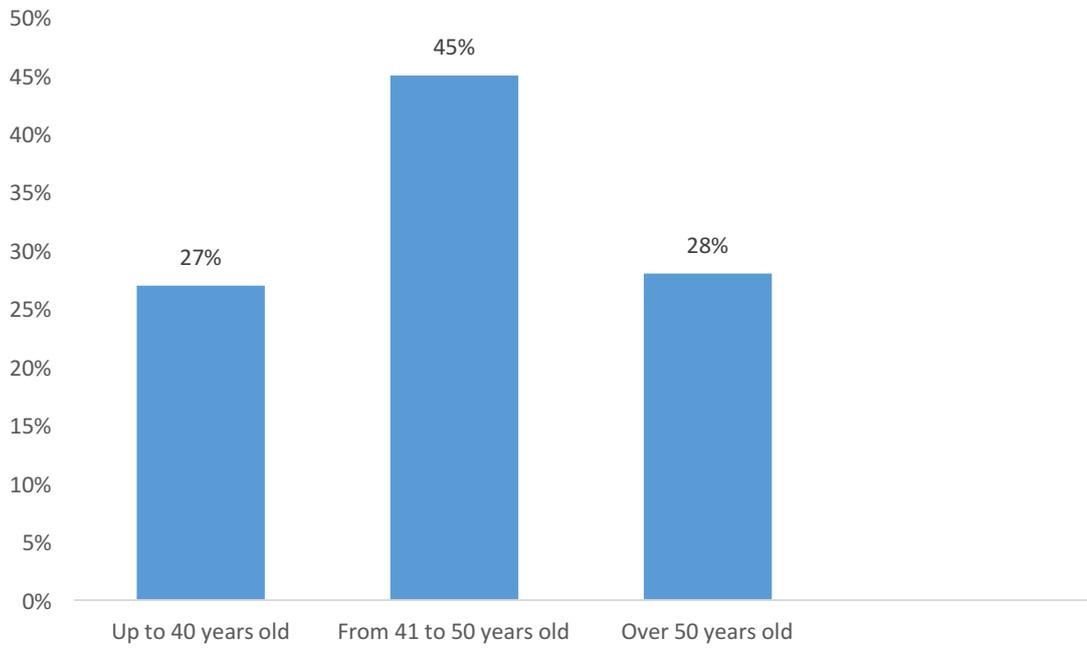
Qualification



- Gender of the interviewee



- Age of the interviewee



The “HR Trends and Salary Survey 2017- Report: The challenges of the unconventional”, is a report realized by Randstad Professionals, which is a specialized division of the Randstad group, the largest operator in human resources services, which deals with the research and selection of middle, senior, and top management, in collaboration with ASAG, Alta Scuola di psicologia ‘Agostino Gemenlli’ of the Cattolica university of Milan. The survey is based interview conducted between February and March 2017, in which 335 senior executives of Italian companies from different sectors were asked to answer to a structured interview of about 15 minutes. The research is intended to analyze trends and developments in the human resources field and the selection process in Italy, among which we also find game practices inside organizations.

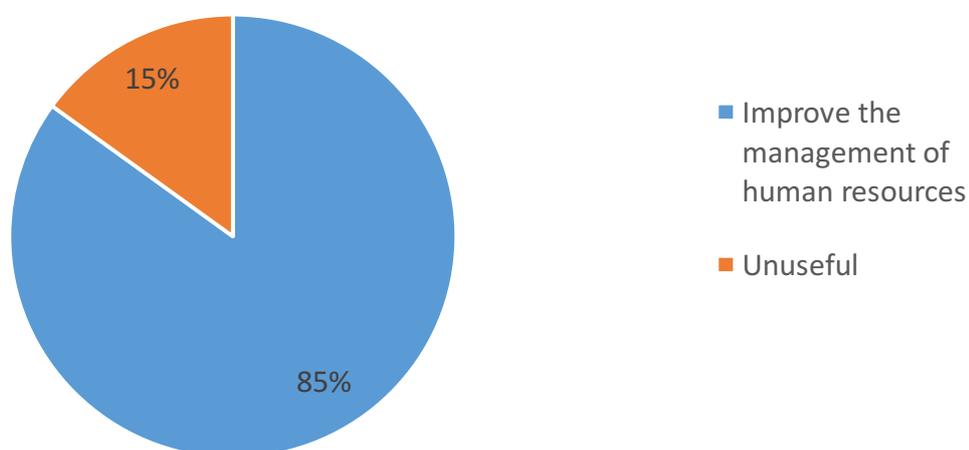
In particular, for what concern gamification, Marco Ceresa, the Randstad Italia’s CEO, commented: “Digital transformation is affecting all areas of corporate management, and human resources department is not an exception. Introducing digitalization elements drawn from game design allows to stimulate the interest of candidates and employees, improve their involvement and increase they motivation to practice”. However, nowadays in Italy only one company out of four, demonstrate to know HR gamification fairly well. This is due to the fact that HR gamification is a new instrument, and thus a relatively limed number of HR professionals have an in-depth knowledge.

The figures speak from themselves: only 26% of the interviewees are acquainted of this new instrument and how it can be exploited to benefit the organizational operations, while the 38% believe that gamification is a relevant tool for their profession.

Overall, the HR managers interviewed responded with great interest and demonstrated to have immediately grasped the potential of this instrument. In fact, 85% of the HR directors believe that HR gamification improves the management of human resources, while only 15% consider it unuseful. In particular, the main traits that HR managers recognize as linked to gamification are essentially referable to the possibility of incentivizing and motivating the internal resources of the organization, but the emphasis is also placed on availability of more actual and innovative solutions. Figures say that, for the 44% of the interviewees, gamification

is considered a good way to stimulate creativity and a great tool to trigger involvement and performance. On the other hand, 43% of HR managers consider it useful as it introduces a new way to experience work and bring to the table a new style of relationship and languages that are far closer to the digital natives, recognizing that becoming more digitalized will be of the utmost importance in the next future to attract and retain talents and to remain competitive in the market.

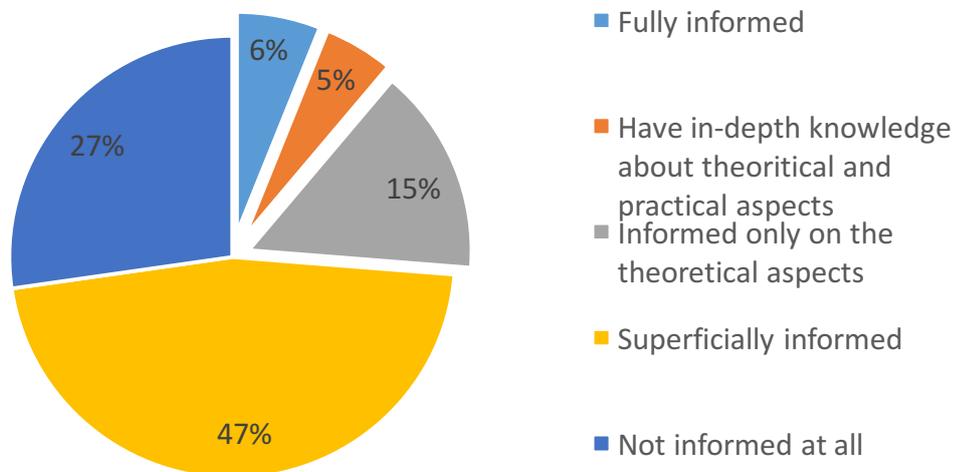
### Interviewees' opinion about the usefulness of gamification



According to Caterina Gazzoli, director of ASAG, Alta Scuola di psicologia 'Agostino Gemelli' of the Cattolica university of Milan, "HR gamification encourage the ludic dimension and recovers the intelligent use of the game to bring organizations closer to people. Basically, HR managers approach gamification in two ways. In some cases, this instrument is seen with suspicion and mistrust as is conceived as an unconventional method, risky and out of the box, and thus HR managers are not willing to use it. On the other side, organizations that have experimented it, in an intelligent and constructive way, confirms its high value and positive impact on its employees". "An effective use of gamification is possible only when there are concrete actions and an organizational culture favorable to innovative solution", she adds.

However, from an empirical standpoint, the 65% of the interviewees consider gamification a useful tool but not already a valid substitute of the traditional practice. They are willing to combine gamification with the more conventional HR practice, but are still dubious on their complete adoption as they are committed to the more traditional practice yet. This is probably due to the fact that there is still a lack of knowledge among HR professionals. Looking at the results in detail, while the 26% of interviewees declared to be acquainted on this new instrument, we discover that only 6% of them are fully informed and have already tested this tool, 5% have an in-depth knowledge about the theoretical and practical aspects, and 15% is informed only on the theoretical aspects. While 46% have only read or heard about it and 27% have never heard about it.

Interviewees's expertise on gamification



These figures confirm the general sentiment around gamification. Most of the HR professionals are aware, some more than other, about the potential benefits of an effective adoption of the new gamified systems. However, they are still not informed enough to prefer gamification respect to the more traditional and usual practices in the management of human resources. This is probably due to the fact that gamification has not already reached its maturity from the technological standpoint. It is not being in use for long enough yet. Its initial faults, as those underlined by Bogost, and the inherent problems have not been removed or reduced by further developments. As drawn from the game design field we can understand part of its scientific background, but since it has to deal with human being, particularly inside the complex systems of organizations, we cannot fully understand the practical implications of its adoption. This is probably the reason why gamification, in particular in the HR setting, has not already seen widespread use.

### 3.3 SWOT ANALYSIS

This new phenomenon named gamification, has captured the attention of many organizations that have recognized the potentiality of such instrument. However, in this relatively short time in which gamification started to appear and then explored from the theoretical and practical point of view, it has not already reached its technological maturity to reduce and overcome its initial faults and inherent problems by further developments.

Moreover, in the rush to gamify existing process, attracted by the claimed potentialities of that such new instrument, organizations are at the risk of not doing proper analysis to verify the validity of some of the gamified systems and if gamification can provide a satisfactory answer to their problems. Most often, gamification is introduced into delicate situations such that of the management of human resources, without proper due-diligence and that is the reason why many gamified applications have failed. Managers should understand that gamification, far from being the silver bullet that will be able to help organizations improve dramatically, it is not without faults.

This present dissertation is actually intended to clarify the gamification concept in order to provide a different standpoint for those who want to pursue it inside their organization. While trying to implement gamification within enterprises, it is very important to understand strengths and weakness of such instrument. Without any comprehension of the pitfalls to avoid, many organizations risk to fail in their implementation of the gamified practice.

In the following section, we want to provide an analysis of gamification with the aim to dispense a strategy for guessing what lies ahead in the future. In particular, through the collection of some game designers interviews we present a SWOT analysis for the gamification field. The goal of such analysis is to provide a useful tool for identifying both positive and negative aspects of gamification, as well as its perspective of development and risk of decline. Furthermore, we asked them to answer to the question: what do you think is necessary to incorporate gamification in the HR department properly and successfully? The aim of our

analysis is to provide an overview of the gamification phenomenon as it is evolved nowadays, highlighting the issues that are essential to adopt this new instrument properly and effectively in the HR department.

### 3.3.1 THE METHODOLOGY

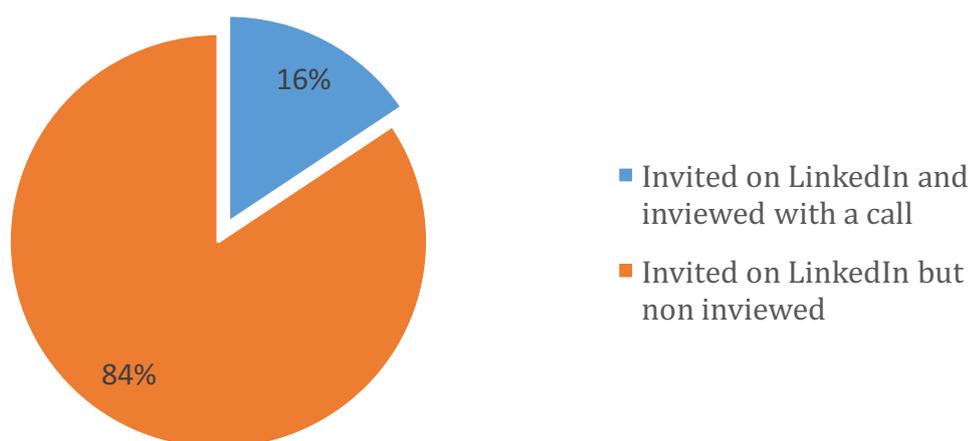
In order to provide an analysis of gamification that is intended to give some important insights in its application and development inside the HR department, we gathered some interviews from four Italian gamification experts and one from the United Kingdom. The chose to collect information from those experts is due to the fact that they have an in-depth knowledge of gamification as a technological tool and have the essential expertise that is needed to grasp the major issues and opportunities of such instrument. They have a broad understanding of such phenomenon and can provide different point of view from those people that are not inside the gamification field.

For this purpose, we choose to exploit LinkedIn as it is “the world’s largest professional network with more than 562 million users in more than 200 countries and territories worldwide with the mission to connect the world’s professionals to make them more productive, successful and reachable” (<https://about.linkedin.com>). Putting the word “gamification” in the search engine inside the LinkedIn web site and selecting “gamification in people” we found out the list of the professionals that has currently a job in the gamification field. Primarily, we ask them the connection, and only when they have accepted we started to interact with them by sending a message in which we explained our purpose of research. While we tried to connect with as many of gamification experts as possible, only a part of those people accepted the invitation. Among these latter, only a few responded to the message, and an even more limited number of experts were willing to continue the conversation by forward messages or by letting them to be contacted with a call.

In detail we asked to connect to 32 experts in gamification field, from both the academia and the consultancy field, trying to select those people who had some

kind of experience with HR gamification. From those experts, 20 have accepted the invitation to connect, while the rest are still “pending”. Among those who accepted we sent them a private message in which we explained the university of provenience, the field of study, the goal of research, and if they were willing to share their knowledge given their experience. 15 out of the 20 contacted responded to the first message, but those who were available to go further in the exchange of information were only 5 out of 32, as illustrated in the graph below.

Gamification profesionionists invited on LinkedIn and interviewed



Once they have accepted to go further in the interview, we managed an appointment to call them. The choice to contact them telephonically is due to the fact it was the easiest way to reach them since they came from different places in Italy and two of them are working abroad: Vasilis Gkogkidis in the United Kingdom, and Fabio Cozzi in the Netherlands.

Out of this pool of experts we have been given the possibility to interview five experts, whose profile is presented below.

Professional	Expertise in gamification	Experience in HR gamification
 <p data-bbox="276 920 504 954">Christian Zoli</p>	<ul data-bbox="555 495 946 1088" style="list-style-type: none"> <li>•Professional with 12+ years of experience in designing and publishing games</li> <li>•7+ years of experience in Communication and motivational coaching</li> <li>•TEDx talks and presentations</li> <li>•Co-Founder at Beaconforce Inc. and Millenia Minds</li> </ul>	<ul data-bbox="994 495 1385 1032" style="list-style-type: none"> <li>•4+ years of experience in application of game design elements to employees' engagement and retention</li> <li>•VP of product Beaconforce, a people management solution intended to lead to higher employee productivity, better talent retention</li> </ul>
 <p data-bbox="276 1570 435 1671">Vasilis Gkogkidis</p>	<ul data-bbox="555 1178 930 1760" style="list-style-type: none"> <li>•2+ years of experience as gamification consultant at GAMIFICATION+ LDT, in United Kingdom.</li> <li>•Organizer at Gamification Europe, an annual conference bringing together the gamification industry and academia</li> <li>•LEGO SERIOUS PLAY facilitator</li> </ul>	<ul data-bbox="994 1178 1385 1715" style="list-style-type: none"> <li>•Gamification trainer at GAMIFICATION+, in which he makes use of gamification mechanisms (such as leaderboards and points in the class scenario and then translated to real world currency which they could use for the workshop's purchase)</li> </ul>

 <p>Fabio Cozzi</p>	<ul style="list-style-type: none"> <li>•Business development manager at OrangeGames, a Dutch based international gaming company</li> <li>•Digital engagement and Gamification manager at Park in Lab, a start-up in Swiss area</li> </ul>	
 <p>Biancamaria Mori</p>	<ul style="list-style-type: none"> <li>•3D graphic, game artist, game developer, tech advisor freelancer</li> <li>•Gamificator, project manager and app developer</li> </ul>	<ul style="list-style-type: none"> <li>•Co-developer of a gamified application for CDC parrucchieri, created to renew the learning and training experience of its potential employees</li> </ul>
 <p>Adriano Gazzero</p>	<ul style="list-style-type: none"> <li>•Gamification expert with 20+ years of experience in the consultancy field as founder of Scream, a small e-marketing solutions company in Philadelphia</li> </ul>	<ul style="list-style-type: none"> <li>•Co-founder of Whappy.it., a gamification platform that is intended to leverage on gamification to engage people, among which we find also employees.</li> </ul>

In order to gather the information needed to build our analysis we submit them five questions that were focused on the issues that HR department need to face when implementing a gamified solution. The questions are:

- Which are the biggest strengths of gamification on which the HR department could leverage on in the management of people inside organizations?
- What do you think, instead, are the biggest weaknesses of such instrument that need to be tackled and take in mind in the future to improve for the better its application in the HR department?
- Which are the opportunities that HR managers have to keep in mind as favorable trends and future developments of gamification that ameliorate its usage for HR practices?
- Which are, instead, the threats that can compromise its future application in the HR department?
- What you think is necessary to incorporate gamification into the HR department properly and successfully?

According to the answers provided by these experts we systematically organized the information on the basis of the SWOT analysis. Strengths are internal resources and abilities that an entity (which is gamification in this case) has and that can help it to achieve its goals; weaknesses are the entity's internal limitations, that could interfere with the achievements of its goals; opportunities are the favorable trends in the environment that the entity could play on; threats are unfavorable trends in said environment that could limit development and impede progress towards its goals (Rapp, 2014).

### 3.3.2 STRENGTHS

According to the experts interviewed, one of the main reasons for which the idea of gamification has worked and has saw such a widespread popularity is that games are more effective than the traditional work with regard the activation of intrinsic motivation. "Let's say that the idea on which gamification is based is very valid, that is, to bring the world of work, one step at the time, toward the idea of intrinsic motivation", according to Christian Zoli, co-founder and vice president of product at Beaconforce. Looking to the framework that Christian has created and

presented at the TEDx in Bologna in 2013, the intrinsic motivation may be based on four fundamental pillars: clear objectives, high level of feedback, an environment with a good culture of error, and high level of autonomy. For the HR managers, who have to deal with the management of people inside the organization, these elements are very difficult to put into practice in a real work environment because of its high level of complexities. It really requires a very high level of change management. Conversely, games are more effective in the implementation of those pillars since games are a sort of simplified environment in which you have very few elements. Games are a simplification of reality, hyper structured, and hyper formal in which there are no unuseless details, there is no noise that often exist in a complex environment. So it is much likely in such system to create effective mechanism that foster intrinsic motivation, since it is easier to give clear objectives, it is easier to give feedback, it is easier to give a chance for people to make mistakes and it is easier to give them high level of autonomy. This is what the HR managers need to keep in mind when dealing with gamification practices. They could leverage on this property of games when they need to foster intrinsic motivation, which is one of the main issues for the HR department.

So gamification is a kind of test ground to make people understand about their job and what is needed to improve their performance. It is a sort of “sandbox”, a testing environment that isolate and outright experimentation from the real world environment, that make people in the condition to work better and to grow in their work performance.

Another important strength of gamification is that people are still excited about it and some want to try it out and see if it works or not. That is a big advantage for people in the industry at the moment and for HR managers that are willing to try it, since this means that there will be further developments and achievements on the research about this matter. Furthermore, “the global community around gamification is a big strength as well and also the community around it that is quite friendly and tries to work together as much as possible to improve”, as Vasilis Gkogkidis, organizer at Gamification Europe and gamification trainer at GAMIFICATION+, stated. They could provide important information and help those

HR managers who are willing to apply it but still not have the needed understanding to prefer it to the traditional HR practices.

### 3.3.3 WEAKNESSES

The gamification boom has basically been a bust, as the interviewees confirmed. There was first a huge reaction from the market with many expectations from people. Nowadays, most of those expectations were not realized and gamification is not anymore in the hype phase. It is in the plateau phase where it is used by few companies and it is no longer a buzz word named in all events, following the normal path of all new technologies. But if we look at the causes, it failed because those who put it into practice did not know the basics of such instrument. If gamification is applied without knowing the mechanism underlying intrinsic motivation, gamification is a boomerang. The instrument is perceived as a tool for control, measurement and assessment. So it not only fails in its intent, but it also has a reverse effect.

One of the main reasons of such bust is that many gamified applications have been made by computer programmers or software engineers. This is because gamification often make use of digital tools, such apps, web apps, web sites. Gamification has attracted and committed lot of people who were IT engineers, which are actually one of the most distant figures from those who can understand positive psychology, cognitive-behavioral sciences and so forth. From this fact, we can infer that one of the biggest difficulty at the basis of a good gamification is that to do it in right way we have to be not experts but at least aware of different very important subjects, from positive psychology, cognitive-behavioral sciences, and a minimum of neurosciences to know what happens to a person on a biochemical level when he or she reached a certain condition rather than another. The true is, very often gamification was made without any considerations on these matters, but only leveraging on the famous triad PBL (points, badges, leaderboard).

The actual situation is that, most of the peoples who dealt with gamification did it because it was the current trend, but were not acquainted enough about why and how it could be effective. As Christian Zoli revealed, “Just to make one aware on

how it is difficult to create an effective gamification, every year more than one thousands of board games are placed on the market. However, 95% of them does not exceed the first year of the launch. That is to say that, just because it is a game it does not mean that is fun and effective in its intent to engage people. Most of the games are ugly, boring and thus fail. So to implement a gamified system drawing from the game design field, one should be aware that most of games fail and only the well-designed ones reach the success”.

According to this, HR managers could misunderstand the simple game mechanics with the more important proprieties that a gamified application can provide. Far from being a silver bullet that is able to improve HR practices dramatically, HR managers need to go further in their knowledge about the human being psychology to have an effective implementation of gamification. In their strategy to apply gamified systems to improve employees’ motivation and performance they need the combined expertise of IT engineers and cognitive-behavioral experts.

Another important aspect that is connected to what is previously outlined is that, the fact people are still excited about gamification and someone are curious to try it out, is at the same time it’s weakness as well. Risk averse organizations and HR managers are not sure gamification works because there is quite a lot of negativity because of projects that have failed. Because gamification is new, it’s not a bullet proof theory and methodology that companies trust like let’s say social media marketing or some other processes that are standard in business.

### 3.3.4 OPPORTUNITIES

While some gamified applications have failed, gamification has the power to make HR managers aware that something need to be changed in the organizational settings. Because of this emphasis on the intrinsic motivation, HR managers are more informed on the need to redesign the work experience leveraging on elements that far from being only extrinsic motivators are more focused on the psychological

necessities of individuals. Gamification itself represent an opportunity in the sense that it was able to awaken managers and HR professionals towards the necessity to move from the traditional organizational settings to the more modern instruments that leverage of the intrinsic motivation and on the psychological needs of the human being, focusing on the resulted experience.

The fact is, when you are applying gamification inside your organization, you are redesigning the work experience. But gamification is only one out of many instruments that is able to do the same. There are, for example, two ways by which we can obtain similar results in terms of motivation. One way to foster intrinsic motivation and to redesign the work experience is to restructure the organization chart in a more agile and flat manner. Another way is to increase the level of autonomy with work systems based only on the results, the so called ROWE (Result Only Work Environment, which is a human resource management strategy wherein employees are paid for results rather for the number of hours worked. They are work environments in which employees work only by result and the teams are changes from time to time in a fluid manner and have full autonomy on the process, on the timing, on the places where to work, in which autonomy is the focus. So in fact, these strategies are not gamification but they work just as well.

Generally speaking, gamification is one of the many ways you have to foster intrinsic motivation, according to the experts interviewed. And perhaps not even the easiest one nowadays because it is still hardly accepted, rather than redesigning some activities and some groups in order to promote a more fluid flow of the organizational process. Only when these strategies cannot be implemented, then organizations decide to leverage on gamification. But, the problem is that gamification is not already well known and understood to such an extent that it is confused with some general mechanisms as points, badges and leaderboards. Conversely, what creates intrinsic motivation is a complete redesign of the work experience. Once managers have understood that, they can leverage on other easier strategies that change the work experience.

Another important opportunity is that after the plateau phase, people and consultants who used to talk and deal with gamification because it was the new

trend of the moment, will stop having to do with it. The next phase in the gamification field, is that there will be a natural selection of those people who used to handle the gamification phenomenon. Only those who's have an in-depth knowledge of such instrument and have been effective in applying it, will not abandon this technology. The opportunity lays in the fact that HR managers will be aware of a more effective examples of gamified application, people will start to trust on it and more and more organizations will be more willing to abandon the traditional processes for the more innovative solutions as gamification.

Another important insight, on which HR managers could leverage on is the fact that some of the interviewed experts believe that AR (augmented reality) is something that will be used a lot in gamification. VR (virtual reality) will work better for games and is a completely immersive experiences. However, AR already has some interesting uses in gamification projects. This new insight could help HR managers to grasp the potential uses of gamification in the future.

Gamification is also trying to mature and there is a chance to prove that its working so people keep using it and HR can start to trust on it. There is also a big opportunity for people that want to document and research projects that include gamification but there is little research and books that document case studies in an organized and analytical way.

### 3.3.5 THREATS

The biggest threat of the gamification community is that they never actually break through to a bigger audience. If industry (with its empirical uses in the HR department) does not have a wider conversation with academia and the customers (or employees, in this case), then experts are afraid that gamification will cease to exist only in the form that we know it today.

The community around gamification should also start to define the figure of the gamification expert: he or she need to be an IT engineer or and expert of psychology and cognitive-behavioral sciences? By defining such figure, HR

managers and organizations in general may start to trust more on the expertise of people that deal with gamification.

HR managers also need to do more reading in terms of the origins of gamification. It's not since 2010 that it has been around. The term "gamification" has been around since 2010 but the use of games for serious purposes has been around for much longer. Gamification should be connected to the more solid research about the use of games for serious purposes, instead of leveraging only to the more appealing trend of videogames

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- Games more effective than traditional work in the activation of intrinsic motivation
  - Games simplify the reality
  - Games are sort of “sandbox”, testing environments
  - People are still excited about it and want to try it out
  - Gamification community is a big strength

- The hype around gamification has raised many expectations that failed to realise
- Many gamified applications were carried out by IT engineers who were actually one of the most distant figures from those who can understand the psychological needs of individuals
- Risk adverse organizations and HR managers are still not sure that it works

- Gamification has the power to make HR managers aware that something need to be changed in the organizational setting, focusing more on the psychological needs of individuals and on the experience
- While gamification mature, there will be more and more experts who have in-depth knowledge
- AR is something that will be used a lot in gamification
- As it matures there is a chance to prove that it works

- Gamification may cease to exist only in the form that we know it today if industry does not have a wider conversation with academia and customers (employees)
- Gamification expert is still a vague figure: he or she need to be an IT engineer or a psychology expert?
- Gamification should be tracked back to its origins to have a deeper understanding on it

### 3.3.6 WHAT IS NEEDED TO INCORPORATE GAMIFICATION INTO THE HR DEPARTMENT PROPERLY AND SUCCESSFULLY?

More than competences, to properly and effectively implement a successful gamification strategy inside the HR department is that management need have the willingness to carry out a change management process. What they usually underestimate is that, to change the organizational processes implementing a gamification strategy, they need to be aware that such strategy should lead to a change management process on the overall company environment.

According to the experts interviewed, one of the reasons why nowadays there is low engagement, high turnover, the issue on the management of millennials and so forth, that is broadly speaking the whole crisis in the management of the people inside organizations, is due to the fact that the management model as we know it today, which is the only one that is known as possible (that is, a structure based on homologation, control, attention on the results and all those things that we have always taken for granted) is outdated and is the consequence of a management model born in the industrial revolution when the world of work was completely different and based on the assumption that the work itself is not interesting and need to be controlled through the prize-punishment mechanism. This is the model of extrinsic motivation.

So the problem is that, if HR managers perform a gamification strategy but still have in mind the rules of extrinsic motivation, they are doing nothing but emphasizing the prize-punishment mechanism rather than giving value to the activities performed. Basically what they do is to increasing the consequences of extrinsic motivation, that is lowering the performance, short term attention and all that follows.

So the real first step to make an effective gamification in the HR department is to understand what is the meaning of intrinsic and extrinsic motivation, what is needed to foster one rather than the other, and to make a careful analysis of the environment in which management is about to intervene. Because if there is no an

organizational culture favorable to change, gamification could not be implemented properly and successfully.

Another important issue, even more important than the effort to implement a gamification system, is to share why this need to be done. What makes gamification work is the consent and a shared vision that HR gamification has favorable outcome throughout the organization. HR managers need to make everyone understand why is important to make such change. People are more willing to follow the path of change if they understand the why and have internalized it. As human being we are used make habits to simplify our life. The change is not natural. So if you want people to change their habits, you need to give them a very strong reason. That is what HR management should understand to effectively carry out a change management process, and thus a successful gamification system inside the HR department, but also throughout the organization.

Finally, in order to deploy any kind of gamification it is very important for the HR managers to commit to using the system and going through the steps that were discussed and decided by the gamification designer. If the HR managers do not put the effort to implement and measure what was discussed, then there is no point in even trying. Gamification is not a magic wand that will solve every problem. There is a lot of effort needed for changes to happen in an organization. Another important thing is to correctly analyze the problems in the management of human resources that they are trying to solve with gamification. Again HR managers and designer need to have an open honest discussion about it.

So the take way insights are:

- The real first step to make an effective gamification is that HR managers need to have the willingness to carry out a change management process. In order to implement an effective HR gamification strategy, from recruitment, employee retention and appraisal, they need to be aware that such strategy should lead to a change management process far from the outdated and traditional management model based only on extrinsic motivation.

- They need to make a careful analysis of the environment in which they are going to intervene in order to understand if there is a favorable culture to change.

- HR managers need to make everyone understand why it is important to make such change. So what HR management should understand to effectively carry out a change management process, and thus a successful gamification system inside the HR department is that what makes gamification work is the consent and a shared vision that HR gamification has favorable outcomes throughout the organization.

- They need to be committed in using the HR gamification system and put an effort to collaborate with the gamification designer to effectively implement such instrument.

- Finally, they need to correctly analyze the problems in the management of human resources that they are trying to solve with gamification. They need to engage in an open discussion about it with game designers.

*As gamification mature, there is the need to understand which are major issues around such new phenomenon. Most of the critics are related to the fact that hype around gamification has increased its popularity without an in-depth understanding on what is needed to implement it properly and effectively inside the organization, in particular in the HR department.*

*While enterprises are still skeptics on its complete substitution to the more traditional processes, especially in Italy, they demonstrate interest on it and are willing to try it out.*

*To this intent, our analysis has the objective to provide the HR department with a useful tool for identifying both positive and negative aspects of its application for the management of human resources, as well as opportunities and risk of decline. In particular what emerge is that most of the problems lay on the fact that gamification was misunderstood for the mere addition of game mechanics such as point, badges and leaderboards. Instead, what is needed to properly and effectively implement a gamified solution inside the HR department is to clearly focus on the psychological need of employees to foster intrinsic motivation which has a more durable outcome with respect to management objective.*

## Conclusions

As one of the major trend of the moment, gamification has captured the attention of many people that have understood the potentialities of such new technological instrument. The hype around this new-age phenomenon was so big that Gartner, the world's leading research and advisory company, stated that by 2014, more than 70% of the Global 2000 organizations would have at least one gamified application. It trusted so much on such new phenomenon such to believe that it would have become as important as Facebook, eBay and Amazon. However only one year later Gartner reversed its predictions affirming that by the same year of 2014, 80% of the current gamified applications would have failed to meet business objectives mainly due to the poor design. That is to say that gamification, at the time, was still being driven by novelty and hype. The expectations were so huge, and as it is nowadays, that many people, even expert consultancy agencies, underestimated the pitfalls and critics of such new instrument. Far from being the silver bullet that may help organizations to improve dramatically, gamification is not without faults, especially when we talk about its possible application inside organizations.

From the theoretical standpoint, most of the critics lay in the fact enterprises are far more complex systems as compared to commercial-industrial systems for what concern the implementation of gamification. Gamified applications for commercial purposes attract users as they promise to accomplish the goals that they set on their own in a simpler and engaging manner. Instead, when we talk about gamification applied in the enterprise settings the objective is to engage employees to pursue goals that are already set by the management. This objective is far more difficult from giving out points, badges and leaderboards rankings, rather than focusing on more important elements such as balancing competition and collaboration. These latter have to do with more psychological and sociological aspects of the human being. This is where gamification fails. This is what Gartner intended as "poor design".

To this intent, we focused our attention on the origins of games inside organizations in order to understand what is needed to grasp to properly implement gamified solution. We found that studies such those made by Roy (1959), Burawoy (1979) and Brown (2009), not to mention those conducted by Brougère (2005), Henriot (1989) and Savignac (2016), were very useful to understand what lays behind an effective gamified implementation. In particular, we found that consent play a key role in the acceptance to engage in such new process and activities, and thus to follow management's goals. Another important aspect that is needed to consider is that, to properly carry out a gamified solution it is important to identify which theories are more promising to describe the effect of gamified solutions. As mentioned before, one of the main pitfalls is that gamification get games wrong, mistaking incidental properties like point and levels for primary features like interactions with behavioral complexity. According to the theories of motivation that we reviewed before, human being is characterized by complex psychological and behavioral needs on which HR managers should leverage on to make them commit on engage on such new management of human resources inside the organizations.

But what is even more relevant is that such important features of games have been overlooked and underestimated because of the hype that surround gamification. According to Ian Bogost, a game designer and professor at the Georgia Institute of Technology, who is among the industry's most vocal critics, some gamification proponents have only pursued to capitalize on a cultural moment through services about which they have questionable expertise. Gamification was pursued primarily as a practice of marketers and consultants who seek to construct and then exploit an opportunity for benefit, as a consequence of the hype around it.

From the empirical standpoint, instead, the number of organizations that are adopting gamification is still small. Many of them still do not have an in-depth knowledge and still do not trust on it enough to prefer this new solution to the more traditional processes. They have grasped its potentialities, but they are also aware

that to psyching up the workforce takes more than putting a game layer on their systems.

In this regard, the analysis that we provided by interviewing some gamification experts have the clear objective to dispense HR managers, who are those in charge to motivate and engage people inside organizations, with a useful tool for identifying both positive and negative aspects of gamification, as well as its perspective of development and risk of decline. In particular through the collection of the interviews we built a SWOT analysis for the gamification field thanks to which we get important insight from the professionals point of view and experience.

In particular, one of the most important weaknesses is that many HR gamifications failed because of the focus on extrinsic motivation, rather than intrinsically motivating employees. Many gamified applications with the intent to engage human resources have been made by IT engineers, who are the most distant figures from those who can understand positive psychology, cognitive-behavioral sciences and so forth.

However, there are also some opportunities that HR manager could leverage on in the future, particularly those who want to explore it in their practices. One of these is that, as gamification mature there will be more and more experts with a valid expertise. There will be a sort of natural selection for which those who were used to exploit gamification only for profit and those with dubious expertise will be push out of the market. There will be more and more empirical examples that will prove that it works and even skeptics HR managers will be willing to try it. Furthermore, AR is the next evolution of gamified applications. But most of all, thanks to the rising importance and curiosity around gamification, there will be more and more HR managers that will be aware that something need to be changed in the management of human resources focusing more on the psychological and sociological needs of individuals and on how they experience their work

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