

CONSOLE GENERATION SUSTAINABILITY

The decline in Sustainability of the Console Generation Cycle Model

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Abstract

E-Gaming is now more popular than ever, and the freedom of choice to play from a wide variety of game titles from different game genres, with a plethora of possible hardware choices for its consumers, ranging from consoles like the PS4 to assembled gaming PC to get the best performance from the game titles. The dominating gaming models, be it consoles or PC, still require consumers to update their hardware every five to seven years, making this model hardly sustainable compared to cloud gaming models where the consumer will not have to upgrade their hardware to play the same game titles in the years ahead. Here, we explore why consumer gamers still prefer to update their hardware and keep sustaining a traditional gaming model, focusing on console gaming. Through content and thematic analysis, we analyze the possible rationale for consumers to sustain the current status quo of home gaming and discuss their insights through the lens of sustainable and critical design. After a detailed analysis of what each of the ninth-generation consoles is offering the consumers, we will be experimenting if or not other services like the Stadia will affect the console market. The method used for this qualitative project is the 'content analysis of existing data', where we collect pre-existing content or data from online comments on social media, videos, pictures, etcetera. Through this research, we hope to discover whether the hardware being evolved for every new generation of consoles is approached by the consumers and how other cloud formats and low graphic consoles will affect the next generation of consoles.

Introduction

Video games have been a major form of entertainment since the early 1970s. Though they can be played on various platforms, one of the most recognized platforms on which they can be played is consoles. And to date, there have been eight generations of consoles released in the market. Later this year, the console markets will be flooded with the ninth generation of consoles for consumers to have a better gaming experience. The consoles we are considering for our study are the PlayStation 5 by Sony and Xbox Series X by Microsoft, as these are the ninth generation of consoles.

This paper presents an overview of whether or not the current console players are willing to upgrade to the next-generation consoles and what factors are playing a major role in their choice. In particular, we consider the following factors apart from the price, which will be considered in this research resolution, refresh rates, graphic processors, memory, storage, and et cetera. [GG1] we finally conclude by comparing how the next-generation consoles can keep up with new formats like the cloud gaming service Stadia by Google. Where in these formats, one can rent a game for comparatively much less and will not need to upgrade any hardware from time to time. Moreover, how other non-heavy graphic consoles like Nintendo will affect the Sony and Microsoft markets.

To assist in the compilation of this paper, a content analysis of online discussions about the next-generation consoles will be taken into consideration where we will consider the data from online comments gathered from social platforms like Ign, Youtube, Discord, Twitch, Instagram, et cetera. As consumers actively participate in these platforms to give their own opinion on the next-generation consoles and also try to compare them with each other to prove which one of them is a better option. Through this paper, we hope to find out what the future of the gaming industry will be and how hardware being evolved for every new generation of consoles is approached by consumers.

Related Works

The first related work did not specifically deal with our research's current state of the art, but Yang, Newman, and Forlizzi's "Making Sustainability Sustainable: Challenges in the design of eco-interaction technologies"[1] helps define our definition of sustainability. This work aims to posture that the current console generation cycle may no longer be sustainable after this next generation. Bonkers' "When second wave HCI meets third wave challenges"[2] also addresses problems with the current model relevant to our work. Daidj, Theirry's "Entering economic models of Game console manufacturers"[3] provides a reference for understanding the video game console market and how they affect each other in their "console wars." Based on Shea, Liu, Ngai, and Cui's "Cloud Gaming: architecture and performance"[4], it is our postulation that in the near future, cloud gaming will be able to provide an equal experience to consoles and act as a viable alternative. McFerrin's "Switch can break the Traditional Hardware Cycle and become Nintendo's iPhone"[5] features the analyst assessment that Nintendo will be the first to no longer depend on the selling of hardware every few years to sustain their brand and also provides another basis of comparison for us. We can see contrary to this research done by Liz Lee, "Game Console Market Set for a Leap in 2020"[6], stating how the console market sales will be in the coming years. Though PC Gaming has been widely appreciated by the esports community for a long time, the next-generation consoles can greatly affect this market with their equally powerful refresh rates(120 - 144Hz) and very quick response times, as by Matt Dixon.[7] There are consistent arguments regarding this, with all parties having their own egotistical mindsets regarding their preferred option. Nevertheless, when you compare the affordable next-generation consoles with triple-the-price PC with high-end graphic cards that produce the same output, we can consider a community of competitive gamers who might consider going with the consoles for a period. Based on Hoang Nguyen's "Who will buy the next generation of consoles from Sony and Microsoft?"[8] We can see how the console and game market numbers have increased from the start of the 2020 pandemic. We can relate this survey to our current study on how consumers will approach the next-generation console market. Their survey of 1000+ adults aged from 18 years to 40 years can be accessed from this document.[9]. Our work differs from each of these as it aims to understand the current upgrade cycle and postulate that this will be the last of the console generations, making way for a future defined by cloud gaming, similar to how both the music industry and film industry have begun to change.

Method

This paper's research portion aims to ask why or why not consumers are choosing to upgrade to the next generation of Sony and Microsoft consoles. We will identify consumer thoughts and feelings about this upgrade cycle through content analysis of relevant message boards on the platforms, including Reddit, social media, traditional media, Youtube, Twitch, Discord, and gaming websites. We aim to understand through this data the reasons for upgrading. Recurring themes thus far include brand loyalty, exclusive games, console-specific social ecosystems, and technical specifications. There are no interviews scheduled for this research, as we have decided that any responses by participants would more likely than not already be available in the sources mentioned. It is our hope that by analyzing these responses, certain patterns will emerge that can accurately portray whether or not the continuation of the generational model for hardware will be economically sustainable for the industry in the future.

Results

Through contextual analysis of several discussion boards pertaining to gamers planning to upgrade to the next generation of consoles, as well as several discussing the future of PC and cloud gaming, we were able to theme responses as follows: brand loyalty, availability of exclusives, hardware specifications of the consoles (resolution/size/storage), PC supporters, and cloud gaming advocates. An example of a “brand loyalty” as well as “exclusive” response was found in the Reddit forum titled, “These next-gen console specs are amazing,” where a user said, “I am fairly invested in Sony IPs at this point. I have had a ps2, PS3, and ps4. Backward compatibility and the Sony series will get me to buy a ps5 unless it is horrendously bad.” In the “What is the point of getting a console in 2020” forum, several interesting responses were included, “ If a Demon Souls Remastered is a launch title, I will buy it day one. Otherwise, it has been historically proven to wait a bit before buying a new console”, being particularly interesting for this research, as it speaks to the attractiveness of exclusives to consumers, as well as capturing the feelings of a large portion of console gamers, who see just as much benefit waiting for more console availability as those who are adamant day 1 adopter of the new platforms. In the forum “I am not buying the next-gen consoles,” “PC has the ultimate library, but it is still a PC and hence a pain in the ass, especially if you want to couch game, you either have to build a small form-factor PC that's powerful enough, then deal with the interface or how you are going to use a kb/m from the couch” was a great example of both the pros and cons many gamers face with PC as a platform. While it is infinitely customizable, it comes with a serious cost and convenience issues, explaining why consoles continue to hold such a large market share. Regarding the other alternative to the console cycle, cloud gaming with Google Stadia, our data indicated a strong push for gamers to head in that direction. Almost every response along the lines of “I believe the future of game streaming(well, not streaming subscription actually) services is on those that allow you to download and play the games on your device like Xbox game pass. The internet infrastructure just is not there yet” (Reddit: How do you see the next generation of consoles going?) The sentiment was made clear: technical limitations still exist that prevent cloud gaming from producing the same experience as consoles. Whether it is concerned about internet speeds or latency, one thing made clear through our research is that most gamers still believe that cloud gaming is still in its infancy but represents a desirable alternative to the console generation cycle.

Discussion

Sony Vs. Microsoft

Sony's PlayStation and Microsoft's Xbox are preparing to unveil their next-generation consoles in the Fall of 2020. Both the 9th generation consoles by Sony and Microsoft, when compared, have a few strengths and weaknesses over each other. Both of them have their own unique design. The PlayStation 5 loads games faster, a big positive in the gaming community. The Xbox Series X by Microsoft has better processing units which can boost up to 3.8 Gigahertz compared to the maximum boost of 3.5 Gigahertz processors on PlayStation 5. Moreover, the Xbox Series X graphic card, compared to Sony's PlayStation 5, shows better results on paper. However, according to the technical experts, the difference is very minute and cannot be noticed in the games as Sony's graphic processor has a unique architecture that will give an enhanced performance while playing any common titles available in both these console markets.

Size of Consoles

Both the ninth-generation consoles by Sony and Microsoft have their own unique design. The Sony's PlayStation 5 has a white exterior that wraps around a rounded black interior like a shell. At the same time, Microsoft's Xbox Series X is a large rectangular box. The dimensions of each of the consoles revealed during their promotion suggest that PlayStation 5 will be a larger device when compared with the Xbox Series X. While Sony's PlayStation 5 looks more artistic and futuristic in its design, Microsoft's Xbox Series X is designed to look more like a sleek Mini PC. Though the physical appearance of both the consoles has nothing to do with their ability to give a phenomenal gaming experience to the consumers, it seems that both the new generation consoles are comparatively bigger than their predecessors to accommodate these high-end specifications for gaming.

Exclusives

In the last generation console release, the exclusives offered by Sony and Microsoft played a key role in their market sales. Though Microsoft Xbox One had better specifications, its major drawback was that it could not provide consumers with exclusive AAA titles compared to Sony's PlayStation 4. This plays a key role in this industry as every gaming community looks forward to getting their hands on these titles and the consoles which can handle these game titles.

4K vs. 8K

The next generation consoles from Sony and Microsoft offer up to 8K resolution support with 120 frames per second and 120 Hertz refresh rate with the 4k resolution. Many consumers might argue that 8K is not much of a deciding factor that will influence their choice whether or not to buy next-generation consoles. Even though these high-resolution screens may not be accessed by much of the consumer market, the fact that both Sony's PlayStation and Microsoft's Xbox future-proofing their next-generation consoles are something that should be considered by the consumers when comparing with other E-Gaming models like Google Stadia. Moreover, most consumers even point out that they need a better quality of life and accessibility features like Quick Resume rather than overly upgrading the resolution, which is already visually crisp enough with the 4K mode.

Storage Capacity

The next-generation consoles from Sony and Microsoft take different approaches toward their storage technology. Both the consoles offer Solid State Drives, which can be extended up to a limit. Sony's PlayStation 5 offers 825 GB of storage space, whereas the Microsoft Xbox Series X offers 1TB of storage. Though both the consoles can upgrade their storage in the future, many consumers disliked that Sony PlayStation 5 is not coming with a 1TB storage. Nevertheless, Sony's approach to the shortage is reasonable as they offer a modified SSD architecture for better game loading speeds and low hardware temperatures for premium performance gaming.

Cloud gaming vs. Consoles

It is more like a comparison between next-generation consoles and the next-generation gaming models. Cloud gaming is the new model in the E-Gaming community, and it has a few benefits and drawbacks over the next generation consoles from Sony and Microsoft. The benefit is that it does not need customers to upgrade their hardware and play game titles on their existing hardware by just getting a subscription or renting particular game titles. Moreover, consumers can game on the go, as online services are more portable than consoles. The two leading cloud gaming services are Google Stadia and Amazon Luna. However, they also have a few drawbacks compared to the consoles, as they need a much better and stable internet connection to game online. The lack of exclusive game titles is another main drawback that results in not being able to attract a large community of consumers who choose the consoles for this reason alone.

Console vs. PC

The primary purpose of a console is to boot up a game still and get straight into the action with zero effort to install different launchers for individual game titles. While a PC, on the other hand, needs individual launchers for each game. Also, the price comparison between the Console and PCs is huge, where a consumer needs to spend at least thrice or quadruple the amount they are spending on a console to experience the same scale of performance from their PCs. Though the upgradability of these venerable machines, compared with the next generation consoles, is better for the period, it could be more cost-efficient as a consumer needs to spend twice the amount of a new console on upgrading their hardware every two years. A few game titles are exclusive to consoles that are not accessible to PC players, which also plays a key role in console market sales.

Limitations And Future Work

Limitations:

This paper analyses the possible rationale of the consumers who will sustain the current status quo of home gaming and discuss their insights through the lens of sustainable and critical design. We conclude using the content analysis research method, where our group collects the data from the comment logs available on social media sites like blogs, youtube, and Instagram, as these comment sections have opinions from less than 10 percent of consumers in the market. Even Though we may not get an opinion from the majority of the console/gaming market community, we consider the thoughts and perspectives shared by a small percentage of users who share their opinions on the social media sites.

Future Work:

This paper's future will mainly focus on how we can continue or expand our current discussion using other research methods. One of the research methods we consider to expand our study is by using the Interviews with human subjects by asking individuals prefabricated questionnaires to get a better understanding of their ideas and perspectives on our discussion of how sustainable is the console generation cycle model when compared with other new e-gaming models like cloud gaming and other pre existing models like a PC and Nintendo consoles.

Conclusion

We sought to discern why consumers were choosing to upgrade to the next generation of consoles and whether or not it is a sustainable model for the game industry's future. After reading through hundreds of user responses on internet discussion boards, we conclude that for this next generation, it is. Whether it be for brand loyalty, exclusive games, social ecosystems, or convenience, we predict that the PS5 and Xbox Series will match or exceed their predecessors' success. The reasons for consoles' popularity over the PC platform remain largely unchanged from the last gen, as computers are still more expensive, more complicated, and far less populated than their console counterparts. As such, we found no evidence in our research that would change shortly. However, the new Google Stadia cloud gaming network, Microsoft's Xcloud, and Sony's PSnow provide an interesting alternative. By offering subscription cloud-based gaming to consumers, the game industry recognizes streaming's success in traditional music and film/television mediums. However, the current technical limitations of internet speeds and the small install base of 5G networks prevent that from being an equal experience for gamers. We predict this will only sometimes be the case, and we would love to follow up in several years with this research once the technology catches up to the concept.

Acknowledgments

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