Study on the Relationship Between Creativity of Video Games Development and Rigid Management Process

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Abstract: In recent years, the video game industry has faced unprecedented opportunities and challenges. Increasingly fierce market competition has forced video game companies to develop games with better gameplay, innovation along with higher overall quality. However, in the process of game development, the ability to innovate is often greatly affected by the company's management structure and process. This paper analyses the history of Ubisoft's development, management process and change in terms of innovation ability, exploring how specific company management process has its impact on creativity and innovation. Three specific perspectives: project development process, relationship between technology and innovation, facilitating role of informal organizations, are used to demonstrate how management strategies influence team creativity in both positive and negative ways. The study found that as the industry environment and consumer perceptions change, the management structure and processes are supposed to evolve in response. If adjustments are not made in a timely manner, problems in management processes are able to radiate to all levels of the company. Once the balance between efficiency and creativity is lost, the process of restoring that balance could be long and bumpy.

1 INTRODUCTION

It is a significant milestone for the rapidly evolving video gaming industry during these two years, with more opportunities and challenges appearing. The global video games market was estimated to be worth 188.3 billion dollars in 2023 and is expected to reach 254.6 billion dollars by 2030. As game development technology continues to advance and global connectivity reaches unprecedented levels, the industry is gradually being pushed to the forefront of innovation and cultural influence. At the same time, it is hard to ignore that gaming industry had experienced a massive wave of layoffs since 2023. Although the layoff wave is caused by a series of factors of post-pandemic era, it reflects, to some extent, that leading companies of the industry are experiencing the pain of adjusting organizational structure and management process as well. In addition, since the game field becomes increasingly saturated with different types of games, developers have to be more committed to providing a unique, creative and interesting game experience, which in turn puts forward a higher demand for originality in game development.

Video games are essentially a cultural product, a complex combination of technology, art and interactive storytelling (Cohendet and Simon, 2007). In addition to these creative aspects, such a cultural product is also the result of a team-based industrial project regulated by a complex framework. Nowadays, with the increasing competition in the industry, the demands and standards from the top management are sometimes on the opposite side of the developers' quest for game quality. Under this framework, the top management will make demands on developers from a business perspective based on time, cost and market considerations. From the perspective of the development team, sometimes they have no choice but to accept the management process or related decisions under these management frameworks, which may result in a significant loss of creativity and uniqueness during the game development process.

Therefore, for the management of a large-scale video game project, it is actually a result of

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maintaining a delicate balance (DeFillippi and Arthur, 1998). On the one hand, it is important to stimulate the creativity and motivation of team members from different backgrounds or communities and try to integrate their expertise in a flexible way. On the other, it is about trying to meet time, cost and market requirements with a standardized but not too rigid or demanding management process (Lampel et al., 2000). By analysing the choppy history of Ubisoft, this paper explores how changes of management process affect this balance between creativity and institutional productivity, whether it is stimulating the innovation or curbing it with more chaos and inefficiency. Besides, by analysing the mechanism of this impact, it is hoped that some more general, potential optimizations of the management framework for video game development can be provided.

2 BACKGROUNDS

2.1 History of the Video Game Industry

Video games can be traced back to the 1950s and 1960s, when computer scientists began to try to design simple games and simulations using minicomputers. "Spacewar!", one of the earliest games to appear on a video display, was developed by student enthusiasts at MIT in 1962 (Martin, 1981). By the mid-1970s, the advent of low-cost programmable microprocessors led to the first home game console. During this era the arcade video games were becoming more and more popular, such as "Space Invaders" and "Pac-Man" (Alexander, 2019). Moving forward to 1983, the U.S. gaming market was on the verge of collapse due to the terrible game quality and proliferation of homogenized games. Such an incident prompted Japanese video game industry to take over the market leading position (Gallagher and Park, 2002). Nintendo released the Nintendo Entertainment System in 1985, which gave a huge boost to the video game industry at that time (O'Donnell, 2011). During the late 1980s and early 1990s, the standardization and improvement of personal computers further fuelled the growth of video games. Furthermore, the intense competition between Nintendo and Sega in the U.S. market during this period also contributed to the development of the game console industry. Into the early 1990s, the start of Sony Play Station not only eroded Nintendo's market share, but also kicked Sega out of the gaming hardware market (Gavin, 2015). Following Sony's

entry into the console market was the Xbox from Microsoft in the early 2000s and it was at this time that the future "Big 3" competition of the game console industry was established. However, the biggest change in the game industry since 21st century is the development and popularization of smart phones and tablet computers. Gradually, mobile games began to occupy a larger share of the market. Besides, demographic structure of the industry is different as well. Compared to the 3A games with increasingly higher risk and cost, more and more delicate and creative indie games came to the attention of the public during this period (Richard 2017). In recent years, as mobile devices had become much more powerful, mobile gaming is slowly becoming a dominant force in the gaming industry, with a staggering 107.3 billion dollars revenue from app stores alone. Along with the rise of mobile games, eSports industry had also come to the centre of the stage. Nowadays, eSports attracts huge audiences all around the world and rivals traditional sports in terms of viewership and revenue. It is expected that eSports industry is able to reach 5.4 billion dollars in revenue by 2027 with 720 million viewers.

Overall, the video game industry today has gained unprecedented growth and attention. However, a growing saturation of the game content and increasing competition in the industry keep testing the practitioners. Additionally, more negative or sensitive issues about the industry are brought under the microscope by the general public, such as cybersecurity and regulatory issues, microtransaction systems with a gambling nature and the negative effects of soft pornography along with violence on minors.

2.2 Creativity and Management Processes of the Gaming Industry

Technically, video games are software running on the hardware. Therefore, for the creativity of the game industry, it can refer to both innovation in software and iteration in hardware. The term "innovation" or "creativity" in this paper mainly refers to the creativity related to gameplay and game content.

Compared to general commodities, video games are a product with a relatively short lifespan. Nevertheless, the process of development requires quite large investment and time cost, which means that, for a video game with a long development cycle and large upfront investment, there is little room for errors. The vast majority of single-player game sales are concentrated in the first three months after release. All these factors lead to a very competitive market,

making novelty, innovation, and originality increasingly important during the game development phase (Lê et al., 2013). However, the pursuit of innovation in game development must be accompanied by efficiency and financial prudence in the process.

From this point of view, the process of developing a game can be called an "innovation project" (Zackariasson et al., 2006). When people talk about projects, they usually consider them as the opposite of creativity or flexibility, due to the fact that a project needs to have a clear scope, a completion date, a corresponding budget and clear requirements for the final output (Nicholas, 2001). One of the advantages of this management process is that it can be rigorously planned and scheduled to enable projects to be completed on time. In practice, some projects can indeed be clearly defined and planned in advance, but this is difficult for game development, especially for large-scale game projects that aim for originality and creativity. One of the great obstacles is that it is almost impossible to come to an agreement in advance for specific outcomes and dates to be delivered. Therefore, in the process of game development, in order to balance quality and efficiency, the goals are often qualitative and short-lived, and are gradually refined as the development process proceeds. Similarly, for game companies, the management process should also keep up with the trends and timely make suitable adjustment.

3 CASE STUDY

3.1 Research Context

Ubisoft Entertainment SA is a video game developer and publisher founded in 1986 and headquartered in France. With nearly 30 studios around the world, it is currently the second largest independent development team in the world. Ubisoft used to be a leader in the industry, with its strong innovation, excellent artistry, and top-notch technology. However, in recent years, Ubisoft has taken a completely opposite path, turning from the "big brother" to a controversial little brother, with projects being axed, games being constantly postponed, employees going on strike and reputation collapsing. It seems that the once-venerable company has run out of steam. The creativity dried up, the overall game quality dropped, and the company is bloated and inefficient. This section mainly focuses on how certain management processes contributed to the burst of creativity in project development during Ubisoft's rising stage around 2015.

3.2 The Industry Leader

3.2.1 Project-led Organization

Ubisoft has many great game franchises which are known for their great creativity, such as Assassin's Creed, Rainbow Six, and Raging Rabbids. Take Ubisoft's most widely recognized studio, Ubisoft Montreal, for example, which employs over two thousand people and is one of the largest game development studios in the world. Many of Ubisoft's flagship IPs come from the Montreal studio, such as Prince of Persia, Rainbow Six, Far Cry and Assassin's Creed. Like other organizations that have multiple creative projects running in parallel, the studio fits the description of a "project-led organization" (Hobday, 2000), with typically around 15 projects running concurrently within the studio. Each project is independent and managed in different phases. The overall project leader has more autonomy but is still under the supervision of the studio management team as well as ad hoc supervision from the marketing and innovation departments at headquarters.

In terms of the process, the advancement of a project can be roughly divided into three stages: initial conceptualization, establishment of the project, and production, with repeated evaluation and adjustment through internal project meetings along with project team - senior management team meetings interspersed between these three steps. In most cases, the top management team has the final say. The evaluation of the game's innovation and gameplay is executed through an internal process. At the Montreal studio, the overall development is managed by an executive project manager, with a core team and a playable production team (Cohendet and Simon, 2016). During the initial conceptualization phase, the core team chooses to either breed a new IP or re-create an existing one, based on market research, technical capabilities, and advice from industry experts; and then maintains an iterative development spiral during the pre-conceptualization phase, testing and refining the team's ideas. Once the project team believes the idea is mature enough, coordination between the development team, the studio, and the headquarters establishes the direction of the entire development. After the first phase, the project team will present the mature idea and the prospects of the game concept in a kick-off meeting, which also marks the start of official pre-production phase. In addition to presenting conceptual content, this meeting also allows senior management to understand the game's market position and potential, planning the launch of the final product. This project-led creative process

allows the project team to produce a new game in a relatively fixed way which is quite "cookie-cutter," while providing relatively greater flexibility within such a fixed framework.

3.2.2 Technological Innovation

Although the emphasis of this article is not on the innovation of technological in the gaming industry, it can in turn drive breakthroughs in game content. There are two general sources of technological innovation, the first being the release of new game consoles; the second being the development of new game engines or improvements to existing game engines.

For new console releases, Ubisoft have a department dedicated to predicting and interfacing with new technologies. This department will predict what aspects of the game will be improved by the new console, such as the graphic expressiveness or the movement verisimilitude. According to these pre-investigations, Ubisoft is able to deploy in advance to start adapting to the corresponding technological changes and come up with new ideas related to gameplay and game design.

Generally speaking, the emergence of new technologies provides the inspiration and foundation for new gameplay. Having such a process in place allows the company to make more systematic and comprehensive assessments of gameplay innovations and potentials, meanwhile speeding up the response time. More importantly, developers actually have a greater voice during this process. Part of the reason why Ubisoft places so much emphasis on this process is that, for the company, the first step in the conceptualization phase of a game's development is to try to find the technological breakthroughs that will trigger a creative spark. Tom Clancy's Splinter Cell, for example, is a famous example of this concept, where Ubisoft utilized advances in its own engine to bring new inspiration and development direction to game design.

3.2.3 The Hidden Structure of Creativity

Within an organization, members more or less have the chance to meet or communicate in a looser and relaxed way. Admittedly, a large part of the content of these relatively informal communications is not aligned with the company's goals or strategies. However, it is often in these informal communication opportunities and spaces that members of the organization are able to boldly build hypotheses, exchange ideas face-to-face and actively explore in a relaxed environment. Such an approach can be seen as a place for knowledge exchange and creativity outside the corporate system, one hidden structure for innovation.

Taking Ubisoft Singapore studio as an example, they have deliberately cultivated a culture where hobby clubs are an integral part of the studio. These clubs operate organically during off-hours, providing opportunities for employees to get together and try to maximize the advantage of invisible creativity structure. At Ubisoft Singapore, the company has more than 30 active clubs covering a wide range of activities, from running clubs, to fight clubs, to food clubs and even more. In this way, the Singapore studio hopes to help them create a harmonious atmosphere in the office. According to one of the studio's writers, who is responsible for designing the game's story flow, "A lot of the dialog and design needs to take place in a relaxed and comfortable space. By nature, game development is a very collaborative space. Out of necessity, every developer has to constantly collaborate with each other." Attempting to build open communication spaces within the company in an organized manner has both enhanced collaboration and the exchange of ideas between employees, as well as improved the working environment. Such places allow employees to step out of their everyday roles and try out completely different roles and ways of interacting with a more open and inclusive mindset. Besides, because the club includes director-level employees, participants have a real opportunity to learn from more experienced industry veterans.

In addition to this, Ubisoft encourages having multiple studios from different parts of the world to collaborate on one project to increase the diversity and richness of ideas. These worldwide exchanges empower game development with a broader range of thinking and creativity, bringing a better chance of resonating with players around the world.

Such invisible open-innovation spaces, outside of the relatively more serious day-to-day organizational structure of a company, create a series of informal interactions that provide a diverse and more vibrant framework for the process of discovering new ideas.

4 PROBLEM OBSERVATIONS

4.1 The Fall of Ubisoft

According to Ubisoft's 2023 earnings report, revenue fell 56% year-on-year in the fourth quarter of 2022, while the net loss for the whole year of 2022 even exceeded $538 million, far exceeding the company's

loss expectations. The former gaming giant has fallen into deep water in recent years, and the company's stock price also fell to a seven-year low in 2023. The company's management had recognized the seriousness of the problem. CEO Yves Guillemot once sent an internal email to all employees asking them to devote themselves to helping Ubisoft get back on track. However, the email was seen by many employees as an attempt to shirk their responsibilities, with many saying that it was an attempt to pave the way for mass layoffs and increased workloads. As employees reacted more aggressively, it even sparked a strike at the Paris studio. This section focuses on what kinds of management process issues have emerged in the course of the company's continuous growth and changes in the industry as well as consumer groups, which set the stage for their current internal and external troubles.

4.2 Problem Focus

4.2.1 Large Scale and Low Productivity

Since 2020, Ubisoft's production capacity has been declining year after year. In 2019, the company launched about 10 new games, in 2020 there were 7, and in 2022, the number of games released for the year was reduced to 4, with the overall quality being even more unsatisfactory. Nonetheless, along with this decrease in efficiency, the company size just kept growing. Ubisoft's ongoing strategy of globalization led them to have 45 studios in close to 30 countries at one point. Such a strategy did give them a diversity of backgrounds and ideas, but the company's volume got out of control. Even after the structural reorganization and layoff fiasco of 2023, the company's total headcount still stands at about 19,000. By contrast, the entire Activision Blizzard workforce is only 13,000, but the company's market capitalization is four times that of Ubisoft.

4.2.2 Triple Mistakes of Game Development

Today's Ubisoft has three serious problems in game development that make them mediocre in terms of gameplay, aesthetics, and technical aspects. The first is the serious homogenization of their productions. Ubisoft, as both a developer and publisher, has had a number of distinctive IPs of all shapes and sizes, yet nowadays, every Ubisoft game feels like deja vu. This sense doesn't just appear on the surface, it has even permeated the core of every Ubisoft game. The constant replication of existing systems or the excessive reuse of RGB gameplay elements and open-world design features force players to expect nothing more from a Ubisoft game when it comes to innovation.

The second issue is the significant drop in gameplay experience. Due to the repetitive and formulaic design of the work and the lack of creativity, the playing experience tends to be uninspiring as well. Moreover, today's Ubisoft games often lack excellent directors and scripts during the development process, making it difficult for players to empathize with a formulaic world which also lacks the sense of immersion and realism.

The third problem lies in Ubisoft's current operating model - a continuing operation model. There is nothing wrong with the mode itself which can be applied to both online games and single-player games. Whereas the issue is that Ubisoft is relatively inexperienced in this type of operation. They are good at running game communities, which in a way enables their big Ips to collect a large number of fans in a relatively stable manner. However, Ubisoft is terrible at listening to players' suggestions, seldom making changes that meet players' wishes. The failure of Rainbow Six's eSports is the embodiment of such a drawback. Ubisoft as a company without long-term operational experience insist to develop service-oriented games and continuing operation, which is obviously not a wise decision.

Until the company's financial reports have become more and more unimpressive in recent years, Ubisoft was dragging its feet on all sorts of issues, steadfastly following through with its own boring production models, acting like a factory that delivers delicate yet frowned canned goods to the marketplace.

4.3 Sources Analysis

4.3.1 Subcontracting

As studios spread around the world, Ubisoft gradually developed a special "subcontracting" model. In other words, the same game project was assigned to multiple studios for joint development, with artwork, programming, scripts, and other types of work subdivided and assigned to multiple studios for completion. However, Ubisoft set up a separate "Editorial Committee" to oversee the development process of a game and make key decisions about the whole project. Under this model, Ubisoft was able to accelerate the development process and make the best use of their company's size (before it became overstuffed). This management process meant that the power of life and death for each game was in the

hands of a few people, while individual inspiration and creativity are always limited, as are one's viewpoints and perspectives. In fact, individuals at the bottom of the hierarchy are capable of making decisions that have a significant impact on company performance in knowledge work (Drucker, 1967). Moreover, excessive interference from the top is one of the major reasons why some games are difficult to produce. Sometimes this intervention was about gameplay changes, and other times it was pressure on the development team to keep the development process on schedule.

In the run-up to 2020, Ubisoft was repeatedly confronted with the conflicting issues of efficiency and creativity, and their choice was to err on the side of capacity. The subcontracted development model ensures a high standard of efficiency, and a development process that pushes multiple studios together has led to a reduction in development time. Along with the development process, the cost of developing the game has been reduced as well. Ubisoft prefers to minimize the cost of the development process compared to the cost of marketing and distribution, which is achieved by repeatedly utilizing similar game models and game materials to create a so-called "canned" production line.

In 2020, with a series of scandals such as "fraternity culture" and "workplace discrimination" coming to light, Ubisoft's senior management underwent a major bloodbath, including the dismissal of some senior members who had been leading the development decisions. The development team finally began to break free of the editorial team's authoritarian rule. However, the vacancy of the position of development coordinator left the project without the leadership of the top management. Ubisoft did not see a surge in the quality of its games, and its production capacity was also declining until the beginning of 2023.

4.3.2 The Split between Technology and Creativity

In general, the final video game product is the result of a trade-off between creative design, technological constraints, and platform limitations (Alves et al., 2007). As mentioned earlier, Ubisoft has experienced management turmoil in recent years under the umbrella of a subcontracted development process. For development teams, distrust spread within the team if development members feel that management lacks the technical knowledge to make practical decisions (Murphy-Hill et al., 2014). Indeed, it is the

case that the turbulence of the co-ordinated project developers makes it difficult for the management to make a rational assessment and decision on the overall development work. Meanwhile, it is more difficult to coordinate the different work divisions within the project, one of the specific manifestations of which is the conflict between game designers and programmers - the split between creativity and technology. Creative ideas in game design are sometimes perceived by programmers as redundant and difficult to implement features. The designers may consider it as a creative idea that improves the gameplay and facilitates the player. However, on the one hand, there is no such evaluation mechanism. On the other hand, most programmers have defaulted to Ubisoft's formulaic design, and no one is willing to be the one to initiate change. This vicious cycle not only drained inspiration and creativity from game development, but also had a negative impact on the team's internal communication and atmosphere. Conflicts between designers and programmers, between art and gameplay, and between different studios, all of which increase the difficulty of development.

4.3.3 Informal Community Maintenance

From a more intuitive point of view, the interaction of the informal community within the company is bound to be affected to a greater extent by the increasing size of the company and the proliferation of internal and external troubles. The specific process of this interaction explains how creativity is inhibited: members of informal organizations, who are also members of the development team of a particular project within the company system, have a dual role (Cohendet and Simon, 2007), i.e., as a member of a particular project and as a member of a particular informal community. This dual identity gives members the opportunity to acquire and exchange knowledge in both directions, allowing an innovative idea to flow into the wider organization of the company and to be refined in this circulation. For the company, it also fosters interaction between different communities and strengthens the company's common culture. Gradually, this interaction brings closer the cultural distance between different project teams within the company (Nooteboom, 1999). This increasingly rational ability to understand each other indirectly stimulates the creativity of team members. As Nooteboom points out, a lack of communication between different project teams within a company, or little gap in perception between them, diminishes a company's ability to innovate. For Ubisoft, the effort

to maintain an informal organization within the company could have made a big difference in the way development projects were managed, making the process more flexible and the atmosphere more harmonious, and giving the teams the ability to "renew and improve" themselves. However, as the company's problems mounted, this kind of communication became a catalyst that accelerated the spread of negative energy, with positive communication turning into complaints about executives or worries about one's career prospects.

4.4 The Future Work

As time moves into 2024, it is clear that Ubisoft has realized the severity of the problems, and that they are not helpless in the face of their predicament. Accelerating multi-platform layout, adjusting overall development strategy, and optimizing organizational structure all seem to be good choices for its future at this point. Nevertheless, how to re-ignite the company's creativity is a much knottier goal. The restoration of organizational creativity is difficult to achieve through a smooth and continuous adjustment mechanism (Cohendet and Simon, 2016). What is needed is most likely the introduction and establishment of new things in the organization by breaking existing rules and roles, rearranging some of the interaction processes, making constant adjustments to the organizational structure, and listening more to the employees as well as to the players. What also needs to be built together is Ubisoft's long-lost reputation as a gaming company among the community. How to restore the balance between efficiency and creativity, flexibility will be the ultimate proposition on Ubisoft's road back.

5 CONCLUSIONS

Ubisoft was the leader of the video game industry, yet as time went on, however, they didn't capitalize on their size and influence to make more attempts and breakthroughs. Instead, they chose to stay within the comfort zone, replicating development formulas, which has turned them into a follower of the crowd, losing creativity and competitive edge in the industry's rapid advancement. Unfortunately, the rigid management system and chaotic organizational structure accelerate the process of degeneration. Analysis from three perspectives - changes in the game development process, the alignment between technology and creativity, and the maintenance of informal organizations - reveals that the loss of

creativity and defects of the management process is a vicious circle. The negligence of trivial problems, lack of listening to the genuine ideas from team members are also part of the circle. In this context, analysing the relationship between management processes and creativity along with the mechanisms that influence them is of greater academic and practical significance. Hopefully, in future research, a horizontal comparison of the management structure characteristics from different game companies is able to bring a greater comprehensiveness and a stronger reference to this study as well.

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