

**UNIVERSITAT
JAUME·I**

**CRUNCH TIME AND THE VIDEO GAME
INDUSTRY
CASE - STUDY**

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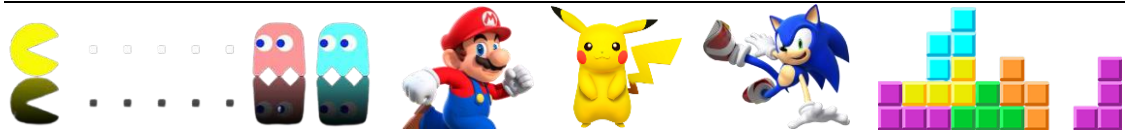
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1. INTRODUCTION

Despite the fact that today we hear more and more about this term *crunch time*, there is still a sector of the population that still does not understand what it really means, why it is talked about, what its characteristics are and why it is more related in the video game industry.

The video game industry is one of the fastest growing in the world, even ahead of other industries such as sports, music or cinema, according to the director of the Games Laboratory of the Center for Digital Culture, Héctor Guerrero. To maintain this growth, the work behind this industry is demanding since there are several factors that influence the development of its products, video games, and this way to meet the demands of its interest groups (customers, partners, shareholders, etc.) thus recurring to practices that damage the health, life and relationships of those who suffer them, as is the case of *crunch time*. According to a survey provided by the International Games Developers Association (IGDA) and carried out by the members of that organization, 58% of employees claimed to have been victims of "crunch" during the periods of 2019 and 2020.

On the other hand, technological advances also play an important role in the appearance of these practices due to the fact that in the creative industries, being technologically up-to-date is very important for the proper functioning of their creations and, through technology they must adapt to the needs of customers, what they demand and the times.

Unfortunately, the *crunch* is very normalized in many companies that operate in this sector, being aware of these practices in the Human Resources departments, which raises an important question: ¿Is it profitable for an employer to resort to these practices?

The death by suicide of a 24-year-old employee of the video game industry in Japan is one of many extreme cases caused by overwork, which led to unsustainable stress and mental health problems for the young woman.

Today we know how important the human factor is in a company because if employees are satisfied in their work environment, if they feel valued by the company, they perform better, offer quality work, contribute to more ideas and are involved in company projects.





The main objective of this case study is the analysis of certain unconventional practices such as crunch time in the video game industry, making use of a series of data at an economic, social, and organizational level. This final grade work will try to answer the following questions: ¿Is it possible to avoid crunch? ¿What are the effects of crunch time? ¿What role does the Human Resources department play in an organization and what recruitment and retention practices do they practice? ¿How does crunch affect creativity, and what is the relation between creativity and talent? We will also analyze the company Rebel Wolves, founded by former employees of CD Projekt Red, and we will see if they have founded a solution to the crunch they were subjected to in their former company.

For this, this document will be structured as follows. Firstly, we are going to situate ourselves in the theoretical framework and analyze the importance of Human Resources and their contribution to the success of a company; next, we will analyze the video game industry to understand all the work behind the creation of a video game, as well as its history and economic aspects. In this point, we will add the concept of creativity and the importance it has not only in this industry but in general. Therefore, we will define the concept of “Crunch time” in this context of work, as well as the most relevant evolutions that this concept has undergone. To conclude with the theoretical framework, we will relate the concept or practice of crunch time with the video game industry, the object of study of this final degree. After the theoretical framework, we will focus on the case study of CD Projekt Red to analyze what crunch situations were carried out and their organizational and economic effects. Finally, the conclusion will show the final result achieved based on the study.

All the data presented in this thesis are based on secondary sources of information, which are magazine articles, books, web pages, numerical data, etc.





2. THEORETICAL FRAMEWORK

In this point, we are going to focus on explaining and analysing two important concepts that will help us develop and understand the essay. On the one hand, we are going to explain the importance of a Human Resources department. Next, we will define the concept of Crunch Time, as well as its effect on workers and the company. On the other hand, we will go on to define the concept of videogame; likewise, we will also explain the history of the videogame industry, in order to establish the relation between both concepts, and also, in this point we will define the concept of creativity.

2.1 The importance of Human Resources in the success of the company

2.1.1 Strategic planning of Human Resources

Strategic planning of human resources is defined as the process used by a company to ensure that it has the appropriate number and type of people to provide a given level of goods or services (Gómez-mejía, B. Balkin, & L. Cardy, 2008).

The organization and structure of a company must respond to its mission and vision and its strategic planning in order to achieve the objectives set by it.

The mission of the Human Resources department is to ensure, within the legal, economic, and organizational framework of the administration, an effective, professional, and innovative Human Resources management policy and practices that guarantee the adequate number of competent people, thus enabling the efficiency of the company and the improvement of its employees.

The vision, on the other hand, must allow the company to incorporate, develop objectives and reward employees and professionals, making them feel committed to the needs of the services and motivated to improve their performance.

The objectives pursued by a Human Resources department are different for each company but, in turn, they share some common objectives such as:

- ✚ To retain and contain talent in the company
- ✚ To ensure and maintain a good working environment within the company
- ✚ To keep the company's training up-to-date
- ✚ To motivate the company's staff





- ✚ To contribute to the maximization of the company's profit
- ✚ To create a corporate culture
- ✚ To preserve the health of the people who work in the company
- ✚ To promote internal communication between the company and its employees

2.1.2 Approaches to the strategic management of Human Resources

There are three approaches to the strategic management of Human Resources consisting of determining what Human Resources practices a company must develop to positively influence its objectives. These approaches are: Universalist approach or "best practice" approach, contingent approach and configurational approach.

- ✚ **Universalist approach or "best practice" approach:** this approach defends the existence of a set of practices that produce good results regardless of the context of the organization (Delery & Doty, 1996; Pfeffer, 1998). These practices can be teamwork, the use of incentives, selective recruitment, employee participation, etc.,

The author Jeffrey Pfeffer (1998) proposes the following practices:

- ❖ Job security: employees will not be terminated for reasons beyond their control, such as variations in production. Focusing on maintaining full employment. For the author, job security provides benefits for both the company and the workers; On the one hand, the length of employment will create greater cooperation, tolerance and better entrepreneurship. On the other hand, job security "increases the investments made by the company and its employees in building company-specific knowledge and skills" (Ghoshal et al., 2001).
- ❖ Selective hiring techniques: Pfeffer says that organizations that are serious about making a profit through Human Resources will ensure that the right people are recruited.
- ❖ Self-managed teams and decentralization of decision-making as the basic principles of organization design: organizing people in self-managed teams, according to Pfeffer, is a critical tool of all high-performance management systems, this is due to the advantages of decentralizing decision-making in organizations. Employees enjoy a higher level of autonomy, achieving intrinsic rewards and greater job





satisfaction. The teams manage to eliminate hierarchical levels avoiding the high costs of personnel and administrative overload.

- ❖ Compensation policies: Pfeffer's compensation policy highlights two key themes: competitive pay and contingent compensation. The competitive salary will consist of paying workers according to the sector in which they are found. As for contingent compensation, it would be based on making employees participate in increases in profits.
- ❖ Excessive training: the education and training of employees will be an essential component of high-performance work systems since these systems will be based on the ability and initiative of employees to identify and solve problems.
- ❖ Reduction of the labour gap: a big part of the high-performance management systems tries to reduce the differences in status that separate individuals and groups and make some workers feel less valued.
- ❖ Share financial and performance information: this is the last of the human management practices that Pfeffer recommends. For him, the exchange of information is crucial for high performance work systems as it helps to understand the current situation within the organization.

On the other hand, the practices that stand out from Delery & Doty (1996) are:

- ❖ Internal career opportunity
- ❖ Training
- ❖ Evaluation based on results
- ❖ Participation in company's profits
- ❖ Expression of opinions in the organization
- ❖ Precise definition of jobs
- ❖ Job security

Other authors (Becker and Gerhart, 1996) emphasize that, apart from Pfeffer and Delery and Doty, there are several other authors who suggest that there is an identifiable set of best practices for managing employees and that it has universal, addictive and positive effects on the performance of the organization (see table 1).





Table 1. High performance work practices, according to authors

Human Resources practices	Kochan y Osterma n (1994)	MacDuffi e (1995)	Delaney y Huselid (1996)	Cutcher- Gershenfe ld (1991)	Arthur (1994)
Skills for the job/training		Yes			
Selection rigor			Yes		
Internal recruitment			Yes		
Job security		Yes			
Variable retribution		Yes	Yes		Yes
Initial training		Yes			Yes
Emphasis on training		Yes	Yes		
Job rotation	Yes	Yes			
Promotion criteria			Yes		
Teamwork	Yes	Yes		Yes	Yes
Participation/quality circles	Yes	Yes	Yes	Yes	Yes
Total, quality management	Yes	Yes			
Status barriers		Yes			
Conflict resolution				Yes	Yes
Formal complaint procedures			Yes		
Percentage of qualified personnel					Yes
Social events					Yes
Span of control					Yes





Information on production targets	Yes
-----------------------------------	-----

Workplace design Yes

Source: Own elaboration based on data extracted from Becker and Gerhart (1996)

According to this approach, the task of the organization's directors will be based on ensuring the correct implementation of such practices in their organizations.

✚ **Contingent approach:** related to the external adjustment of the organization.

This approach emphasizes the interaction between organizational variables against the linear relationships proposed by the universalists. For its authors, there are different types of practices that will depend on the context or the idiosyncrasy of the organization. This approach, at the same time, can be of two types: on the one hand, the focus can be internal-horizontal, that is, the only condition that is required is coherence between Human Resources practices. On the other hand, the external-vertical approach, in this area Human Resources practices must be consistent with the context in which they are applied, for example, the business culture; technology, environment, etc.

✚ **Configurational approach:** related to the internal adjustment of the organization. This approach is the most appropriate for the strategic management of Human Resources since it refers to the set of activities and planned uses of Human Resources that try to facilitate the achievement of the strategic objectives of the organization, that is, the economic results and for that to be effective, the organization must develop a Human Resources system that achieves a horizontal adjustment between the different Human Resources practices, and a vertical adjustment, with the organizational and environmental conditions (Wright & McMahan, 1992).





2.1.3 Evolution of the value of workers

Nowadays, the importance that companies give to their employees is high, and the fact is that the collective talent¹ of these employees represents a competitive advantage since they provide knowledge, skills, and abilities and contribute to the decision-making and actions of the company. Many of the practices carried out by companies and that are intended to attract and retain that talent are:

- Favourable work environment. It will influence the behaviour and performance of the worker.
- Recognition of talent and effort
- Training and development of the workforce. This will ensure that employees can acquire new knowledge and skills and promote within the company.
- Make the employee participate in the decision-making carried out by the company, that is, that the employee feels valued and part of the team.
- Time flexibility
- Telecommuting
- Offer stock purchase programs
- Investment and savings plan
- Discounts on company products
- Possibility of prolonging maternity or paternity leave

As Chiavenato (2009) indicates, the relationship between people and organizations is win-win, in which employees are considered partners or collaborators instead of providers who provide services in exchange of financial remuneration. In this model, the management of human talent raises the possibility of replacing the workforce approach with the development of emotional intelligence as well as the talent of employees; in addition, great importance is given to ethics and responsibility.

Other authors such as Barney & Wright (1998), affirm that having high-value human capital improves the efficiency of the company, lowering costs, increasing productivity and also improving the quality of the services provided.

¹ According to the Royal Spanish Academy (RAE), talent can be: “1. m. Aptitude (ability to perform something). 2. m. Intelligent or suitable person for a certain occupation.”





As a way of conclusion and as Chiavenato (2009, p.6) states:

Instead of investing directly in products and services, organizations now invest in the people who know them well and who know how to create, develop, produce and improve them. Instead of simply investing in customers, they invest in the people who care and serve them, and who know how to please and delight them. People become the basic element of the company's success.

2.2 Videogame industry

2.2.1 Concept of videogame

There are many definitions that have been assigned to the word video games. Many of the authors have chosen to separate the word and study it separately, giving various definitions for the word game. As Caillois (1958, p.20) states:

The game consists of the need to find, to immediately invent an answer that is free within the limits of the rules. That freedom of the player, that margin granted to his action is essential to the game and explains in part the pleasure it arouses. It is also the reason for such surprising and significant uses of the word "game".

Other authors such as Paul Valéry (1942, p.21), defines the game as that where "boredom can untie what enthusiasm has tied".

If we continue investigating, we find other authors such as Johan Huizinga (1949, p.13) who defines the game as:

It is an activity connected with no material interest, and no profit can be gained by it. It proceeds within its own proper boundaries of time and space according to fixed rules and in an orderly manner. It promotes the formation of social groupings which tend to surround themselves with secrecy and to stress their difference from the common world by disguise or other means.

A more up-to-date definition of the word game is the one offered by Zimmerman (2004, p.160) "a game is a voluntary interactive activity, in which one or more players follow rules that constrain their behavior, enacting an artificial conflict that ends in a quantifiable outcome".





From the last definition we can obtain a global definition of what a videogame consists of, which we define as a fictional or virtual reality game in which one or multiple players participate and which is played using an electronic device.

It is very important to add, in this point, the definition of creativity since it plays an important role in the videogame development. The concept of creativity can be studied from different perspectives or approaches. At the same time, several authors offer different definitions for this word. Creativity has always been considered as the ability of the human being, something linked to his nature. The first definition of creativity came from the hand of Weithermer (1945), describing creativity as “Productive thinking consists in observing and considering structural features and requirements. It is the vision of structural truth, not fragmented”. Table 2 shows some of the definitions offered by different authors:

Table 2. Definitions of creativity by authors

Definition	Author
“Creativity, in a narrow sense, refers to the skills that are characteristic of creative individuals, such as fluency, flexibility, originality, and divergent thinking.”	Guilford (1952)
“It is a process of forming ideas or hypotheses, verifying them, and communicating the results, assuming that the product created is something new.”	Thurstone (1952)
“Ability to represent, anticipate and produce ideas. Conversion of known elements into something new, thanks to a powerful imagination”.	Obsbon (1953)
“Creativity is not a quality that artists and other individuals are particularly endowed with, but an attitude that each person can possess.”	Fromm (1959)





<p>“Ability to find relationships between previously unrelated ideas, and that manifest themselves in the form of new schemes, experiences or new products”.</p>	<p>Parnes (1962)</p>
<p>"Creativity is the ability to relate and connect ideas, the substrate for the creative use of the mind in any discipline."</p>	<p>Stein (1964)</p>
<p>"Creativity is the original behavior that produces models or beings accepted by the community to resolve certain situations."</p>	<p>Fernández (1968)</p>
<p>“Ability and attitude to generate new ideas and communicate them”.</p>	<p>De la Torre (1991)</p>
<p>"Creativity is a complex mental process, which involves: attitudes, experiences, combinations, originality and play, to achieve a production or contribution different from the one that already existed"</p>	<p>Esquivias (1997)</p>
<p>“Creativity is the ability to produce new and valuable things.”</p>	<p>Rodríguez (1998)</p>

Source: own elaboration

Regarding the approaches, previously mentioned, that creativity can take, these are:

- ✚ **Creative person.** This approach can be seen reflected in the definition presented by the author Gilford (1952).
- ✚ **Creative process.** As indicated by Stein (1964) in his definition of creativity.
- ✚ **Creative product.** We can see this approach reflected in the definition of creativity presented by the author Rodríguez (1998).
- ✚ **Creative context.** Referring to the circumstances surrounding the creative person.





2.2.1.1 Videogame creation process

The process of creating a video game comprises 7 phases, which are the conception phase, the design phase, the planning phase, the production phase, the testing phase, the distribution and marketing phase, and the maintenance phase.

▲ Conception phase

This phase consists of clarifying the main bases of the video game. It consists of getting the idea of the video game to come to the surface, this phase will be the base from which the video game will grow. The genre of the video game must be clarified, whether it will be in 2D or 3D, how many characters there will be and which ones they will be, the place and time in which all the events shown in the video game will take place, the sound that will be used, the platform in which the video game will be developed, the necessary budget to be able to develop the idea, the time that will be dedicated to the creation of the game and its purchase price. All these aspects must be clearly defined.

● Design phase

This phase includes all the visual aspects of the game. From sketches and scripts, the game designers create the characters to display and move as defined in the first phase; in addition, they develop the story, the rules of the game, etc., they shape the original idea. In this same phase the audio designers also act to create authentic and real sounds when the character jumps, runs, stands or speaks, they must transmit the appropriate emotion in each of the actions and for this the voices and the tone of the characters must be properly cared for. Therefore, the programming is designed, a necessary aspect to describe how the video game is going to be implemented, the language to be used, or the methodologies to be followed.

⊗ Planning phase

The main objective is to ensure that the objectives set by the company are met. Delivery deadlines are set for the different tasks to develop the video game; these tasks are divided among the company's staff or departments and, often, follow-ups are carried out to verify that the video game is being developed correctly and, if not, to correct errors.





● Production phase

Once all the phases prior to this are clear, we proceed to the production phase, the creation of the game or, at least, to the creation of an initial version or demo that will be improved over time.

● Testing phase

At the end of the process of creating or developing a video game, it is subjected to a series of tests in order to correct errors or bugs that are present and improving it before its launch.

In this phase, two types of tests are carried out, on the one hand, the alpha tests and, on the other hand, the beta tests. The alpha tests will focus on correcting errors and internal problems of the game while the beta tests will consist of making the game available to a limited number of users in order to get feedback from them and thus improve the player or user experience.

● Distribution and marketing phase

Regarding the distribution phase, once the video game has successfully passed the pre-launch tests or the detected errors have been corrected, copies of the video game are created to put them up for sale in physical or digital stores.

The marketing phase can occur at any stage of production, be it at the beginning, at the end of the game's development or even after its release. Marketing campaigns will be essential and will play a very important role in the sales of the game due to the fact that they will increase its visibility, but this will depend on the budget or resources that are dedicated to this phase.

In both cases, both in distribution and in marketing aspects, the company can make use of external companies specialized in these aspects.

● Maintenance phase

Intended to solve bugs that appear in the video game or simply improve it. To achieve this, updates or patches are released from time to time.





Table 3. Synthesis video game creation process

Phase	Characteristic
Conception	Main bases of the video game
Design	Visual and audio aspects
Planning	Meet the objectives set
Production	Creating a demo version of the game
Testing	Fix bugs before release
Distribution	Creation of copies of the video game for sale
Marketing	Campaigns to increase the visibility and sales of the video game
Maintenance	Solve bugs

Source: own elaboration

2.2.2 History of the videogame industry

The history of the video game is a mere fact of the scope of human creativity² mixed with the growth of technology. To know how and where the videogame was born, we must place ourselves in the year 1958. William Higinbotham, an American physicist born in 1910 who, in his desire to compensate the damage caused by his participation in the manufacture of the first nuclear bomb and its devastating effects on Hiroshima and Nagasaki during World War II, spent the next several years raising awareness on nuclear proliferation and its devastating effects.

² According to the Royal Spanish Academy (RAE), creativity can be: “1. f. Power to create. 2. f. Building capability.”





Image 1. William Higinbotham. The videogame creator



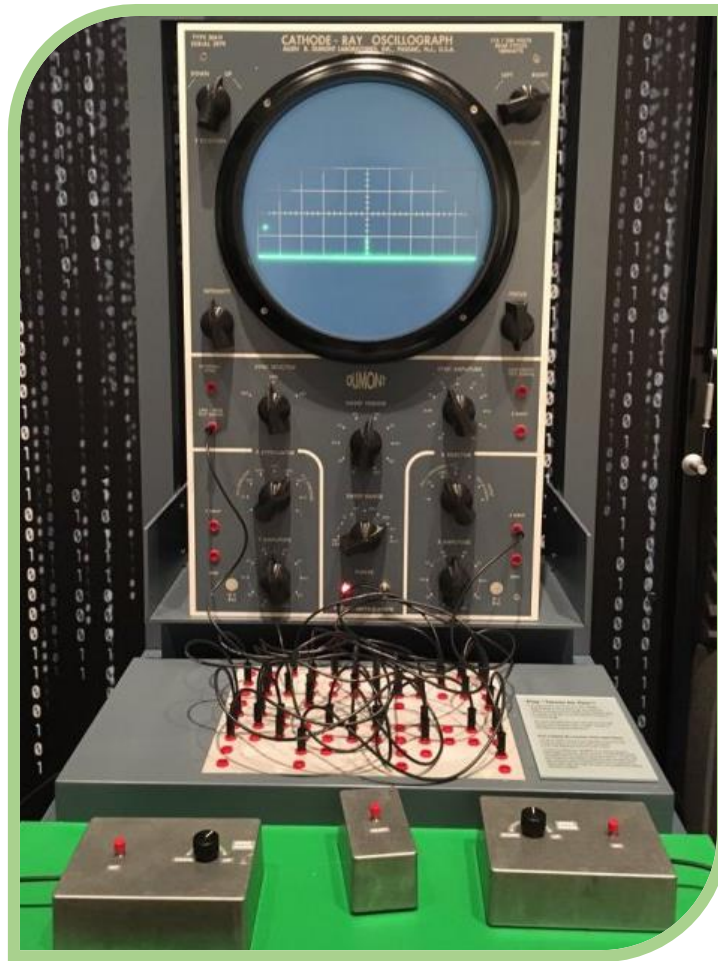
Source: <https://www.researchgate.net/>

William Higinbotham, intended that the visits that the Brookhaven National Laboratory received in its open days, also place in which he was the director, were more pleasant and entertaining, and with the help of the engineer Robert Dvorak, a worker in the same laboratory, they created the first video game which they called Tennis for Two; it had an oscilloscope and two aluminium controllers, the players had to try to hit the ball over the net that appeared on the oscilloscope by pressing a button on the controller; this net simulated a tennis court viewed from a side angle. In addition, the controller had other buttons that allowed the player to adjust the angle of the shot.





Image 2. Recreation of the videogame Tennis for Two



Source: <https://www.gamedeveloper.com/design/conserving-tennis-for-two>

After the exposure to the public and success of this first presentation, especially among the younger public, during the open days of the following year, 1959, the game returned, thus making its second and what would be its last appearance. During the following years, this innovative videogame was forgotten; it was dismantled and its pieces were used for other projects. William Higinbotham never patented his invention, thus losing his patent rights.

In 1971, the North-American Ralph Baer developed the first video game console in history, known as Magnavox Odyssey in which, unlike current consoles, players had to write down the score they obtained manually since the game console did not use memories. The success of this console was huge, raising more than 10 million dollars





and selling 100,000 units. With this, a new industry focused on the entertainment of people arose. In that same year, the engineer and video game creator Nolan Bushnell created Pong, an arcade machine with an improved version of the tennis game for two that contained the Magnavox Odyssey video game console; Bushnell changed the history of video games by challenging the limits of technology. Bushnell and his partner Ted Dabney started their own company called Atari, which had more than 10,000 machines throughout the country, this emerged as a solution to the difficulty they had in raising risk capital, that is, investment; the company became one of the companies with the greatest wealth in the United States and in 1976 Bushnell decided to sell it to Warner Communications for 26 million dollars, a budget that was used to create another super console, the Atari UBSS. In 1988, the patent right for the game was approved; Bushnell officially established himself as the first creator of a video game.

Image 3. Nolan Bushnell and videogame Pong

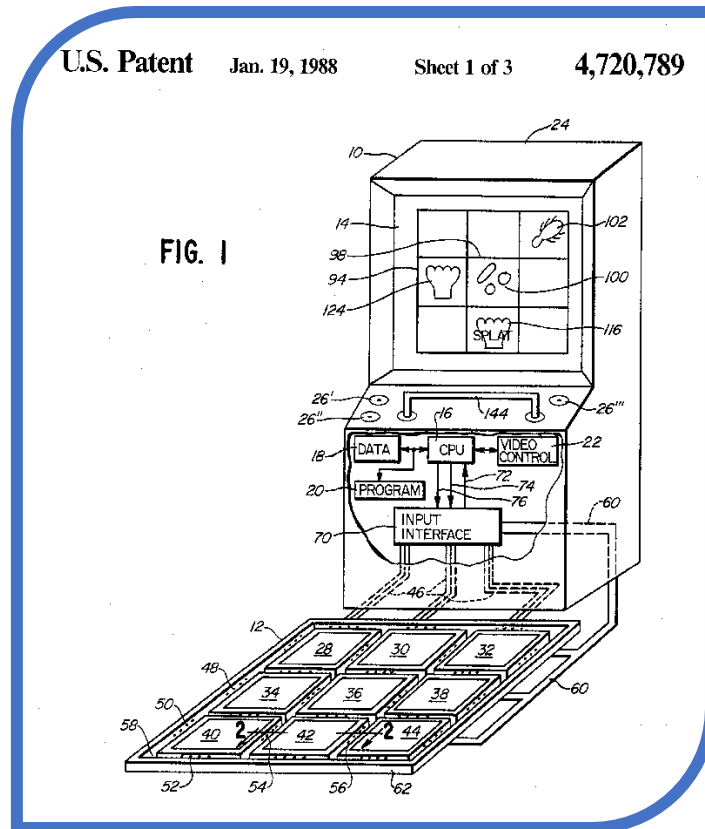


Source: <https://www.playerone.vg/2020/01/09/atari-nolan-bushnell-historia-juego/>





Image 4. Pong's patent



Source: Google's patents website, <https://patents.google.com/>

The 80's were considered "the Arcade era", with hits like Pacman, the famous coconut-eating game, King Kong, Donkey Kong or Super Mario Bros.

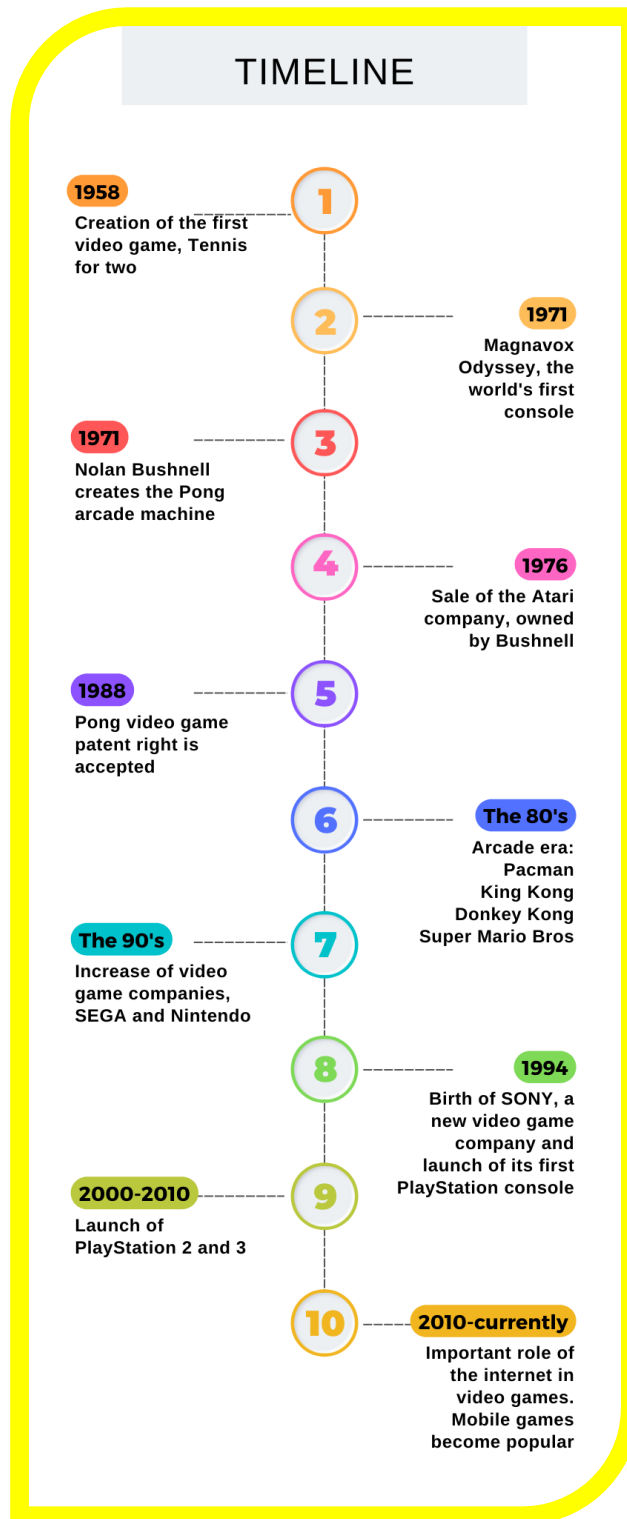
In the 90's, the rivalry and the increase of video game companies can be observed, such is the case of SEGA and Nintendo. Nintendo was positioned as the leading video game company in world markets but in 1994 another new company was born, SONY, and with the launch of its console, the PlayStation, SONY became the new lead of the video game industry taking Nintendo's first place.

Between 2000 and 2010, SONY kept releasing new versions of their PlayStation console, releasing a total of 2; the PlayStation 2 and the PlayStation 3, both being huge successes. From 2010 to the present, the internet was already linked to video games, in addition, mobile games became popular.





Image 5. Video game history timeline



Source: own elaboration

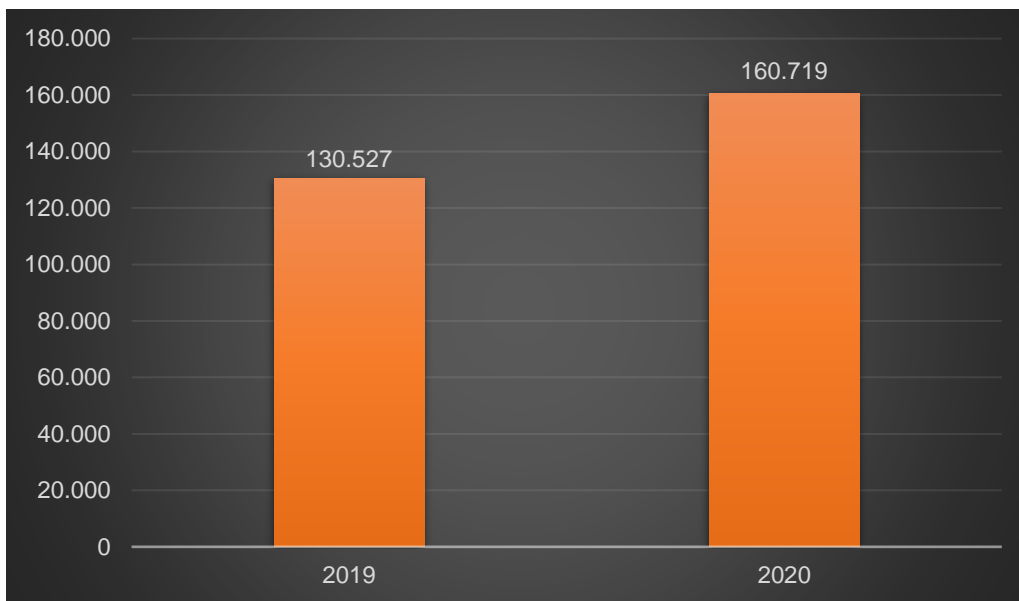




2.2.2.1 Economic aspects of the videogame industry

We will begin this point by focusing globally on the revenues obtained by this market. In the last two years, the purchase of video games increased considerably compared to the year before the start of the pandemic. In 2019, global revenues stood at 144,4 billion dollars, that is, 130.527 million euros; In 2020, the year of the pandemic, this revenue stood at 177,8 billion dollars, which is equivalent to 160.719 million euros, this shows an increasing of 23% compared to 2019.

Graphic 1. Revenues in the videogame market 2019-2020



Source: own elaboration with dates obtained from Newzoo

In a report provided by Newzoo, the world's leading provider of game and esports analysis, and in relation to the year 2021, we see how the videogame market invoiced 175.800 million dollars in that year (approximately 158.911 million euros), 1,12% less than the previous year. The Asia Pacific market led the video game industry, with a presence of 50% of the total revenue; followed by Asia Pacific is North America, with a 24% share of the total profit, followed by Europe with 18% of the total profit and, finally, Latin America, the Middle East and Africa, with a 4% in the total revenue of the videogames industry as we can see in image 6.

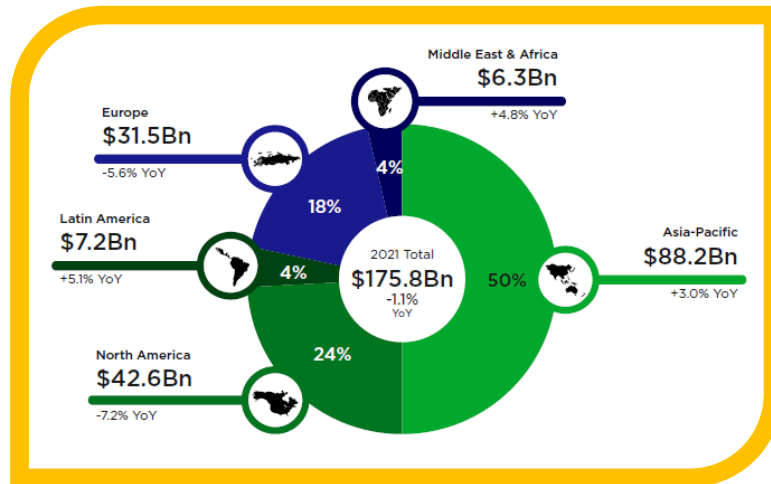
In the image we can also appreciate the variation suffered by the videogame market in relation to the previous year in the different regions previously mentioned. Asia Pacific





increased its revenue by 3% compared to the previous year, Middle East and Africa achieved a profit of 4,8% more than the previous year; Latin America also experienced a positive variation of 5,1% in profits compared to the year 2020. Only North America and Europe have suffered a decrease in revenue compared to the previous year, 7,2% and 5,6% respectively.

Image 6. Percentage of the global game market



Source: videogame market report from 2021, <https://newzoo.com/>

The ten best companies of 2020, obtained sales of 166.300 million dollars, translated into euros, these would correspond to 147.620 million euros as shown in the following table.





Table 4. Ranking of companies with highest revenue in 2020

Position	Company	Country	2020 revenue (millions of dollars)
1	Tencent	China	27.441
2	Sony	Japón	17.498
3	Apple	Estados Unidos	13.020
4	Microsoft	Estados Unidos	11.695
5	Google	Estados Unidos	9.142
6	NetEase	China	7.839
7	Nintendo	Japón	7.449
8	Activision Blizzard	Estados Unidos	7.399
9	Electronic Arts	Estados Unidos	5.670
10	Take-Two interactive	Estados Unidos	3.294

Source: own elaboration with dates obtained from Newzoo

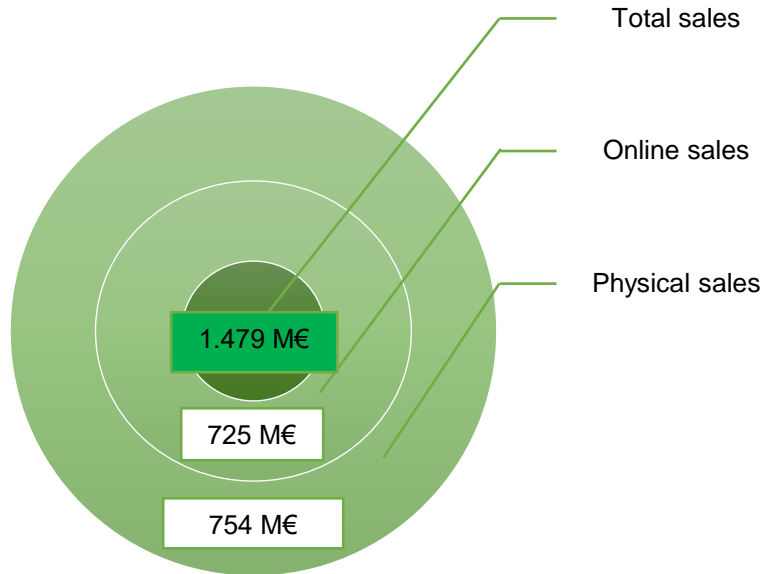
In order to monitor the videogame industry in Spain, we are going to rely on the report corresponding to the 2020 yearbook prepared by the Spanish Video Game Association, AEVI. In Spain, a total of 1.747 million euros was invoiced in 2020, 18% more than in 2019; Of those 1.747 million euros, 790 million euros were as a result of physical sales, compared to 957 million euros from online sales. The high purchase of video games through online platforms was also due to the pandemic and the state of confinement that the population was experiencing. It is increasingly common to see a young player profile, aged between 6 and 24 years.

As we mentioned earlier, the growth in video game turnover in Spain in 2020 was 18% more than in 2019. In 2019, revenue from the videogame market stood at 1.479 million euros. Of those 1.479 million, 754 million euros corresponded to physical profit, while 725 million euros corresponded to online revenue.



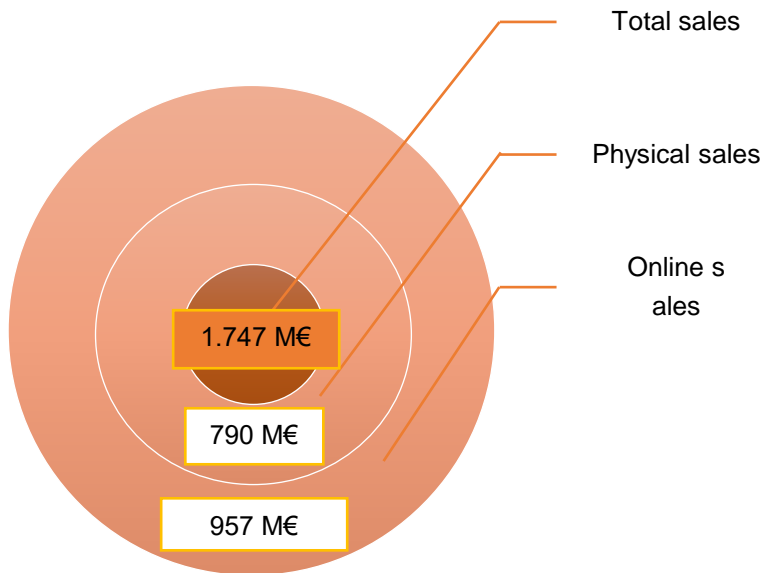


Image 7. Ramification of total sales in 2019



Source: own elaboration with dates from AEVI

Image 8. Ramification of total sales in 2020



Source: own elaboration with dates from AEVI





2.3 Concept of Crunch Time

The concept of Crunch Time has been closely linked to the world of videogames from the beginning. It is born as an action in which the person is demanded too much work, doing extra hours of unpaid work to finish a task or a project in a certain time limit, which is established by the company and, in which, as a result of this, working hours even exceed 80 hours in many cases. So, crunch can be defined as the period prior to the delivery of a project.

In this way, workers alter their routines, not only workwise but personal. A few people of these workers carry out these practices with the aim of achieving a status within the company, as a way of showing the company that they are very committed but the effects that this practice has on them is the same as it has on those who have no choice but to agree to work excessive hours for days or months.

Regarding the etymology of the word 'crunch', it began to be used in the year 1600, defined as the noise that a person makes with their teeth, but this definition began to undergo certain modifications, new definitions or uses. It was in the 20th century, more specifically in 1920, when Winston Churchill, former Prime Minister of the United Kingdom, used the word crunch to refer to the consequences left by the Spanish Civil War, in an interview for the British newspaper Daily Telegraph, alleging: "Whether Spain will be allowed to find its way back to sanity and health, depends upon the general adjustment or outcome of the European crunch"; in this context, the crunch was defined as a critical moment.

Decades later, specifically in 1966, the use of the word began to expand to other fields or contexts, followed by the influence that Churchill had on society. The use of crunch was no longer only used in contexts related to geopolitics but also in economic aspects. This economic context is based on the restrictions carried out by former United States President Lyndon Baines Johnson and that affected the country's federal reserve, restrictions originating in response to the Vietnam War and that were referred to as "Credit Crunch" by journalists as we can see in image 9, corresponding to a headline dated February 7, 1968 published by the international news agency United Press International and written by the journalist Merriman Smith Washington. The crunch was





implicitly described as a moment of panic and haste that was affecting the Lyndon Baines Johnson administration.

Image 9. United Press International Headline



Source: <https://www.quora.com/>

2.3.1 Effects on workers

There are many effects derived from long and intensive working hours on employees, the majority of them being negative. Many companies associate intensive shifts with higher performance or greater economic results for the company. But the important effects that these practices leave on workers are differentiated into two main categories:





Table 5. Categories of effects on workers

MENTAL ILLNESSES	OTHER ILLNESSES
DEPRESSION	INSOMNIA
ANXIETY	CARDIOVASCULAR DISEASES
ADDICTIONS	CEREBROVASCULAR DISEASES

Source: own elaboration

In the vast majority of cases, these excessive working hours lead to mental illnesses such as depression or anxiety. Many workers confess that the work environment, the high demand and the high degree or level of work causes depression, fatigue, a decrease in productivity, mood swings, insomnia and in some cases, these situations have led to suicide. An example of an extreme case is Matsuri Takahashi, a 24-year-old Japanese woman who ended her life due to the stress caused by the long working hours she carried out, according to an article published by The Guardian newspaper in 2017; the young woman worked more than 100 hours in the months before her death.

The World Health Organization (WHO) together with the International Labor Organization (ILO) revealed in a study published in 2021, and in which 194 countries participated, the effects that extensive working hours have on the worker. In it, it connects the consequences of being exposed to long hours of work, consequences that often lead to the person developing certain physiological or behavioural responses that, too often, are the cause of diseases derived from these work practices. Some of the physiological responses exposed by the WHO and the ILO are, and we expose literally, "autonomy in the activity of the nervous system, activity of the immune system, high blood pressure," among others, on the other hand, and in regarding to behavioural responses, these would be "smoking, alcohol use, physical inactivity, unhealthy diet, inability to sleep,





etc.,”. They estimate that ischemic heart disease³ and cerebrovascular accidents⁴ are the main cause of death derived from long working hours, and have seen an increased between 2000 and 2016.

As it can be seen in both Table 6 and Graphic 2, cerebrovascular diseases top the list, both in men and women, being higher in men, as the main cause of death due to overwork. We see how in 2016, the number of deaths was 276,098 in men (23,575 more than in 2010), and 122,343 in women (8,180 more than it was in 2010).

Table 6. Diseases and number of deaths

ILLNESS	MALES			FEMALES		
	Deaths			Deaths		
	2000	2010	2016	2000	2010	2016
Ischemic heart disease	186,791	229,520	262,754	58,192	74,825	83,999
Cerebrovascular accidents	229,596	252,523	276,098	105,259	114,163	122,343

Source: own elaboration with data obtained from WHO

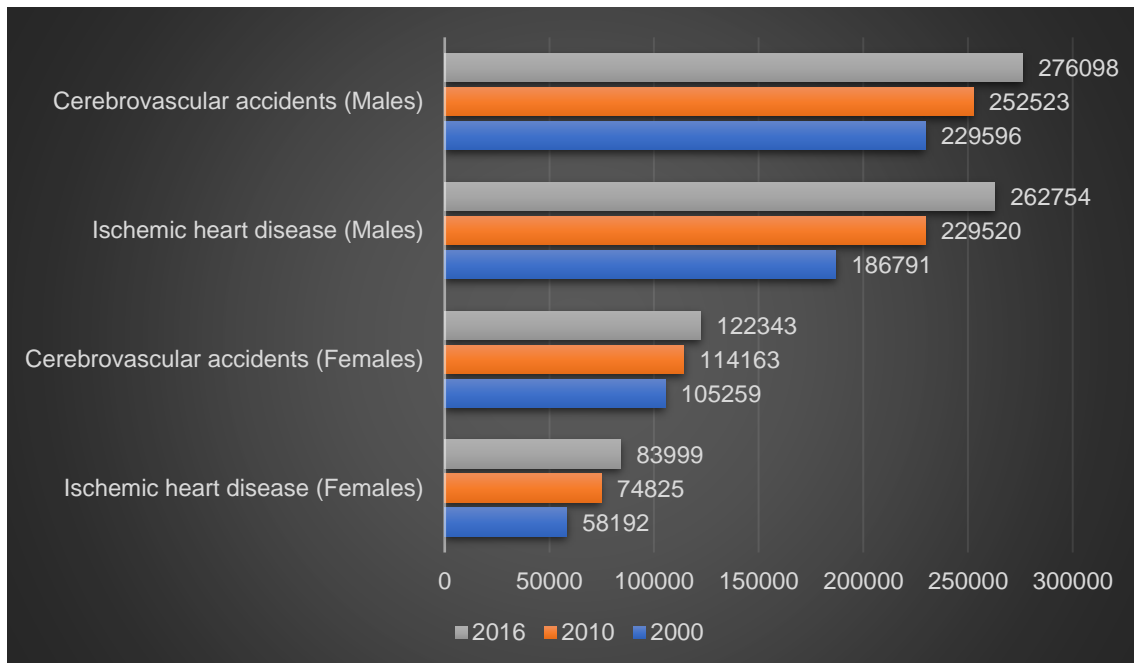
³ According to the Heart Foundation, the definition of ischemic heart disease is a "disease caused by the obstruction of the coronary arteries, responsible for providing blood and oxygen to the heart".

⁴ Cerebrovascular diseases are defined as "diseases due to alterations in cerebral irrigation that affect the veins or arteries of the brain" according to the publication made by the digital newspaper Redacción Médica. An example of cerebrovascular disease would be a stroke.





Graphic 2. Evolution of deaths throughout the years



Source: own elaboration

2.3.2 Effects on the company

Many people will think that the effects of the practice of Crunch Time always play in favour of the companies that carry them out, but the reality is that it has more negative effects than positive ones. To begin with, these practices are carried out in companies that need to be technologically up-to-date at all times and that operate in turbulent environments, that is, a complex, dynamic environment with a high level of uncertainty.

From the positive effects, we can highlight the net revenue. Being able to invoice large amounts of products is always something positive for companies as it increases their capital and assets. In addition, with these practices they save much more in costs since, as we have stated at the beginning of the point, workers are not usually compensated for overtime work. But the rewards are far more than just economical, there are also rewards that have to do with recognition, getting the company to establish itself as the best or one of the best companies in the field of activity in which they operate, at the expense of the physical and mental health of their workers.





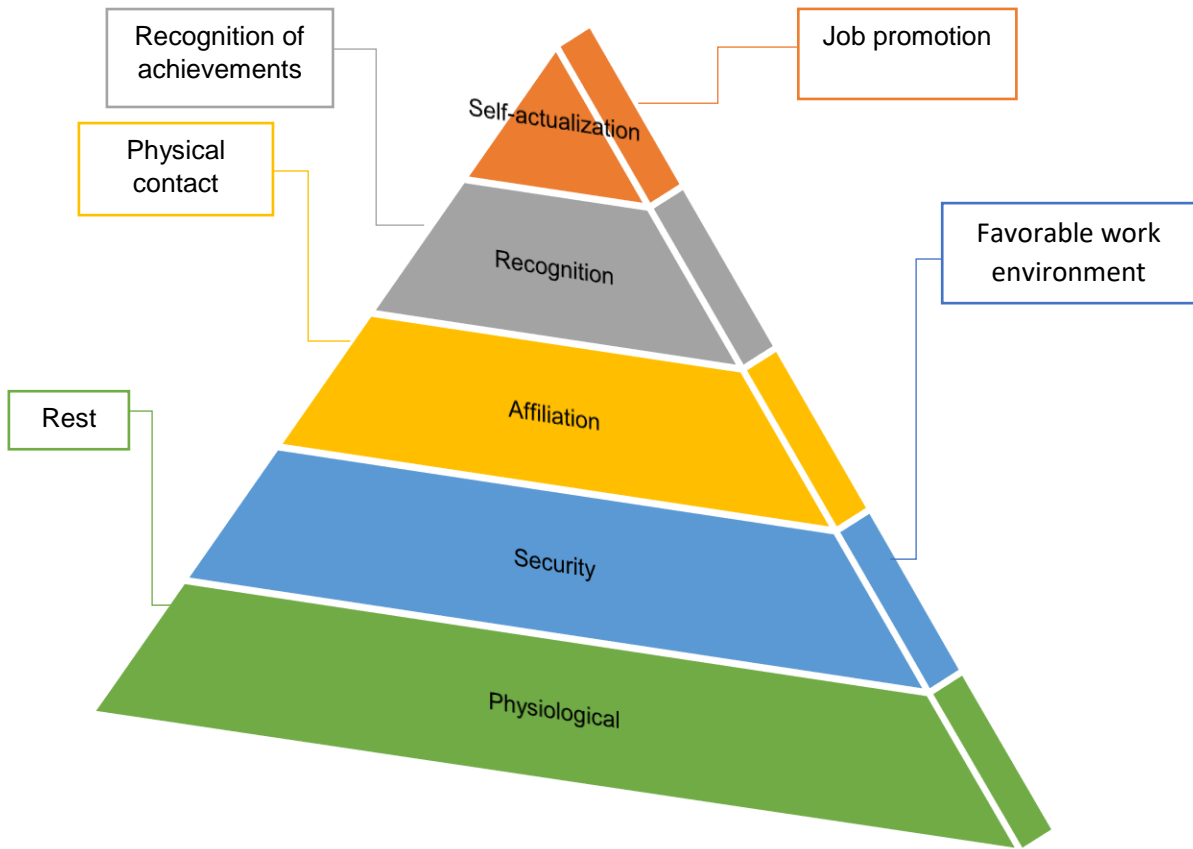
When it comes to the negative effects, these are many. Having workers whose productivity is diminished is a big problem for companies. The problems that appear due to the decrease in productivity are as a result of tiredness, fatigue, an unfavourable work environment, lack of motivation and lack of organization, among others; causing workers to incur into many mistakes in the production stage and, therefore, more resources and more time have to be invested in fixing these problems.

In other cases, many workers end up resigning their positions and leaving the company. This action is related to the unsatisfied needs of the worker; the psychologist Abraham Maslow (1943) brings us closer to the importance of having certain needs covered, which will influence the behaviour of the individual and their interests, which will be destined to seek another type of employment or another company that allows them to satisfy their basic needs. Maslow, through a pyramid, shows us the basic needs a person will take as a reference when making decisions. These needs are physiological (for instance, to have decent amount of rest or a decent salary), the need for security (for example, to feel safe or have a favourable work environment), the need for affiliation (this would be, physical contact), the need for recognition (for instance, recognition of achievements) and, finally, at the top of the pyramid, the need for self-actualization (such as promotion). Therefore, a worker who leaves the company in which he works due to emotional and physical fatigue, will consider that all the needs present in this pyramid have or are being violated.





Image 10. Maslow's pyramid of needs



Source: own elaboration

The loss of workers results in, on the other hand, an increase in costs due to the company's need to invest in hiring new personnel. In addition to this, the image of the company will also be damaged.

2.4 Relation between Crunch Time and videogame industry

Crunch Time practices are more frequent in the videogame industry. As we have mentioned in the theoretical framework, Crunch Time consists of unpaid intensive overtime work to get a project done within a certain period of time.

Crunch culture is very normalized in these industries for a simple matter of lack of time. During the creation of a game, there are three parties involved: the development studios, publishers and console manufacturers. These two, publishers and console





manufacturers, are in charge of setting the budgets and deadlines for the project making the development team having to work within those parameters.

Moreover, the programming and software of videogames sometimes need to be updated. To all of this also arise faults throughout the life of the product that must be fixed or, in case that a videogame is successful, publishers usually release more versions of the same game and normally the period between a videogame and its new version is usually a few months or a year, for instance, FIFA or Formula 1 games, new versions are released every year, with new features and/or improvements.

There are productive features that lead to Crunch time and that are sometimes necessary to be able to launch an updated video game. These characteristics are that it must be permanently updated so that errors and incompatibility problems with previous versions are fixed, video game machines must be kept safe against any type of web virus; the game design and graphic image must be current. New characters, elements or effects must be added and/or removed, collaborations with famous personalities are carried out. In addition, you have to keep up with current trends, respond and please the requests from customers, marketing companies and investors. Therefore, the work of the developers does not end once the video game is created and launched, but rather it is a job that requires daily and permanent work.

For all these reasons, there is a direct relationship between the culture of Crunch Time and the world of videogames, because it is a highly demanding industry that's always in constant movement and due to once a game is created, the actions that are made on these are constant in order to guarantee their correct performance.

3. STUDY CASE: CD Projekt Red

3.1 CD Projekt Red

CD Projekt was founded in 1994 as a business dedicated to the importation of video game CD releases from the United States and then selling them at a bazaar in Poland. The Polish company was founded by Michal Kicinski and Marcin Iwinski, who met in high school. Kicinski was in charge of everything related to the sales of the software's while





Iwinski was in charge of the area of communication with suppliers and orders. CD Projekt went on to become the first video game publisher in Poland to publish PC software.

CD Projekt became the first Polish distributor to publish games in Polish, which was a success among the population and, consequently, an increase in sales of the games they offered. All this allowed them to found the subsidiary CD Projekt Red Studio which purpose was the creation of the company's own video games.

The first video game made by the company's subsidiary was launched on the market in 2007 under the name of *'The Witcher'*. To bring this game to life, they were inspired by a saga of fantasy books written by Andrzej Sapkowski but for this they had to buy the rights of this saga. After a good acceptance by the public of the first saga of the videogame, they made a second saga, *'The Witcher 2: Assassins of Kings'*, of equal success among the Polish population and other parts of Europe but with the launch of the third saga of the game, *'The Witcher 3: Wild Hunt'*, in 2015, they achieved great success worldwide, selling more than 6 million copies in the first 6 weeks of its release and consequently numerous awards.

Image 11. Saga of the videogame The Witcher



Source: official website, <https://en.cdprojektred.com/>

The success and worldwide recognition that the third videogame accomplished had led to legal problems with the saga's writer. CD Projekt paid \$9,500 to Adrzej Sapokowski for the rights to the novel, a number that was nothing compared to the millions that the company was making off the saga. The author of the novel sued the company in 2018





for 14 million euros, the reason for this lawsuit was because the 9,500 dollars that CD Projekt Red paid for the literary rights only corresponded to the first saga. In an interview offered to Robert Purchase from 'Eurogamer', the writer Adrzej Sapkowski (2017) stated:

I was stupid enough to sell them rights to the whole bunch. They offered me a percentage of their profits. I said, 'No, there will be no profit at all - give me all my money right now! The whole amount.' It was stupid. I was stupid enough to leave everything in their hands because I didn't believe in their success. But who could foresee their success? I couldn't

Fortunately, both parties reached a friendly agreement, as can be concluded from the statement issued by CD Projekt (2019) through its website “CD PROJEKT, creators of “The Witcher” series of games and upcoming role-playing game “Cyberpunk 2077”, together with Andrzej Sapkowski, author of “The Witcher” books, would like to inform that today both parties signed an agreement further solidifying their relationship”. The definitive clauses were never revealed.

3.2 Crunch Time at CD Projekt Red

The creation of a new game proposal by the company led to the appearance of crunch within it. This is the case of the videogame Cyberpunk 2077 announced by the company in May of 2012. Consumers waited anxiously for the videogame's release but the surprise was major when they found that the date of release was going to be postponed, event that did not happen once but a total of three times; the first release date was set to April of 2020, the second date was set in September of that same year, and the third date was going to be on November 16th of 2020 but it wasn't until December of 2020 that players were able to enjoy the game.

A year before the game's release, CD Projekt Red's co CEO Marcin Iwinski assured a gaming website in an interview that they would avoid excessive work hours, that is, mandatory crunch, and allow their workers to work without exceeding the hours but this was far from reality. With the date of the third launch attempt approaching, November 2020, Adam Badowski, former director of the company and, as journalist Jason Schreier notes, has sent an email to all members of the company in which he expressed that it would take 6 days work weeks in order to meet the release date set in November;





therefore, the crunch became mandatory. Some of the videogame developers who worked for the company claimed that they spent nights and weeks not only on that project but on others for more than a year. In another words, the company has been experiencing some crunch for a while.

In a conference call with investors, the company's co-founder Adam Kicinski stated that the crunch workers were experiencing with the game's creation "wasn't that bad - and never was." Kicinski was aware of certain areas of the company's, such as engineers and programmers, long hours of work. It caused an indignation among the work environment having to apologize to his staff for the statements made, encouraging employees to speak with him directly if they considered doing so.

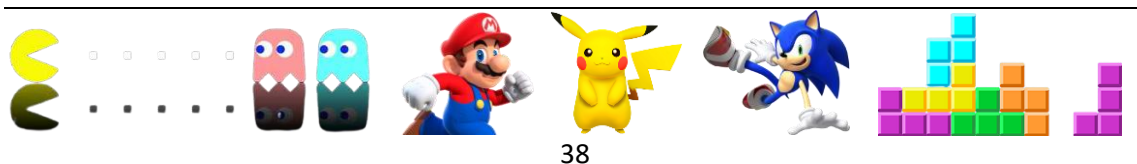
The consequences of long working hours were reflected in the videogame once it was launched to the market.

The crunch in the company can be considered as a result caused by pressure from investors, publishers of the game and the target audience. A practice that they resorted to in order to be able to launch the videogame on the indicated date and avoiding postponing it again.

3.2.1 Organizational effects

The launch of CyberPunk2077 was a failure, the game had many bugs despite the multiple delays that its release had and the Crunch to which the workers were subjected during the entire production process.

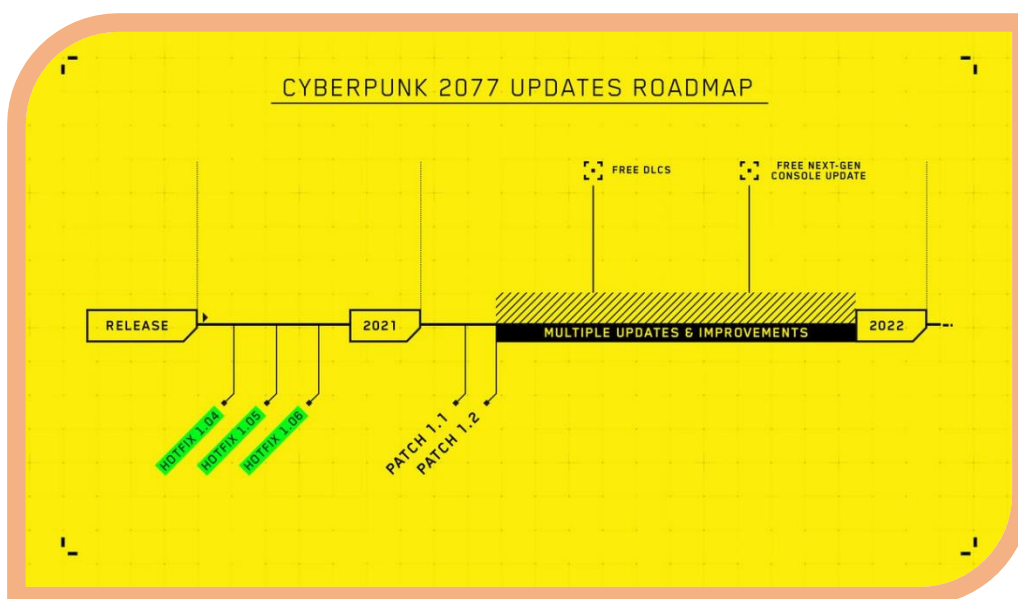
The process of creating the video game involved several strategic errors. In the first instance, the product was announced in 2012, but it was not until 2016 that its development began and it was later launched in 2020, which indicates that the company focused more on marketing aspects than development. The workers emphasize the lack of organization and communication -the latter being one of the practices defended by the universalist approach, aimed at achieving good results within the organization, and which was proposed by Pfeffer (1998)- between the different departments, which caused confusion; these mistakes made from the highest level of the organization led to long hours of work between the developers.





Throughout 2021, the company released numerous communications about how they were going to work on new projects and improve existing ones. To improve the game, Marcin Iwinski, co-founder and CEO of the studio, and his team decided to release improvement patches for the game, which were going to be extended throughout 2021, with this strategy it was intended to dose the work performed by employees and avoid Crunch as much as possible. The delivery deadlines were changed and the schedule of improvements that the study was going to follow was shown to the public, with the aim of achieving business transparency that would increase the confidence of not only customers and investors, but also of the employees themselves.

Image 12. Schedules of improvements



Source: <https://www.xataka.com/>

The company had to deal with numerous employee leaks such as the creative director Sebastian Stepien, who resigned his position to join another company, Blizzard Entertainment, holding the same position. Stepien was a veteran of the company CD Projekt Red with 12 years of experience. The hard work endured in the company, the scandal that the company was involved in and the Crunch to which they were subjected, were an important factor in the director's decision to abandon the studio.





Consequently, other workers decided to unite forces and create their own studio, as it was the case with Rebel Wolves, a studio that was created by former veteran employees of CD Projekt Red. The studio game was led by Konrad Tomaszewicz, who collaborated on the Cyberpunk 2077 game and it sought to change the way actions had been taken at CD Projekt, prioritizing the stability of the team at all times. As indicated on their website, the studio is based on three important values which are justice, teamwork and sincerity, three basic aspects that were not respected at CD Projekt Red. With justice, the members of Rebel Wolves seek honesty at all times, to be transparent with players, partners and among themselves. The second aspect, teamwork, seeks to create an environment where various developers can create something much greater than the sum of its parts and where the voice of each one of the members of the study is heard. Finally, sincerity from the public, opinions and feedback that can help the company improve. For the company, the most important thing is that developers feel passion for what they do, for what they like the most, creating video games, and that this does not become a form of obligation and, consequently, something they hate. The key piece to achieve good results is to gather talent, motivate people, give them room to grow, experiment and think creatively, all this is what they practice in Rebel Wolves and, in addition, it is what was not put into practice at CD Projekt Red with the development of their video game. The company is still in its maturity stage and, despite being inferior in size and recognition, compared to the big companies in the same field of activity, it is proving that they can offer something that many other studios cannot and that is a key aspect for a company, that is, a favourable environment in which developers can think big, follow their dreams and feel ownership of their work.

On a personal level, some workers expressed their health problems, such as back problems, anxiety and depression when dealing with a toxic work environment. Many also refer to the lack of personal life, especially the lack of family reconciliation, due to the long hours of work in the studio, and many have confessed that they worked under coercions; if they did not agree to the crunch to which they were being subjected or if they did not agree with the actions that were being carried out in the company, they became enemies or directly "did not fit in the work team", they faced the risk of being fired, a fact that differs from one of the good practices proposed by Delery & Doty (1996)





in the universalist approach or "best practice" approach, the expression of opinions in the organization. On the other hand, some developers did not give in to these coercions and quit their jobs, the main reason being the incompetence, of those responsible for the Human Resources department to solve the problems of mismanagement, from which problem of the retention of employees in the company also derives, described as "terrible" by several employees; any employee who is not satisfied with their position in the company will leave immediately and no effort will be made to keep them, which leads to a high turnover of personnel.

3.2.2 Economic effects

The decision to postpone the release of the video game again was responsibility of the senior officials of CD Projekt Red but they opposed to this idea due to the license agreements and marketing commitments that were already operative and a further delay would mean the loss of money. In addition, once the game was launched, the company offered full refunds to all players who had purchased it online, set at 2.2 million dollars.

CD Projekt Red faced a lawsuit from US investors, the reason being the misleading statements made in relation to the release of Cyberpunk 2077. The investors asked the court to judge whether the actions the company had taken in relation to the release of the video game were a violation of federal law. All this concluded in an out-of-court settlement in which the company would pay 1.85 million dollars (approximately 1.6 million euros) to the plaintiffs in exchange for the lawsuit being withdrawn, but this did not mean that the video game studio CD Projekt Red assumed its responsibility for the mistakes made in the video game.

Shares of CD Projekt Red had fallen by 25% days after the game's release. Video game developers suffered a 64.7% drop in net earnings for the early part of 2021, these earnings hovered around \$8.87 million; the main reason was the costs of repairing the game after it experienced failures after its launch. The company's chief financial officer, Piotr Nielubowicz, blamed this reduction in net profit on expenses related to updating Cyberpunk 2077 and exploratory work on new projects at an early stage of development.

The expectations that the company had were far from reality. Specialists expected revenues of around 60 million dollars and net profits of almost 22 million. In the first three





months of 2021, the costs of the company's sale increased by 77%, 4.2 million dollars were related to the costs of services related to Cyberpunk 2077.

The appearance of new studios with former employees, as we have mentioned before, not only represents a flight of talent formed by the company and its corresponding expense in terms of the hiring and training process of new talent but also the appearance of a business competition that until now it did not exist.

4. CONCLUSIONS

As a way of closing this work, we can point out that crunch or intense work practices are more present in organizations whose activity is more technological, as is the case of industries dedicated to the development of video games, as we have argued in this case-study. The organizations that carry it out consider this unconventional practice as a last resort to be able to fulfill the promises that it has previously made to its clients, shareholders and partners. Employees, on the other hand, have no choice but to agree to these practices that have serious physical and mental health consequences. We have been able to verify that in order to deal with this situation and avoid it as much as possible, the organization has developed a calendar to be able to plan the activities to be carried out in the organization, with their corresponding established deadlines and this way avoid crunch.

Although companies establish delivery deadlines to avoid Crunch, this practice is difficult to completely avoid due to the characteristics of the video game production process such as the constant updates that must be made to the game or the modifications of certain aspects such as sound, characters, etc., but the Human Resources department can carry out certain practices to reduce Crunch or its effects, such as ensuring that the work climate or environment is favorable, since this affects the motivation and performance of the worker; time flexibility could also be established or the possibility of telecommuting that allows workers to combine work with family life due to the fact that during Crunch time employees spend many hours and days without being able to see their relatives. On the other hand, the effects of Crunch such as fatigue and tiredness could also be reduced, making more shift rotations and offering its employees gym services in the same company to avoid health problems, and relaxation or entertainment activities.





As we have mentioned in the final grade work, the video game is a result of the combination of technology, human talent and creativity. Creativity occurs at a collective level; therefore, it is essential that the workforce is motivated and predisposed. The Crunch time, in this aspect, will have a negative effect on creativity because it affects the freedom and autonomy of the workers, since they cannot develop their visions, as we have seen in the case of CD Projekt Red in which the workers did not participate in decision-making and had to do what their bosses told them to do; overwork is another factor that will affect creativity by not letting employees develop their own hobbies. Having limited resources such as time, a key aspect in the development of Crunch, is a limitation for creativity because human beings need time to develop new innovative and creative ideas and thoughts, and this case, workers from the video games industry are affected by long periods of work, going from one project to another and having little to no time to give their minds a break and think of new innovating ideas.

It should be noted that the relationship between creativity and talent lies in the in critical thinking, both concepts complement each other in finding solutions to problems. Talent is a gift that some people have and that is influenced by cultural and even genetic factors, but creativity manifests itself in the development of new ideas and is related to motivation, freedom of decision, etc., so one is something innate, something you are born with and the other one can be learned and developed.

From the organizational consequences suffered by CD Projekt Red, one of them being the brain drain and the subsequent creation of a new game company, Rebel Wolves, created by former workers of CD Projekt Red, a situation arises; Konrad Tomaszewicz, co-founder of this new company, was unable to ensure that his company would not resort to Crunch practices in the development of its video games, but assured that they would try to avoid it with proper planning and scope, and as we have mentioned above, planning does not ensure that long-hour practices will not be resorted to, but it is not yet certain whether Rebel Wolves is following the same dynamic as CD Projekt Red. On the other hand, the values of the new company, would be aimed at attracting and retaining talent, offering a positive work environment, opportunities for growth, participation in decision-making, etc., which would be some of the practices that are carried out by multiple companies in their active search for talent.





In addition, we have drawn the following conclusions from the CD Projekt Red case. First, the initial success of a company leads it to pursue more ambitious and larger challenges, as was the case with the creation of the CyberPunk2077 video game, in which the higher the challenge, the more possibility of carrying out unethical or inhumane labor practices. Secondly, the crunch fails to show the lack of the Human Resources department, which is in charge of resolving the conflicts that arise between the company and its employees, ignoring the complaints of the employees and not investigating the reason why the workers leave the company; On the other hand, the lack of planning and organization reveals that the implementation of the company's strategy is not correctly defined or does not exist, giving rise to improvisations and false promises. Thirdly, the direct relationship between the performance of the personnel with the economic results of the company, as is the case in this case-study, we were able to observe how the low performance of the employees caused by fatigue, led to errors in the development of the video game which were reflected in the sales. And, finally, we have concluded that these practices carried out towards employees have a real effect and do not have any positive effect for companies, therefore, it is necessary to carry out more actions to stop them.

Regarding the limitations that this work has entailed, the scarce information on the concrete actions taken by the company, this is due to the fact that there is no clear or formal statement by the company. On the other hand, we also have limitations in terms of workers' testimonies about the work environment and the effects that working conditions have had on them and the difficulty of obtaining quantitative data to know the real impact of crunch time on the company and on the workers.

This study can be taken as a basis for future research. An investigation could focus on determining whether crunch time practices are merely practices carried out by companies in the video game sector and why companies are reluctant to abandon these practices. Another line of future research could be to determine the importance of a good Human Resources department as well as the practices that fit best for the video game industry and the limitations they present when dealing with problems of a greater nature. Finally, another line of research to address would be related to determining what the future of work in the video game sector will be.





In general terms, this work has shown us the vulnerability that Human Resources departments present in some organizations and how the power of the company is concentrated in a small number of workers. It has also shown us how fundamental the role played by a company's staff is and how their performance will determine the future of the company, not only economically but also in a social and organizational level.





5. BIBLIOGRAPHIC REFERENCES

- Allende. (2021, july 19). *Definición de CREATIVIDAD por diferentes autores*. Retrieved may 19, 2022, from Creatividad cloud: <https://www.creatividad.cloud/>
- Antonio, J. (2021, january 1). *CD Projekt enfrenta demanda por mentir a inversores de Cyberpunk 2077*. Retrieved march 29, 2022, from Código Espagueti: <https://codigoespagueti.com/>
- Asociación Española de Videojuegos. (2020). *La industria del videojuego en España. Anuario 2020*. Asociación Española de Videojuegos. Retrieved march 20, 2022
- Ávila, G. J. (2016). *Prácticas de recursos humanos*. Retrieved april 27, 2022, from <https://docplayer.es/>
- Barney, J., & Wright, P. (1998). *On Becoming a Strategic Partner: The Role of Human Resources in Gaining Competitive Advantage*.
- Becker, B., & Gerhart, B. (1996). The impact of human resource management on organizational performance: Progress and prospects. *Academy of Management Journal*, 39(4), 779-801.
- Caillois, R. (1958). *Les jeux et les hommes (Le masque et le vertige)*. Paris: Gallimard.
- CD Projekt. (n.d.). *History*. Retrieved march 21, 2022, from <https://www.cdprojekt.com/>
- Chalk, A. (2020, october 29). *CD Projekt boss apologizes for saying Cyberpunk 2077 crunch is 'not that bad'*. Retrieved march 22, 2022, from PC Gamer: <https://www.pcgamer.com/>
- Chiavenato, I. (2009). *Gestión del Talento Humano*. McGraw Hill.
- CHRISR6. (2019, may 10). *Crunch Culture: Effects on Employees Exposed to Extreme Work Conditions*. Retrieved april 29, 2022, from <https://blogs.lt.vt.edu/>
- CurioSfera. (n.d.). *Historia de los videojuegos: inventor y evolución*. Retrieved march 19, 2022, from <https://curiosfera-historia.com/>
- De, S. (2021, september 08). *What Is Crunch Culture in video Games*. Retrieved march 17, 2022, from <https://www.makeuseof.com/>
- Delery, J., & Doty, H. (1996). Modes of theorizing in strategic human resource management: tests of universalistic, contingency and configurational predictions. *Academy of Management Journal*, 802-835.





- Delgado, M. (2021, december 19). *CD Projekt pagará 1,85 millones a inversores por el accidentado estreno de Cyberpunk 2077*. Retrieved march 21, 2022, from Vandal: <https://vandal.elespanol.com/>
- Donovan, T., & Garriott, R. (2010). *Replay: The history of video games*. Yellow Ant.
- Ecoembes. (2020, may 25). *Causas del bajo rendimiento laboral*. Retrieved march 18, 2022, from <https://ecoembesempleo.es/>
- Edge. (2021, april 3). *What can we learn from the Cyberpunk 2077 launch disaster?* Retrieved march 26, 2022, from GamesRadar+: <https://www.gamesradar.com/>
- Ehrenberg, H. (2019, october 01). *Excessive crunch is bad for business | Opinion*. Retrieved march 17, 2022, from <https://www.gamesindustry.biz/>
- Erard, G. (2021, may 31). *Las finanzas de CD Projekt Red sufren por primera vez el desastre de 'Cyberpunk 2077'*. Retrieved march 21, 2022, from Hipertextual: <https://hipertextual.com/>
- Fundación Española del Corazón. (n.d.). *Cardiopatía isquémica*. Retrieved march 18, 2022, from <https://fundaciondelcorazon.com/>
- Glassdoor. (n.d.). *CD PROJEKT RED Reviews*. Retrieved april 29, 2022, from <https://www.glassdoor.ca/>
- Gómez-Mejía, L., Balkin, D., & Cardy, R. (2008). *Gestión de Recursos Humanos* (Quinta ed.). Pearson-Prentice Hall.
- Google Patents. (n.d.). *Video exercise or game floor controller with position indicating foot pads*. Retrieved march 19, 2022, from <https://patents.google.com/>
- Hassan, U. (2021, march 18). *EXPLAINER: What is crunch culture and how does it affect video game studios?* Retrieved march 17, 2022, from <https://umarhassan96.medium.com/>
- Hektor Profe. (n.d.). *Las 7 fases más importantes en el desarrollo de juegos*. Retrieved april 21, 2022, from <https://docs.hektorprofe.net/>
- Internet Paso a Paso. (n.d.). *Historia de los videojuegos: ¿Cuál fue el primero y cómo han evolucionado desde sus inicios?* (n.d.). Retrieved may 19, 2022, from Internet Paso a Paso: <https://internetpasoapaso.com/>
- Huizinga, J. (1949). *Homo ludens: a study of the play-element of culture*. London: Routledge & Kegan Paul Ltd.





-
- Kain, E. (2020, october 12). *It's Time To Stop Defending CD Projekt Red Over 'Cyberpunk 2077' Crunch*. Retrieved march 22, 2022, from Forbes: <https://www.forbes.com/>
- Lara, D. (2021, april 29). El sector del videojuego disparó un 18% su facturación en 2020. *El País*. Retrieved march 20, 2022, from <https://elpais.com/>
- López, A. R. (2019). Largas jornadas de trabajo y su impacto en la salud: perspectiva desde la desigualdad de género (Trabajo fin de grado). Universidad Internacional SEK.
- Lozano, M. (2021, july 23). *Conoce las fases del desarrollo de videojuegos*. Retrieved april 21, 2022, from <https://udeka.es/>
- Maslow, A. H. (1954). *Motivation and personality*. New York: Evanston.
- McCurry, J. (2017, october 05). *Japanese woman 'dies from overwork' after logging 159 hours of overtime in a month*. Retrieved march 17, 2022, from <https://www.theguardian.com/>
- Morales, F. C. (n.d.). *Departamento de recursos humanos*. Retrieved april 25, 2022, from <https://economipedia.com/>
- Newzoo. (2021). *Global Games Market Report. The VR & Metaverse Edition*. Newzoo. Retrieved march 20, 2022
- Paez, D. (2020, december 14). *HOW WINSTON CHURCHILL COINED GAMING'S MOST NOTORIOUS BUSINESS PRACTICE*. Retrieved april 20, 2022, from <https://www.inverse.com/>
- Partis, D. (2022, february 16). *Cyberpunk and Witcher 3 game director launches new studio Rebel Wolves*. Retrieved march 28, 2022, from Games Industry: <https://www.gamesindustry.biz/>
- Pennington, J. (2008). *What is the origin of the phrase "crunch time"?* Retrieved april 20, 2022, from <https://www.quora.com/>
- Pfeffer, J. (1998). Seven Practices of Successful Organizations. *California Management Reviews*, 40, 96-124.
- Pitarch, L. M. (2015). Creativity in firms case-study. 4-5. Universitat Jaume I. Retrieved may 19, 2022, from <http://repositori.uji.es/>
- Real Academia Española. (n.d.). *Creatividad*. Retrieved march 19, 2022, from <https://dle.rae.es/>
- Rebel Wolves. (n.d.). *Studio*. Retrieved march 28, 2022, from <https://rebel-wolves.com/>





-
- Redacción Médica. (n.d.). *Enfermedades cerebrovasculares*. Retrieved march 18, 2022, from <https://www.redaccionmedica.com/>
- REUTERS. (2021, november 29). *Cyberpunk costs weigh on CD Projekt's quarterly profit*. Retrieved march 29, 2022, from <https://www.reuters.com/>
- REUTERS. (2021, may 31). *Cyberpunk maker reports slump in quarterly profit amid Playstation delisting*. Retrieved march 29, 2022, from <https://www.reuters.com/>
- Rivera, N. (2016, march 20). *Cómo las largas jornadas de trabajo influyen negativamente en la salud*. Retrieved march 17, 2022, from <https://hipertextual.com/>
- Rodríguez, D. (2022, february 16). *El director de Cyberpunk 2077 y The Witcher 3 funda Rebel Wolves, un estudio de desarrollo que ya trabaja en un RPG de nueva generación*. Retrieved march 28, 2022, from Hobby Consolas: <https://www.hobbyconsolas.com/>
- Salas, T. H. (2004). Una definición de la creatividad a través del estudio de 24 autores seleccionados (Trabajo fin de grado). Madrid: Universidad Complutense de Madrid. Retrieved may 19, 2022
- Schreier, J. (2016, september 26). *The Horrible World Of Video Game Crunch*. Retrieved march 17, 2022, from <https://kotaku.com/>
- Schreier, J. (2019, june 14). *CD Projekt Red Boss Again Promises That Cyberpunk Devs Won't Have To Crunch*. Retrieved march 22, 2022, from Kotaku: <https://kotaku.com/>
- Schreier, J. (2021, january 16). *Inside Cyberpunk 2077's Disastrous Rollout*. Retrieved march 22, 2022, from Bloomberg: <https://www.bloomberg.com/>
- Serrano, M. T. (2004, january 31). Creatividad: definiciones, antecedentes y aportaciones. *Revista Digital Universitaria*. Retrieved may 19, 2022, from <https://www.revista.unam.mx/>
- Starloop Studios. (2020, september 26). *Etapas Del Desarrollo De Los Juegos: ¿Cómo Se Crean los Videojuegos?* Retrieved april 21, 2022, from <https://starloopstudios.com/>
- Thomsen, M. (2021, march 24). Why is the games industry so burdened with crunch? It starts with labor laws. *The Washington Post*. Retrieved march 21, 2022, from <https://www.washingtonpost.com/>
- Tokio School. (2020, november 26). *La historia de CD Projekt: su crecimiento imparable en la industria*. Retrieved march 21, 2022, from <https://www.tokioschool.com/>





Tones, J. (2021, January 14). *CD Projekt Red reconoce el desastroso resultado de las versiones de consola de 'Cyberpunk 2077' y presenta un calendario de actualizaciones*. Retrieved March 2022, 2022, from Xataka: <https://www.xataka.com/>

Unión Sindical Obrera. (2021, April). *Nuestra prioridad, tu salud mental*. Retrieved March 17, 2022, from <https://www.uso.es/>

Valéry, P. (1943). *Tel quel, II*. Paris: Gallimard.

Weststar, J., Kumar, S., Kwan, E., & Inceefe, E. (2021). *Developer Satisfaction Survey*. International Game Developers Association. Retrieved May 01, 2022

Wright, P. M., & McMahan, G. (1992). Theoretical perspectives for strategic human resource management. *Journal of Management*, 18(2), 295-320.

Zimmerman, E. (2004). Narrative, Interactivity, Play, and Games: Four naughty concepts in need of discipline. In N. Wardrip-fruin, & P. Harrigan, *First Person: New Media as Story, Performance, and Game*. (p. 160). MIT Press.

