

The Evaluation and analysis of Nintendo's digital transformation

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Abstract. Understanding the elements that propel corporate digital transformation is crucial in a time when digital technology is transforming business environments. Nowadays more and more people rely on video games for their entertainment and social interactions. Since its founding, Nintendo has amassed a devoted fan base for its console devices and grown to become a market leader in interactive gaming. This paper will describe the different aspect of digital transformation of Companies. Including definition, stages and so on. Besides, the report will discussion the case study of Nintendo. This essay will evaluate Nintendo's digital revolution as well as the competitive advantages and disadvantages of its goods, including the Nintendo Switch. Last but not least, recommendations are made to enhance the Nintendo Switch's features and other items by examining the company's current offerings and target market. The conclusion is at the end to summarize the main idea of the whole passage, including the future vision and outlook of Nintendo.

1 Introduction

Although video games have been around for a long time, their appeal has grown recently. They have evolved significantly from the early days of computer games and the first versions of Nintendo and Atari to today's Play Station, XBOX and Nintendo Switch. In this case, Nintendo is a legendary tech and gaming company with over a century of history. From its very beginnings as a small card game manufacturer, it gradually transformed into a globally renowned corporation through significant efforts. With the rapid development of technology and the change of market demand, Nintendo, as a world-famous game company, is undergoing a profound digital transformation.

Another change in the video game industry these days is the demographic expansion of the market. Video games are being played by younger people more than by any other generation. The enormous popularity of video games has led to some gamers earning hundreds of thousands of dollars just broadcasting videos of themselves playing the games at home. This has developed into yet another area of the video game industry where money is made [1,2].

Along with the development, many high tech companies are entering the game industry, like Apple, Google and so on. The IT community is trying to figure out how to make

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streaming video games as easy as streaming music from Spotify or a movie from Netflix. These companies are trying to achieve that the players play games without consoles. With this trend, people are more likely to play games with anyone, in anytime or at anywhere [3].

This essay aims to examine the phases and procedures involved in an enterprise's digital transformation. It will also specifically describe Nintendo's strategy, implementation and challenges in digital transformation and make recommendations accordingly.

The second section describes the definition of digital transformation, the procedure by which businesses are going digital and the influence that can bring by the transformation of companies to different aspect of the society. The third section is for the specific description of Nintendo. Including the case study of Nintendo, what exactly did Nintendo do for digital transformation and the discussion of pros and cons of digital transformation by Nintendo. The final section is to conclude the whole passage.

2 Theoretical overview

2.1 The definition of digital transformation of companies

The objective of digital transformation is to offer consumers value by incorporating digital technology into every aspect of an organization's operations, services, and products. These technologies change and optimize the way a company deploys and managers its everyday operations and also involves adopting new tools, processes, and strategies to enhance efficiency, innovation, and customer satisfaction. In a world where everything is connected digitally and globally, this type of transformation is about more than simply keeping up with the rest of the world and our business; it's about continuing to innovate and search for new, better ways to do things [4].

2.2 The process of digital transformation of companies

The first step is to identify business goals. Acknowledge the business goals you are striving to achieve through digital transformation, which including user experience, expanding market share and increasing revenue stream [5-7]. Optimization of your work processes' efficiency or employee performance, improving customer experience, and expanding into new markets could be the outcome of this. Second, analyze company's technology infrastructure, applications and so on, to access current technological maturity ad market. Third, determining the investments. This step is crucial since a failed investment will have a great negative impact on the business and even lead to bankruptcy. The fourth step is that the entrepreneur should select dedicated employee to finish specific tasks [8-10]. A professional team can focus on digital transformation initiative entirely, enabling them to acquire a deep understanding of relevant knowledge and technologies [11]. This step can help staff increase their working efficiency. The next step is to collect users and consumers' data. In this way, the company can better understand user preferences and provide personalized recommendations and services. The sixth procedure is that to get continuous feedback from customers and users. In the implementation process, companies need to constantly collect user feedback, adjust and optimize according to the market response to ensure the success of the digital transition. Finally, companies should advocate trial and learn something new continuously. Digital transformation is an ongoing journey. A culture that values innovation and a willingness to learn from mistakes is necessary for this [12].

2.3 The influence of digital transformation of companies

Large enterprises have launched digital transformation, and they are developing new industries emerging in the process of globalization as well as transforming traditional industries. With the introduction of digital technologies like smart manufacturing, e-commerce and financial tech, creating for enterprises to enormously boost production efficiency while dramatically reducing operating costs. This has inflected new vitality into the global economy and stimulated sustained economic growth cheering for a worldwide audience. On the other hand, digital transformation has also driven industrial structure to be optimized and upgraded. For instance, the manufacturing industry has achieved intelligent production using digital technology, significantly improving productivity; The retail sector broke its market boundaries by launching e-commerce platforms and realizing an online-to-offline development integration. This cross-industry technology penetration not only enables enterprises to achieve their own upgrading, but also promotes the optimization of the industrial structure of the whole society [13].

Second, digital technology is now very common in the public service sector and it has greatly enhanced the efficiency of operation for both governments as well as private or not-for-profit organizations [14]. For example, the construction of smart cities has actually enabled urban transportation, energy management as well as environmental monitoring to achieve intelligentization through Internet of Things technology; consequently both public resources have been used more efficiently. It also unveils and promotes government services through e-government, makes them more transparent and efficient serve people with the faster manner in all matters on business of managing citizens or public sectors based on speed-up process automates various social operations.

Companies transform to be digital, allowing them agility in taking advantage of market changes and optimizing operational processes and business decisions based on data. For instance, businesses can use big data analysis to gain insight into how their customers buy and tailor the products and services they offer accordingly. Meanwhile, by empowering enterprises to realize process automation and supplemental management with the application of artificial intelligence technology — production efficiency is boosted while human error minimized; this propels businesses towards increased competitiveness. Moreover, it gives enterprises a fresh incentive to innovate as they evolve during digital transformation. By using open platforms and ecosystems, companies can work with other businesses to create technical innovation as well as product development. For instance, smart manufacturing enterprises through the integrated application of Internet access have created more intelligent production equipment [15].

3 Case analysis

3.1 Case introduction

In 1889, a Japanese entrepreneur, craftsman called Fusajiro Yamauchi began manufacturing “Hanafuna” (flower card), which is a Japanese playing card in Kyoto. It helps to shape today’s Nintendo. Nintendo was the first Japanese business to successfully create plastic playing cards in large quantities after more than 60 years. In 1959, Nintendo automated the production the production of the playing cards by using machines to apply backing paper. The company changed its name to Nintendo Co., Ltd. in 1963, which is the famous gaming company now in the world and started manufacturing games in addition to playing cards. In the year that followed, Nintendo gradually shifted its focus to digital games. Nintendo eventually released TV Game 15 and TV Game 6, its first home video game consoles, in 1977. Twelve years later, the groundbreaking gaming system the Game Boy was launched.

It was the first portable, handled game system of Nintendo. After entering the 2000s, Nintendo's digital gaming consoles continued to evolve. The most notable console is the Nintendo Switch, released in 2017, which gave Nintendo the competitive edge to rival Sony and Microsoft's gaming consoles. One year later, Nintendo released its Online service called Nintendo Switch Online.

Nintendo reported 1.7 trillion yen (about \$13.1 billion) in revenue for the fiscal year that ended on March 31, 2022, according to their 2022 earnings data. Sales revenue from the Switch console came in at 1.6 trillion yen (about \$12.3 billion), a 3.6% decrease from the previous fiscal year. A mere 0.6% increase was seen in Nintendo's net profit for the fiscal year 2022, which came to about \$3.7 billion.

With yearly sales of \$411.1 million, down 6.5% from the previous year, Nintendo's income from mobile games and IP-related activities witnessed the biggest fall in the fiscal year 2022. Nintendo's playing card business had a 55.9% increase in sales, although overall yearly revenue was still only \$20.7 million [5]. About the switch of Nintendo, Throughout the 2022 fiscal year, Nintendo shipped approximately 23.06 million Switch units to retailers, reflecting a 20% year-over-year decline. According to Nintendo, this decrease in shipments was primarily attributable to the ongoing shortage of semiconductor components and other critical parts. Furthermore, the sales performance of the Switch exhibited a slight downturn compared to the previous fiscal year.

3.2 Nintendo's digital transformation practices

In the 1970s, Nintendo's president decided to lead the company, which was producing playing cards, into the home console industry. Nintendo launched its "Game & Watch" product line in Japan in 1980, introducing the first microprocessor-powered portable LCD video games. By the late 1980s, Nintendo's R&D department conceived the idea of a portable gaming device, ultimately developing the Game Boy in 1989. The Virtual Boy, a tabletop video game console introduced by Nintendo in 1995, was meant to display 'real 3D graphics' out of the box, in a virtual reality setting. This device's 32-bit, RISC-based system made use of two high-resolution, mirror-scanning LED (light emitting diode) displays to provide a three-dimensional visual experience that isn't achievable with LCD or traditional television screens [12]. It was the first consumer-facing virtual reality gadget created. Players can fully experience their own private universe with high-resolution red images against a deep black background thanks to Virtual Boy's unique design, which eliminates all external stimuli. Stereophonic sound and a new double-grip controller that can accommodate various spatial movements enhance the 3-D experience. In 1996, Nintendo 64 was launched in Japan. It is the world's first 64-bit home video game system. The release of "The Legend of Zelda: Breath of the Wild" in 2017 became one of the most significant steps in Nintendo's digital transformation, laying a solid foundation of its presence in the digital gaming market. In 2018, Nintendo introduced a monthly subscription option for Nintendo Switch players, allowing members to play games in the cloud. Additionally, the company launched the Nintendo eShop, an online store where players can purchase games and other content digitally. Nintendo continues to offer mobile games based on its well-known intellectual properties, such as Mario Parkour and Animal Crossing: Pocket Camp, in 2022. Also in 2022, Nintendo launched a cloud gaming pilot that allows users to experience large games on different devices. A Cloud Version of a game requires a reliable high-speed internet connection in order to play, as it streams the game from a server using streaming technology.

At the moment, Control Ultimate Edition-Cloud Version, Hitman 3-Cloud Version, and Marvel's Guardians of the Galaxy: Cloud Version are among the Nintendo Switch titles that provide cloud gaming functionality. The move not only broadens the choice of players, but also improves Nintendo's market competitiveness. These mobile games not only increase

brand awareness, but also increase user stickiness, allowing players to enjoy the Nintendo experience on a variety of devices.

3.3 Discussion

Successful aspects for digital transformation of Nintendo:

The success of Nintendo's digital transformation is inseparable from the collaboration of multiple departments within the company. First is the Nintendo EAD, which is responsible for entertainment analysis and development. This is the primary development department. Over 800 engineers and designers belong to the department. Each of the department's seven divisions is overseen by a group manager and designated producer. Nintendo IRD is another significant division inside the corporation. It is in charge of hardware and, more specifically, the engineering and technical elements of the development of Nintendo's portable and home gaming systems. Nintendo NBD is a hybrid development team with a number of different responsibilities. The team is mainly from Nintendo's Research and Development II, which is mainly responsible for porting and internal development of low-end hardware. The majority of Nintendo's network programming and server maintenance for both internal projects and numerous other external Nintendo software is handled by this department in coordination with Nintendo Network Services. These departments are all in charge of Nintendo's software, hardware and marketing. In short, these divisions have made important contributions to all aspects of Nintendo's digital transformation [15].

Something Nintendo has to improve:

Although Nintendo is a pioneer of the times in terms of game IP and gameplay, its hardware facilities have been one of the criticisms mentioned by players. Nintendo really can't compete with the other two tech companies, Microsoft and Sony, in terms of hardware. According to a demand survey report for Chinese players, the most important area for Nintendo to improve is the longer battery life of the console. Higher battery life allows players to focus on the game for longer. In addition, the problem with short battery life is that it requires a large amount of charging, which is obvious for the continuous wear and tear of the host battery. The battery life will only get worse and worse because of this, becoming an endless loop. So solving the battery life problem in the first place is key.

In addition, according to the survey results, the screen resolution of the host needs to be improved. Nintendo's console screen resolution is the worst of the three companies (Microsoft, Sony, Nintendo). Due to the weak functionality of the switch and the relatively weak hardware, third-party game masterpieces (Cyberpunk 2077, Grand Theft Auto5, Forza Horizon 5, Call of Duty...) cannot be launched on the Nintendo Switch platform. This has led to the fact that if players want to buy both Mario Kart and Cyberpunk 2077, they will need to buy a console for Switch or one of the consoles of Microsoft and Sony. If Nintendo wants to improve the game experience for players, it needs to consider developing more high-performance chip and hardware, rather than focusing more on game content and gameplay. Nintendo must find a balance between the creation of games and hardware.

4 Conclusion

Although Nintendo has made some progress in digitization, its main revenue still relies on traditional hardware sales. This puts the company under more pressure to perform when hardware sales decline. As a result, Nintendo needs to further expand its digital business, reduce its reliance on hardware sales, and invest more in the development of video game quality. For example, image performance, game content, and game system optimization. In addition, Nintendo's eShop interface and search function lacked an effective content categorization and recommendation system, making it difficult for users to find games.

Fortunately, though, Nintendo plans to release its next system by the end of March 2025—a sequel to the Nintendo Switch, which debuted eight years earlier. This may make Nintendo enter a new era. In short, Nintendo still has a long way to go, and in one day, it will become a special game company in the world.

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