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SERIOUS GAMES AS A BASIS FOR HUMAN RESOURCE MANAGEMENT: EXAMPLES FROM THE BANKING SECTOR

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Abstract

Serious games are applied in a vast number of sectors, including defense, aeronautics, pharmaceuticals, healthcare, banking, and media. They seem to have reinvigorated and expanded the field of corporate simulations. Different from e-learning tools, they are relying on new information and communications technologies; they have borrowed from the universe of video games to offer players/learners a new kind of experience. Much more than a simple fashion, serious games have become ubiquitous in the field of recruitment, ranging from the integration of new employees to interactive training, benchmarking and institutional communications. Serious games have had a major effect on human resource management in the companies that use them, and their generalisation augurs some major and lasting changes in this function. The present text aims to study several cases of serious games and demonstrate the different ways in which these games are used as well as their impact on individual and collective performance and on human resource management practices. The prime area of study will be the banking sector, which has been the trailblazer for and a major consumer of serious games. The article will pursue a prospective approach that also gives consideration to potential developments affecting these gaming-educational platforms and the corporate roles they can be expected to fulfill in the future.

Key words: Serious games, human resource management, collaboration, training, new practices, bank.

1. INTRODUCTION

Joseph Chilton Pearce wrote that, “Play is the only way the highest intelligence of humankind can unfold” (Pearce, 1993). Organisations may appreciate the higher intelligence produced through gaming but most refuse to acknowledge this openly and many view the prospect with disdain. Games are equated with entertainment and therefore not taken seriously by managers who generally refuse to accept their usefulness. In this view, games are vulgar and futile whereas management is noble and attends to important issues. Yet serious games are already being used by most multinationals. Born in the United States during the 1990s and having grown ever since in sectors such as health care or aeronautics, games enable new modes of recruitment, training, evaluation and management based on virtualisation and enhanced reality.

The growth of serious games highlights a change in managers’ vision of video gaming practices, which are no longer perceived as a form of alienation and pathology but as a way of stimulating young talents’ creativity and competitiveness, making training programmes more attractive and immersive and communicating more effectively about sensitive subjects that may otherwise be difficult to treat holistically. Serious games are geared towards a population that is relatively familiar with online gaming - particularly Generation Y, which is very used to gaming and the leading consumer of training and coaching. At the same time, serious games have been designed to be accessible to as many as possible.

Like traditional games, serious games offer scenarios that encourage players to move from one stage to another by overcoming any challenges they meet and improving their scores and levels. Serious games’ design combines competencies held by game designers, developers, infographic specialists, scenario writers, community managers, trainers, business experts and human resource directors. All have helped to develop a tool that is entertaining, at the cutting edge of current technologies and corresponds to specific objectives that are relevant to a company’s different businesses, global strategy and human resource management modes.

Once the present article has defined and categorised serious games, its first section starts by trying to enhance understanding of their impact on human resource management practices. The second section then presents the origins and definition of serious games’ different forms and uses, describing how such tools are employed to recruit and integrate employees, enhance training and benchmarking, encourage internal collaboration and disseminate corporate values. The third section is devoted to exploratory methodology based on cases and a characterisation of the banking sector, which is our field of observation. The fourth section combines studies of four serious games: Ace Manager; StarBank; Cash Detectives; and Citizen Act. The fifth section describes serious games’ impact on recruitment practices, training, integration, observation and telecommunications in the human resource function. Finally, after signaling the dangers and limitations associated with serious games, the conclusion summarizes the lessons that might be drawn from this research work.

2. SERIOUS GAMES: PLAYFUL WORK OR PROFESSIONAL GAME

The term “serious games” covers a wide variety of realities, meaning that confusion reigns in this domain. Hence the need to clarify what we mean by serious games while offering a more precise definition of their role and how they affect human resource management.

2.1. Origins and definition of serious games

Back in 1968, Clark C. Abt wrote a book entitled “Serious Game” where he presented his research findings and explained how games constitute a training method that helps to develop industrial projects’ management competencies, diffuse marketing messages, disseminate corporate cultures and familiarise people with business processes. Games and simulation uses have been discussed together for at least 40 years (see for example Smith & McGregor, 1982 and more recently Crookall, 2010).

Serious games proceed from the simulation and collaborative learning developments, but they have to be distinguished. Simulations and e-learning provide a realistic replica of a business environment while serious games develop an unrealistic gaming environment. This is probably an explanation to the fact that the scientific community does not have one single definition for serious games. This would be relatively difficult to establish given the way that this term varies depending on the actors or countries involved. A consensus exists that these are games used for something other than entertainment, but they are often confused with e-learning software or virtual environments.

There are many terms referring to serious games, attesting both to the diversity of the actors involved and the range of approaches followed. "Educational games, Simulation, Virtual Reality, Alternative Purpose Games, Edutainment, Digital Game-Based Learning, Immersive Learning Simulations, Social Impact games, Persuasive games, Games for Change, Games for Good, Synthetic Learning Environments, Games with an Agenda..." (Alvarez and Djaouti, 2010). These terms exemplify the diversity of perspectives regarding objects that are both similar and different in their structures and uses (Sawyer and Smith, 2008).

For Alvarez and Djaouti, a serious game is an "IT application whose initial purpose is to get serious aspects including but not limited to teaching, learning, communications or information, to combine coherently with playful aspects derived from video games" (Alvarez and Djaouti, 2010). According to Noah Falstein, President of the Serious Game Summit, serious games are intended to "make training more passionate and immersive" (2010 Innovations and international Perspectives of the Serious Game). Susy et. al. (2005) have gathered many definitions and propose to put the emphasis on engagement and motivation: serious games are "games that engage the user, and contribute to the achievement of a defined purpose other than pure entertainment". For the purposes of the present article, we choose to reduce the scope of the definition: serious games will be defined as games whose main purpose is to teach practices and types of knowledge, irrespective of their organiser.

2.2. A wide variety of forms, uses and budgets

Annual growth in the video games market is predicted to expand by 10.6% over the next three years (PriceWaterhouseCoopers). Among the different game categories, the most optimistic forecasts are reserved for serious games, which are expected to grow twice as fast as traditional video games - to the extent that entertainment game editors have started to consolidate and acquire development units dedicated to the new product category alone.

The videogame editors and other actors offering useful applications in this area came to possess the complementary competencies enabling them to create serious games. Towards this end, the actors concerned have either acquired the competencies they need, created a partnership or merged with a partner or supplier, or adapted their current tools. Each of these strategies will have led to different outcomes, which partially explains the wide range of objects observed.

Although standard products do exist, serious games are usually customised projects specifically developed for each customer depending on their needs and corporate culture. The budget can be less than €50,000 for basic projects sold to small entities or anywhere between €100,000 and more than €1 million for sophisticated applications targeting larger groups. Some serious games in certain sectors are even much more expensive, one example being Pulse, a game developed by BreakAway that reproduces a complete hospital in 3D. Considered the most expensive series game ever, it supposedly cost more than €7 million to develop.

Serious games are applied in a vast number of sectors, including defense, aeronautics, pharmaceuticals, healthcare, banking and media. They are also used in all kinds of corporate functions, such as commercial, marketing, production, logistics, purchasing and finance (Michaud and Alvarez, 2008). It appears that the only thing limiting serious games' application is developers' imagination.

They can also be used outside of the corporate sphere. Examples include efforts to encourage elected officials and urban planners to devise sustainable practices (i.e. IBM's CityOne game); educate

children about humanitarian missions, epitomized by a product that United Nations called “Food Force” or raise public awareness of geo-political conflicts, exemplified by “Darfur is dying” (www.darfurisdying.com), launched by mtvU and Reebok Human Rights Foundation. All of these serious (and sometimes hyper-realistic) games have been developed with some very specific and ambitious educational and communications objectives in mind.

2.3. An oxymoron that managers find hard to accept

Throughout their education, children, teenagers or young students are taking part in a very versatile world that is subject to constant innovation and where they can use each developmental phase to construct their intelligence, discover modelling and develop creativity by means of more or less playful experiences. This is nothing new. Baudelaire already noted that, “Children use games to demonstrate their great capacity for abstraction and powerful imagination. They play without toys” (Baudelaire, 1868). More recently, experts confirm that “talking about science fiction in areas such as economics or enterprise seems incongruous but it is anything but that. Science fiction constitutes one of several keys for opening new doors to people’s imagination, providing a form of questioning that encourages lateral thinking or new perspectives towards the daily framework within which a company operates” (Tcheng et al, 2009).

As Bernanos wrote, “As children show us every day, you can be very serious about something you think is fun” (Bernanos, 1949). Yet since games are entertainment, managers often refuse to see them as anything serious or useful. In this view, games are vulgar and futile whereas management is noble and attends to major challenges. At the same time, as Heracles already explained 2,500 years ago, “People only reach their maturity when they rediscover the seriousness that was part of the games they played in their youth”. Similarly, Plato wrote that, “You can discover more in an hour of playing than in a year of conversation”. As for Jung, in 1936 he wrote that, “Creating something new is not achieved by intelligence but through the gaming instinct”.

Some of the intelligence possessed by today’s young managers is not welcome in companies where it is considered difficult to exploit. This is because intelligence of this sort may not mesh well with the institutional constraints accompanying current working methods. This is the type of intelligence that is developed, inter alia, through the use of video games mobilising new practices rooted in the rise of web 2.0 (and 3.0 and 4.0). In particular, it is characterised by (1) extensive knowledge of information and communications technologies (ICT), (2) the ability to find one’s way through virtualised environments, (3) a capacity for combining talents in a way that makes it possible to achieve, working collectively, objectives that are inaccessible to people operating alone, (4) digital communications between very divergent social cultural profiles, and (5) the art of managing several tasks in parallel while zapping from one to the other without losing in productivity.

At the same time, the most innovative multinational firms do use virtual work teams and information systems rooted in modern technologies. The role of technology and its impact on human cognition in a classroom environment have been studied from a pedagogical perspective (Angeli, 2008). The problem is that these intelligent new tools imply that users possess a different kind of intelligence, one that is complementary and not redundant. The interaction between the tool and the human seems to develop or to shape new abilities. Brains are capable of more qualitative analytical tasks whereas computers store, combine, calculate and suggest solutions. The impact of serious games on human resources practices can then be explored.

3. METHODOLOGY

Our methodology uses cases from the specific field of research that is the banking sector. Its mission is to observe and analyse emerging human resource management practices that incorporate serious games while deducing the productivity gains associated with this.

3.1. Research with an exploratory vocation

Our purpose is to characterise a phenomenon that is relatively new while increasing understanding of how it operates. As such, our goal is not only to come up with an exact image or representation of an emerging reality but to identify the properties of certain complex events. Based on the elements studied here, we will try to develop hypotheses that have an analytical vocation. Research at this level can be defined as hybrid exploration based on initial knowledge and seeking to "give meaning to empirical materials by undertaking frequent iterations between the empirical material that is gathered and theory" (Charreire and Durieux, 1999).

Regarding the study's fundamentally exploratory vocation, two limitations can be noted. From a descriptive perspective, the basic goal here is to describe things so as to understand them from inside out. As for the exploratory aspect, our aim is to determine under what conditions a human resource analytical matrix can be validly applied to the phenomenon of serious gaming as it exists in the banking industry. There is no attempt here to establish a causal framework but instead to enhance the emergence or characterisation of key variables that might subsequently be tested along more deductive lines. This identification of possible causalities and explanation of possible causal variables remains key (Yin, 1981).

3.2. Studying an emerging and complex phenomenon through the case method

"In general, cases comprise a leading strategy for questions beginning with 'how' or 'why'; when the researcher has very little control over events; and when the focus is on a contemporary phenomenon in a real life context" (Yin, 1993). The use of serious games is very recent phenomenon with such games constituting a particularly unstable, innovative and complex evolution in human resource management modes. The application of a case method therefore fits the traits of our particular object of study.

The main purpose behind exploring complex situations through immersion in several cases is to clarify the interactions between different actors. It also aims at enhancing our understanding of certain phenomena. This is because, "It is very doubtful that sociology can formulate so-called 'causal' laws given the unbridgeable discontinuity between cause and effect. Between an antecedent and its consequence exists a margin of uncertainty that is too intense to affirm a repetition of causes and especially to justify the assumption that these causes will produce the same effects in frameworks and circumstances that are fundamentally variable and fluctuating" (Gurvitch, 1962).

The contextualisation of a phenomenon and its positioning in social, economic and historical circumstances is what allows researchers and then analysts to comprehend the origins and evolution of an object of research, the processes associated with it and the situation itself (Hlady-Rispal, 2000). This method enables a detailed examination of contemporary phenomena - serious games in the present case – with a view towards distinguishing them from their context. It is in this sense that the use of different data sources can be justified. Although this method may enable a modicum of flexibility, throughout its design phase it also requires reassurances as to the internal and external validity of its construction and reliability. Ensuring that the data used is reliable can mean implementing several different methods (Wacheux, 1996).

A multitude of serious games-related initiatives exist and are both polymorphic and highly spontaneous. The desire to restrict the present study to the banking sector enables us to focus on specific applications and functionalities while preserving the diversity of the objects that we are observing. In the practices and relationships being implemented through serious games, there are a large number of parameters that influence actors' behaviours. Moreover the strategies and interactions between actors can be extremely diversified. Observing these mechanisms in context and achieving global vision of everyone's motivations implies greater understanding and better performance measurement while enabling more qualitative analysis of the human resource management methods and processes being impacted in this way.

"The number of cases depends on the research objectives. If the purpose is to explore new practices or discuss an original line of questioning, one or several cases suffice to satisfy the logic of discovery" (Wacheux, 1996). The choice of studying four cases is based on the need to have a sample that is both sufficiently small to enable in-depth qualitative analysis but also large enough for comparison purposes. Moreover, each case specifically corresponds to recruitment, training or the promotion of corporate values. It is the encounters and opportunities that arose over the course of the research that have conditioned the choice of cases. To be honest, whereas each corresponds to a particular human resource management activity, it is also the consequence of our research ambition as well as the result of a favourable set of circumstances.

3.3. The field of study: the banking sector

The first reason for choosing this field of study is because it allows access to some companies. Having worked for a serious games editor has made it easier to get interviews with certain parties. Note incidentally that most serious games played in the banking sector are accompanied by major communications, increasing the amount of secondary data available.

A diverse set of data has been collected. This has involved participant observation (since the co-author also designs financial cases used in serious games); a compilation of secondary documents; and semi-directive interviews. To supplement this observation, questions were asked of serious games editors, customers and users to enhance understanding of the human resource management modes they face when using such games.

To ensure the responses' relevancy, the case method is validated by a triangulation of collected information, thus confrontation of data, narratives and theories from different sources. Management has triangulated methods for many years (Campbell and Fiske, 1959). Combining several methodologies largely provides the assurance that any variance will derive from the phenomenon under study and not from the method being used. Triangulation is often recommended either to deal with phenomena that are in the process of emerging or else with complex situations (Eisenhardt, 1991, Yin, 1981). With serious games, both of these conditions apply.

4. CASES: USING SERIOUS GAMES IN THE BANKING SECTOR

Some banks have already been using serious games for five years as part of their communications, recruitment, training and corporate culture development strategies. Companies such as BNP Paribas and Banque Cantonale Vaudoise have even acquired or developed several such games. The banking sector, in general, is not reputed for being particularly play-oriented or fond of these kinds of new practices. Hence the surprising discovery that the serious gaming wave has already spread to a number of countries.

4.1. Ace Manager: a game for detecting and recruiting top talents

This online game is the product of cooperation between three stakeholders: a bank (BNP Paribas); a communications agency (TBWA); and the games editor, Paraschool, a subsidiary of Editis. Working in teams of three, participants play a bankers' role in an online universe that is 100% virtual. To accumulate points (aces), they have to conduct several missions comprised of financial cases relating to the main businesses of the bank in question.

To recruit the most motivated and talented players, the bank communicates with students from 90 countries. This gaming approach targets business/management students from the best schools and universities worldwide. BNP Paribas, for instance, is seeking to raise its profile in countries where few have heard of it. During the first season, 4,364 students (from 106 countries) took part. Last year, there were more than 8,133 players from 90 countries. The goal the third time around in 2011 was 10,000 students - with more than 13,000 having eventually enrolled in the process.

The game highlights core technical competencies in three basic bank businesses; retail banking (private parties and professionals); corporate and investment banking and wealth management. In 2011, the game tested players' competency in fields such as innovative project finance, wealth management, fundraising, partnership development, resource evaluation, tax advice, leasing, and investment fund management. On each occasion, it is the person's creativity and ability to adapt to situations that are highlighted, more than the simple application of methods.

For season three, the players took part in 18 financial cases over a one-month period. Each case involves points being awarded depending on the player's number of right answers and the scale of difficulty. At the end of the online session, the five leading teams were invited to the grand finale in Paris.

The game mainly consists of information searches and drafting exhaustive solutions in response to different challenges, all thanks to groupwork. Each case lasts two to four days and throughout the duration, new information is revealed via press articles, meetings with important individuals and e-mails. In terms of the gameplay, the emphasis is on multicultural teams operating on many different levels. A bonus point is awarded at the outset when players on a team come from different countries and different levels (bachelor and master).

4.2. BNP Paribas using StarBank to train employees for the bank of the future

Star Bank is a video game that offers training in different bank businesses. It plunges participants into a futuristic world of the 31st century and asks them to grasp the main banking principles of this time. The rules of the game are simply the rules of the bank. Players seek to implement the strategy that responds most effectively to the challenges they face. Players must satisfy customers, shareholders and colleagues by creating agencies, managing property investment projects and optimising people's estates. Tests can be very difficult and relatively technical in nature. Defeat is also a way of learning and encourages players to make further efforts to progress up the ladder.

In other words, BNP Paribas's Starbank game is a programme that immerses its users in a futuristic bank replete with a whole host of challenges. Its aim is to get them to pursue a strategy while respecting the rules of banking, ostensibly by "developing BNP's activities in an intergalactic station". Employees can log on remotely to run their avatars, conduct missions and advance through the different levels. What is key here is players' strategy, optimisation of resources and ability to find the best allies.

All employees can use Star Bank to build up their knowledge of BNP Paribas, its organisation and activities. People can play in three languages, working at home or in the workplace, regardless of their function or time of service. As such, this is a tool that facilitates the diffusion of the corporate culture, the integration of new employees and personal betterment thanks to greater understanding of how the bank functions. Learning situations are constructed in such a way as to approximate reality, even though they occur in fictitious universes that encourage players' immersion and curiosity. Players are induced not only to use their knowledge but also to adopt a behavior that helps to expand knowledge.

4.3. Cash Detectives or benchmarking the battle against counterfeiting

ICICI is India's second-largest bank with 35,000 employees and 2009 revenues of \$13 billion. Serving 30 million customers in around 20 countries, the bank is growing and recruiting many new counter staff members. One of the main concerns for its managers is training new employees to detect counterfeit bills, which are very frequent in India and other countries where the bank runs operations. ICICI has had big problems in this area - whereas some experienced employees are instinctively capable of identifying counterfeits, many new ones cannot.

ICICI's managers have decided to devise a training programme built around a serious game to raise staff awareness of the need to detect counterfeit bills at all bank counters while empowering employees by providing the necessary techniques. The company therefore signed a cooperation

agreement with TIS (Tata Interactive Systems) to use an innovative interactive knowledge transfer methodology called GamBLsTM (Game-Based Learning Objects). This application helps to capitalise upon experienced counter staff's knowledge of counterfeit detections and disseminate this to novice colleagues. Subsequent surveys have revealed that it sparks a level of employee involvement that is four times greater than a lecture would do.

The game calls upon employees' patriotism and plays on the suspense created due to each decision's consequences. Employees become aware of the socio-economic issues associated with counterfeiting and learn the real problems that this causes. In addition to this serious game's success in raising awareness and increasing motivation, by helping players to rise through different levels and overcome the challenges they face, it helps them to develop the know-how that they will need to detect counterfeit bills.

The TIS Company, which is part of the TATA group, is global leader in e-learning. Developing serious games is therefore a natural evolution in its profession as an interactive training programme editor. This is a particularly innovative company that has received plaudits for its products and been certified by several international networks of professionals in the sector.

4.4. Citizen Act, Société Générale's socio-ethical business game

In addition to recruitment and training, serious games are also used by banks to promote values and diffuse a corporate culture both internally and externally. One example is the role attributed to Citizen Act, a game that Société Générale developed in 2006 and which is already up to the fifth version. In addition to raising players' awareness of traditional banking practices, Citizen Act exposes them to social and environmental responsibility. This is a training game whose ambition is to change practices in the banking sector and suggest concrete implementations for CSR-related projects (www.citizenact.com).

Citizen Act is first and foremost an international competition that uses social networks (Facebook, Twitter, LinkedIn) to link up finance students who want to form teams and compete. However, it is also a coaching system run by several hundred employees of the bank as well as a very important event mobilising all of the company's teams, with everyone being asked to participate, communicate and contribute to the benchmarking process that is part of this exercise. The compilation of a knowledge database and the transition of the bank's corporate culture towards more modern and ethical practices are major developments that have sprung out of Citizen Act.

The game supports and drives the group's human resource policy in an attempt to manifest and demonstrate Société Générale's real commitment to sustainability. More than recruitment or training, what counts here is the game's implementation of communications actions and promotion of collective values.

5. SERIOUS GAMES' IMPACT ON HUMAN RESOURCE MANAGEMENT PRACTICES AND PERFORMANCE

To maximise the new tools' potentialities, a new form of intelligence will have to be implemented, one characterised by specific competencies such as extensive knowledge of ICT, an ability to find one's way around virtualised environments, a capacity for identifying and combining talents, digital cooperation between highly divergent socio-cultural profiles and the art of multitasking and zapping from one task to another without losing in productivity. Future managers from Generation Y – and soon Generation Z – can develop these competencies through video games or web 2.0 and 3.0 applications. Serious games are a natural extension of these processes.

5.1. Serious games as a recruitment tool that is particularly attractive and adapted to Generation Y

Serious games play an important role in the evolution of HRM practices and the improvement of their performance in terms of new employees' recruitment, training and integration. This is the goal of games such as Ace Manager or Citizen Act that compete to detect the most brilliant finance students worldwide with a view towards their ultimate recruitment. Including serious games in top universities' training programmes attests to an academic acknowledgment of their educational power.

Serious games have also proven their usefulness for recruitment purposes. Human resources managers at BNP Paribas have expressed their satisfaction and it also appears into their press communication on their websites. Having caused a real buzz online, Moonshield is publicising Thales's brand as a potential employer all across the world. As for L'Oréal and its Reveal game, the aim here is to uncover new talents by attracting students seeking an internship. These games enable an initial triage of resumes followed by a recruitment selection based on objective performance comparison criteria. "Recruitment interviews increasingly involve role-plays. L'Oréal, which is particularly concerned with the quality of its human resource marketing, relies on this strategy with business games that enable it to communicate about its business lines and talk about future possibilities. For instance, L'Oréal Brainstorm asks players to re-invent the group's brand" (Trotureau, 2008).

In a recruitment conference, serious games are primarily used to test players' ability to analyse situations, take the right decision in a limited period of time, improvise when the unexpected arises, optimise resources, coordinate competencies and propose new solutions while thinking out of the box. Potential recruits, even if they do not systematically make the right choice, must demonstrate that they are learning from their mistakes and have a strong ability to adapt. This matches the conceptual framework of Yusoff et. al. (2009).

Moreover, according to Cascio and Aguinis (2008), "to move forward and make more accurate employee-selection decisions, staffing research needs to attempt to predict in situ performance". Both the aim of the serious game and the technology used correspond to the radical transformation undergone by organizations. The outline of staffing 21st century organizations reflects Yusoff et al. framework for serious games.

5.2. Training by means of serious games: acquiring knowledge and competencies more effectively and quickly than ever before

The playful dimension of serious games-based training is a very effective method for transforming an activity that can often be very boring and turning it into something fun. This is much more motivating for training game players since they will be able to read things, watch cartoons and videos, interact with the virtual environment thanks to their avatars and even take online tests (Ulicsak and Wright, 2010). Using multimodality to teach knowledge and practices involves visual memory (i.e. Cash Detectives and its many different images), auditive memory (i.e. StarBank, featuring many conversations between avatars) logical memory (i.e. Ace Manager or Citizen Act) and motor memory in simulation games that involve, for instance, piloting or surgery.

Using repetition and permanent feedback motivates players to correct and perfect themselves. Players are particularly motivated when they can measure progress and analyse any errors they or their virtual partners make. Benchmarking young and old employees can also lead to a transfer of good practices, something that happens with Cash Detectives.

According to Yusoff et. al conceptual model (2009), serious games rely on intended learning outcomes and game attributes in order to produce a learning activity. In the studied cases, the games' attributes differ a lot but they all correspond to several attributes proposed by Gilbert and Gale (2008): incremental learning, linearity, attention span, scaffolding, transfer of learned skills, interaction, learner control, practice and drill, intermittent feedback, rewards, situated learning and accommodation to learners' styles.

5.3. Stimulating colleagues' integration and motivation thanks to serious games

Ostensibly, serious games are tools that encourage remote groupwork thanks to the many different digital tools that they offer: shared documents, blogs, video conferencing, etc. This makes it possible to integrate behavioural objectives more or less explicitly into the learning objectives that are associated with a particular business. Serious games expose users to ideas, behaviours, processes, changes and tools.

“In the future, one of the most complicated challenges that HRM faces will be managing talents individually but in light of people's different personalities, competencies and ambitions, while getting them to adhere to a collective project” (Added et al, 2007). The new information technologies have created an illusion of equality between managers who become part of a community and can therefore no longer be singularised by their age, color, beauty, gender, level of education or accent. People can create new identities for themselves, protected behind their computer screen from any prejudice, using their extensive knowledge of tools to prove themselves. The balance of power is no longer determined by the same criteria. Long years of study are much less empowering nowadays than mastering certain virtual universes and new qualification and evaluation codes.

5.4. Using serious games to encourage teamwork and collaboration

Serious games are characterised on several different levels by their collaborative work dimension. This is present from the very outset in the way that a game is designed along project lines by banks, communications agencies and editors. Collaboration is fundamental in players' teamwork and in the monitoring systems that are needed to enhance the game's credibility and improve the bank's image.

In serious games such as Ace Manager or Citizen Act, collaboration is both encouraged and necessary. It is one of the aims when the game is first designed and constitutes a corporate value that the bank wants to convey. In Ace Manager, it is through the game's very design that this objective can be achieved. Players must process 18 financial cases over a period of four weeks. The cases are run both sequentially and concomitantly. During the second week, players must work on four cases combining personal wealth management aspects with corporate investment banking problems, even as they deal with innovative capital equipment projects revolving around photovoltaic energy generators.

Over the seven day period, it is almost impossible for someone playing alone to process the multitude of bits of information on offer while displaying all of the requisite technical abilities, especially since the courses continue to run during the whole time. Collaboration is a necessity for players who must organise their work based on what their colleagues do. Stories about previous seasons attest to highly diversified organisations. Where some teams would meet on a daily basis to work together, others would rely on collaborative working tools such as blogs, wikis, Google Docs, Skype ou MSN.

Cooperating on the monitoring protocol is also crucial for a game's success, even if this is a dimension that is totally different from what the players experience. In a classroom, teachers are in a position to respond immediately to learners' questions and correct any mistakes detected during an exercise. Tracking more than 13,000 players remotely is much more complex, however. The chosen system is intended to respond as quickly and precisely as possible to the questions that teams ask, whether this happens while the cases are running or after the solution has been given. What is at stake here is the credibility of the game, hence of the bank itself.

To get the answers to their questions, students must check a Facebook page, being a user-friendly site with which they are all very familiar. It remains that the front office is the only body in direct contact with players. Its function is to orient and sort players' requests and diffuse any and all instructions. The monitoring team is committed to responding to players' queries within 24 hours. The number of queries usually rises as the game advances since the stakes are getting higher all the time.

Players get responses that have been devised and validated by teams. Not every question receives an answer to avoid any one team benefiting from special consideration or extra clues. Collaboration

between banks, case editors and game editors is based on a collaborative platform called Basecamp and requires frequent exchanges between back-office support teams. All in all, the game could not exist without collaboration between players and designers alike. Even more intriguing is another dimension that is usually not envisioned at the beginning – the Facebook discussion threads that player teams also use to help one another. Teams get together to discuss solutions and share explanations once the results have been given.

5.5. Tools that are very powerful can also be harmful

Despite widespread belief in serious games' usefulness, they also have a number of limitations. Human resource managers and trainers must try to identify areas where serious games are real tools for improving practices and optimising individual or collective performance, and not just about gadgets or ways of communicating about a company's supposed modernity. Games are not exclusive solutions but must be a part of a comprehensive training system, implementing transferable and transposable knowledge in virtual situations resembling daily life. "People often wrongly imagine that the game will be powerful enough to cause changes or create the kind of learning whose products are automatically useful to decision-making. This is rarely the case" (Mayer and Bekebrede, 2006).

Games are just one method among many others and should not be considered as anything other than one aspect of an overall approach to training as well as a medium that can be used to convey and transmit practices and knowledge (Klawe and Phillips, 1995; de Freitas and Oliver, 2006; Sisler and Brom, 2008; Ulicsak and Wright, 2010). Whether this involves training or the promotion of corporate values, the practices observed in the banks that we studied also showed that serious games always constitute one component of a sophisticated system that includes individual and/or team interviews, coaching, benchmarking, knowledge management and documentation. To obtain the best results, applicants or employees neither can nor must be happy to merely play. Tests show that players who went through an entire training programme and found the time to discuss their gaming experiences perform significantly better than those who engage in serious gaming alone (Ulicsak and Wright, 2010).

The knowledge and know-how acquired when using a serious game must be easily transferable and transposable to learners' daily practices. If the game is too different from their professional environment and if the players cannot connect virtual practices to real ones, the game's effectiveness is undermined. It is also important to measure whether a game's educational aims have been achieved. Given that serious games are open and offer players a great deal of freedom, this measurement is hard to do and is often neglected. In this case, the only thing that can be controlled is the players' involvement in the game and their performance (Chin et al, 2009).

6. CONCLUSION

With some serious games, it is possible to achieve business objectives by learning and benchmarking the different techniques associated with a specific function. In others, the objectives are more behavioural in nature since what is being encouraged is shared knowledge, collaboration, involvement and rigour. Where games are linked to a specific business and can therefore only be used in certain sectors, games of a more behavioural nature become quite easy to adopt and can be transposed to different types of companies.

Serious games have had a significant impact on human resource management practices in terms of recruitment, training, the integration of new employees, careers management or the promotion of corporate values and culture. Gaming information systems also permit new practices that improve HRM performance. These include benchmarking and the capitalisation of collective knowledge; the identification of exceptional talents that merit being integrated or promoted; greater employee awareness of topics that might normally be of little interest to them; and the simulation of extreme situations that can be difficult or impossible to create in the real world.

The serious games that we have studied in the banking sector displayed different human resource activity applications and encompassed a host of new practices. With external communications that mesh with the things that Generation Y wants, and/or by adapting the games to employees' working patterns, banks seem to have adopted serious games to the extent that these now appear as extra tools in their arsenals. Further research deepening our interviews and observations should enable a better characterisation of serious games' contribution to the field of human resource management.

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