

Meta's Metaverse Platform Design in the Pre-launch and Ignition Life Stage

Song, Minzheong

Assistant Professor, Department of Media Communication & Advertising, Hansei University, Korea

mzsong@hansei.ac.kr

Abstract

We look at the initial stage of Meta (previous Facebook)'s new metaverse platform and investigate its platform design in pre-launch and ignition life stage. From the Rocket Model (RM)'s theoretical logic, the results reveal that Meta firstly focuses on investing in key content developers by acquiring virtual reality (VR), video, music content firms and offering production support platform of the augmented reality (AR) content, 'Spark AR' last three years (2019~2021) for attracting high-potential developers and users. In terms of three matching criteria, Meta develops an Artificial Intelligence (AI) powered translation software, partners with Microsoft (MS) for cloud computing and AI, and develops an AI platform for realistic avatar, MyoSuite. In 'connect' function, Meta curates the game concept submitted by game developers, welcomes other game and SNS based metaverse apps, and expands Horizon Worlds (HW) on VR devices to PCs and mobile devices.

In 'transact' function, Meta offers 'HW Creator Funding' program for metaverse, launches the first commercialized Meta Avatar Store on Meta's conventional SNS and Messaging apps by inviting all fashion creators to design and sell clothing in this store. Meta also launches an initial test of non-fungible token (NFT) display on Instagram and expands it to Facebook in the US. Lastly, regarding optimization, especially in the face of recent data privacy issues that have adversely affected corporate key performance indicators (KPIs), Meta assures not to collect any new data and to make its privacy policy easier to understand and update its terms of service more user friendly.

Keywords: *Platform design, Pre-launch Life Stage, Ignition Life Stage, Metaverse, Meta*

1. Introduction

Facebook changed its name to Meta in October 2021, by declaring a new design of social media platform enabled by the metaverse technology. Now, Meta makes money by auctioning off space for ads within Facebook and Instagram users' feeds and stories. Advertising revenue represented 98% of Meta's US\$86bn revenue in 2020 and the remaining 2% came mainly from its non-advertising business, the main parts are from selling hardware. Oculus is a virtual reality (VR) headset acquired by Meta in 2014. With Oculus Quest 2, Meta's market share has been 39% in 2020 [1].

Meta's newest virtual-reality headset clocks in at a huge price of US\$1,499.99. That's a significant price jump from its previous Meta Quest 2 for US\$399.99. That price hike, coupled with Meta's insistence

Manuscript Received: September. 15, 2022 / Revised: September. 17, 2022 / Accepted: September. 19, 2022

Corresponding Author: mzsong@hansei.ac.kr

Tel: +82-31-450-5028, Fax: +82-31-450-5187

Assistant Professor, Department of Media Communication & Advertising, Hansei University, Korea

throughout the virtual event that the company envisioned the metaverse as a “next-generation social platform” accessible to everyone, sort of feels like an obvious contradiction. Meta announced the plan to open ‘Horizon Worlds’ within Meta’s metaverse, to mobile and desktop users, so people without a headset will be able to access the virtual world [2].

When unveiling the Quest Pro VR headset at Meta Connect 2022, Meta was joined by Microsoft CEO to announce that Microsoft (MS) Teams and Office 365 will be available on the Quest Pro. Aspects of the cloud computing service, MS Azure will also enable businesses to integrate device management and security with Quest Pro. Both companies are looking to bring Xbox’s cloud-based gaming service to the VR headset. These partnerships mean that VR headsets as the primary device used to interact with the metaverse, would be as transformative as other era-defining hardware like PC, smartphone, and cloud computing [3].

In fact, Meta’s core metaverse product, Horizon Worlds is gaining little consumer interest according to internal documents of Meta. Horizon Worlds has only attracted less than 200,000 users as of October 2022. Evidently, Meta is having issues convincing its more than 3.6 billion (bn) global monthly users across Facebook, Instagram, Whatsapp and Messenger to join the metaverse. Thus far, the primary purchase of the Meta Quest is gaming, but the issue surrounding motion sickness and disorientation will likely prevent many gamers from using the headset for long [4].

However, Meta’s vision is to create a whole ecosystem of devices and software focusing on augmented reality (AR) and VR because Meta’s current issue is a weaker position among younger users. Facebook is still an important social network service (SNS) application (app) for younger users thanks to its Instagram, but its position is not so dominant as among the older population. In the US, the most popular SNS among teenagers is Snapchat, followed by Instagram. Meta is aware of this danger and tries to plug this hole by aggressively copying features of other successful apps among teenagers. Meta is heavily investing in several opportunities for young users, like AR and VR with its leadership of Oculus hardware and its development tools. Oculus starts to gain market share, but its revenue is still relatively small compared to Facebook’s advertising revenue. However, it is expected to be a viable platform with an ecosystem around it. This is a risky long-term bet, but AR and VR fits into Meta’s focus on connecting people and helping them communicate with each other [5]. This study aims to look at Meta’s new value positioning to metaverse world and to investigate its new platform design in its pre-launch and ignition life stage based on the theory of the ‘Rocket Model (RM).’

2. Literature Review and Theoretical Background

2.1 Previous Literature Review

There is a typology analysis on cultural leisure based metaverse and a study on its key features. The three types of cultural leisure metaverse are classified into game-based, social media-based, and life & industry-based metaverse, and the case analysis by type confirmed the current level of metaverse development and considerations in future metaverse development [6].

Based on three components of the business model (BM), value creation, value proposition and value capture, Meta’s changes in its BM were investigated and it adopted an in-depth case study research method. The process included using a structured approach to collect 153 data points including academic studies and publicly available information, followed by qualitative content analysis. Even if Meta’s BM evolves into the innovation phase, as the current changes appear very futuristic, it is estimated that the core elements of the BM will change incrementally. The investigation indicates that the underlying logic of the straightforward communicative efforts primarily serves two purposes: To improve the external perception of the company and to disseminate an internal change signal within the organization [7].

Table 1. Summary of previous research results

Year	Authors	Key points
2021	S.Y. Ko, H.K. Chung, J.I. Kim, and Y.T. Shin	Three types of cultural leisure metaverse: Game-based, social media-based, and life & industry-based metaverse
2022	S. Kraus, D.K. Kanbach, P.M. Krysta, M.M. Steinhoff, and N. Tomini	Meta's purposes to change the company name and to evolve its business models: To improve the external perception of the company and to disseminate an internal change signal within the organization

2.2 Theoretical Background

The 'Rocket Model (RM)' has been primarily formulated for developing ventures' platform in exchange for mutually co-operative labor or service and the primary merit of this model is to design the new business model in response to rapid technological change [8]. The benefits of the RM are exchanging the quality-based technology, product, service, increasing intercommunication with trusted and fast sources, establishing strong network effects in platform, and cooperating among members of platform. The RM is a high-level functional model of platform businesses based on the core activities of company serving multi-sided markets. Platforms need to attract critical mass of customers on each side of the market, match them, to connect, allow them to transact, and repeatedly optimize their own processes [9].

The RM is a high-level functional model of platform business based on the core activities of platforms serving multisided markets. At launch of the rocket, the platform attracts a critical mass of customers on both sides of the market in the 'attract' function. This only focuses on acquiring new customers, but the attraction of each side on a platform is different from the acquisition of clients in a traditional business. Consumers provides valuable feedback and ratings while producers or developers are the key to the experience enabled by the platform, for they provide their content, room, car, etc. through the multi-sided platform.

In the 'match' function, the ability to filter and present customers with the right choices creates value. For effective matching, results must be relevant, timely and filtered for each customer's needs. This function plays a key role in helping the platform maximize positive network effects like Airbnb involving presenting guests with the right properties in the right locations at the right time. Maximizing choices is not the right function. However, finding the right balance among many choices is not easy. Therefore, needs should be personalized.

In the 'connect' function, the participants need to exchange additional information with their counterparty before moving on to the transaction. This function can minimize the risk of 'leakages' which means that clients decide to transact outside the platform. If the platform does not add enough value, it will be bypassed. Then, it can't recapture the value it created in matching people. A good example is eBay when buyers ask specific questions to sellers before buying a product. The platform's additional interaction can increase the trust of the parties and reduce the 'asymmetry of information' that may get in the way of the transaction.

The 'transact' function is at the heart of the platform's value proposition. A transaction can take many forms like a product (eBay, Alibaba), a rental contract (Airbnb, Uber), a message post (Instagram, Facebook). In many cases of digital platforms, it is information rather than money, that is exchanged with platform and its participants. A sale on eBay, a hire on LinkedIn, a date on Match.com, and a click on a Google sponsored ad. are examples of the core transactions supported by other interactions enabling the overall value proposition.

The last 'optimize' function is a critical process for continuous enhancement of the platform. It is central to the data-driven nature of these businesses. Given the dynamic nature of platform business, the data driven optimization can allow platform businesses to find the right balance between all sides of the market and to optimize all the matching, connecting and transacting functions of the platform. Google's search algorithm is constantly optimized to ensure the best relevant search results. The concept of "big data" is core to most online platforms and continuous monitoring of potential bottlenecks can unlock growth in near real time [10].

3. Research Design

With the continuous development of the digital age, the distance from the virtual concept and reality is shrinking. Metaverse originated from the game and currently, many venture capital companies have called it the next generation of Internet. This is expected to bring the innovation of the virtual world, promote the game content, community, education, commodity trading, artificial intelligence (AI), VR/AR, blockchain, and so on [11]. Meta's metaverse creation is due to its SNS platform businesses (Facebook, Instagram, WhatsApp) confronting market saturation. The new named company focuses on aiming "to bring the metaverse to life and help people connect, find communities and grow businesses." According to Meta, the metaverse will resemble a mix of online social experiences in a three-dimensional (3D) space or projected into the real world [12].

The RM's five functions to attract, match, connect, transact, and optimize, can be examined across whole life stages of platforms. There are four rocket life stages of a platform: Pre-launch, when the platform is designed and built prior to its launch; ignition, when the platform is tested and launched; scaling-up, when building a critical mass of participants on all sides of the platform; maturity, while defending against new entrants and existing competitors [13, 14].

Meta is now known as the overarching company that runs Facebook, Whatsapp, Instagram, and Oculus among others. According to Meta, VR revenue had grown so substantially that they will now need to count this revenue separately and divide it into two categories. One category is the family of apps as SNS and messaging services mentioned above, and the second category is its Reality Labs products featuring their VR and AR technology. This change is related to Meta's CEO's expectation about the metaverse to reach a population of one billion people within the next 10 years. Therefore, this rebranding is to support his vision of building a metaverse platform ecosystem to meet that demand. Users will be able to design their own avatars, decorate their own virtual space, meet with people, and even attend virtual concerts and events all from the comfort of their own homes. The VR based metaverse world is a great opportunity for Meta and the new rebranding signifies their intentions, because current social media has been a crowded space with the rise of TikTok capturing younger audiences. Meta announced to plan on spending US\$10bil. in 2022 on this bet [15].

As shown in Figure 1, Meta's metaverse platform is undergoing stages 1 and 2 of the 4 rocket life stages. Accordingly, the research framework of this study aims to review the five RM functions in two stages.

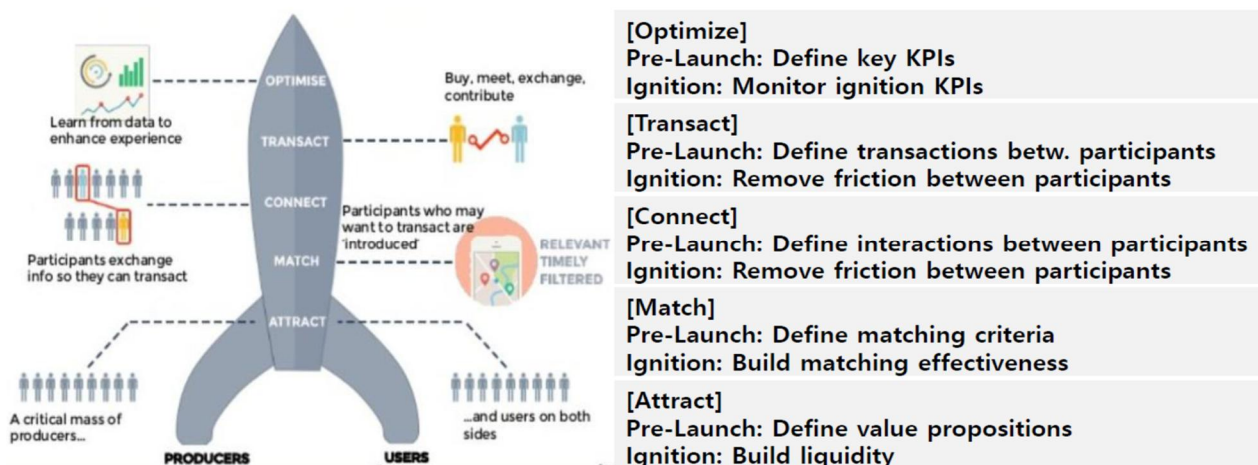


Figure 1. Research Framework

Along with Figure 1, the research questions are as follows:

- 1) Who are the key participants and what tools are provided in platforms?
- 2) How are the key matching criteria (relevant/timely/filtered) work?
- 3) How do the platform participants interact (directly or indirectly)?
- 4) What are the transaction types (centralized or decentralized) to monetize?
- 5) How are data and key performance indicators (KPIs) managed by the platform?

Before this study, we searched the previous literatures dealing with Meta as a new metaverse platform between 2021 and 2022 after Facebook has been changed into Meta in 2021. It is difficult to draw a line between the two rocket life stages of pre-launch and ignition, so the five functions of the RM in the two stages are analyzed in one basket. During the pre-launch and ignition life stages of Meta's metaverse platforms from 2014 (Year of Oculus acquisition) to 2021 (Year of new name, Meta), this study investigates Meta's five RM functions. For this, we searched business activities of Meta by digging financial, market data, company documents and press releases during this period.

4. Results

4.1 Attraction: Key participants and Tools

New market can participants' needs and compete against other offers. Therefore, Meta acquired VR device company, Oculus in 2014 and continued to invest in all directions throughout the value chain of VR and AR industry including devices, platforms, and content. As shown in Table 2, as a preliminary step, Facebook acquired several game production companies and tried to identify key participants involved with the platform. Beat Games, which was acquired by Facebook in 2019, is a member of Oculus Studio and is qualified to develop its own game. Its hit game is 'Beat Saber.' In same year, after the acquisition of PlayGiga, Oculus Studio tried to develop a plan to create streaming games under 5G together with telecommunication companies. Sanzaru Games, a first member of Oculus Studio since 2016, which launched already four games in Oculus platform before M&A, started to produce the VR game 'Asgard's anger' in 2020. Video game developer, Ready At Dawn Studios which is developer of VR game series 'Lone Echo' and console game 'The Order: 1888,' is entitled to continue its independent development after being acquired by Oculus Studio in 2020. In 2021, Oculus Studio acquired VR game developers like Downpour Interactive which developed multi player military simulator 'Onward', BigBox VR which launched VR game 'Population: One,' and Facebook Gaming acquired Unit 2 Games, where users can create games without using code. Only in the last three years, Meta has acquired seven game companies, Beat Games, PlayGiga, Sanzaru Games, Ready At Dawn Studios, Downpour Interactive, BigBox VR, and Unit 2 Games which are creating their own development games to run on Oculus Quest [16].

Table 2. Facebook's VR/AR business and investment (Mar. 2014 ~ July 2021)

Year/Month	Key contents
2014/Mar.	M&A of device manufacturer, Oculus
2016/Mar.	Launch of VR device, 'Oculus Rift'
2017/Apr.	Launch of AR social platform, 'Facebook Space' (now 'Horizon')
2017/Aug.	M&A of FayetteqAG for offering AR in streaming
2018/May	Launch of VR device, 'Oculus Go'
2018/Aug.	M&A of Vidpresso for producing interactive video
2019/May	Launch of VR devices, 'Oculus Rift S' and 'Oculus Quest'
2019/Aug.	Opening the AR content production tool platform 'Spark AR'
2019/Sep.	M&A of neural interface company, CTRL (Control)-labs

2019/Nov.	Facebook's M&A of VR game & music production company, Beat Games
2019/Dec.	Oculus Studio's M&A of Madrid based cloud game startup, PlayGiga
2020/Feb.	Oculus Studio's M&A of VR game development studio, Sanzaru Games
2020/Jun.	Oculus Studio's M&A of video game developer, Ready At Dawn Studios
2020/Oct.	Launch of VR device, 'Oculus Quest 2'
2021/Mar.	Presenting Next AR glass vision and introducing new AR wristband
2021/Apr.	Oculus Studio's M&A of Downpour Interactive
2021/Jun.	Oculus Studio's M&A of BigBox VR
2021/Jun.	Facebook Gaming's M&A of Unit 2 Games
2021/Jul.	Proclaiming the transformation into metaverse company

After attracting the target participants identified during the pre-launch stage, the focus on one side first is one way of breaking the deadlock of 'no producers and no consumers' [13, 14]. Before rebranding of Meta, Facebook opened the AR content production tool platform 'Spark AR' in 2019 and this tool is helpful to attract more content creators for repeating the value proposition for participants to achieve platform fit. Competitors like TikTok, Snapchat, and NaverZ's Zepeto also introduced various AR content production tools such as Effect House, Lens Studio, and Creator Studio, respectively.

4.2 Match: Relevant, Timely, and Filtered

Matching is a platform-specific activity with three criteria, 'relevant' 'timely' and 'filtered' which need to maximize liquidity. Relevance refers to the matching quality and 'timely' does not always mean immediately, when participants behavior is well understood [13, 14]. Meta blended its data and AI and announced to create translation software working globally because the ability to communicate with anyone in any language is a super matching quality. Even if global languages like English, Mandarin, and Spanish are well catered to by current translation tools, 20% of the people don't speak languages covered by these. So, Meta tried to deploy machine learning (ML) in two areas. The first focus is to build AI models that can learn to translate language using fewer training examples. The second focus is 'Universal Speech Translator' aiming to build systems that directly translate speech in real-time from one language to another without the need for a written component to serve as an intermediary [17].

After this announcement, Meta had a timely partnership with MS for selecting Azure as a strategic cloud provider to accelerate its own AI research and development (R&D) [18]. Meta AI is a direct speech-to-speech translation (S2ST) approach, which does not rely on text generation as an intermediate step, to enable faster inference and support translation between unwritten languages. The method outperforms previous approaches and is the first direct S2ST system trained on real-world open-sourced audio data instead of synthetic audio for multiple language pairs [19].

Lastly, in terms of 'filtered' function, Meta needs to develop realistic avatar for metaverse. Current offered avatars on metaverse service platforms like Roblox, Zepeto look like cartoons or semi-realistic and don't move as fluidly as humans do in real life. Meta saw the key to improving these avatars in learning more about the bones, muscles and joints that make up the human body's musculoskeletal system. So, Meta developed a new embodied AI platform called MyoSuite, that applies ML to biomechanical control problems by unifying motor and neural intelligence. It creates realistic musculoskeletal models more efficiently than existing ones. Meta focuses on creating more-realistic virtual human rather than semi-realistic avatar by open-sourcing a set of comprehensive benchmarks for the ML community to enable continued research in this area [20].

4.3 Connect: Direct or Indirect

Platforms need to enable peer-to-peer (P2P) connection between platform participants after matching,

because this interaction can drive the next core transaction. There should be the relevant rules and norms for optimizing positive interaction [13, 14]. For Meta, the current VR content store, 'Oculus Store' following Apple's hardware driven platform ecosystem strategy is a prototype for new metaverse platforms. So, over the last year, Meta rolled out two platforms for VR device users in beta version, Horizon Worlds (HW) and Horizon Workrooms (HWR). HW allows users to invite their friends and HWR does the same but purely for professional environments. Unlike previous Oculus stores where developers can publish an app complying with their guidelines, Meta Quest's developers can have a curation by submitting their game concept first before publishing. So, the VR content is more attractive to VR users and from the launch of 2019 to 3rd quarter of 2020, Meta Quest sales per quarter of Oculus Quest Store amounted to US\$25mn., more than tripled compared to the same period of Oculus Rift sales. In addition, Oculus Quest Store allows other metaverse service apps like Roblox, Minecraft, and so on. So, the success of the Oculus Quest ecosystem is due to the direct curation and partnership [16].

Meta announced to launch 'Meta Avatars Store' on Instagram, Facebook, and Messenger where users can dress their avatars in designer threads in June 2022 firstly in the US, Canada, Thailand, and Mexico. This store opens not only outfits from high-end fashion brands with partnerships of Balenciaga, Prada, and Thom Browne. So, Meta Avatars Store firstly opens outfits from high-end fashion brands by partnering with high fashion companies and offers hundreds of free outfits simultaneously. Meta's basic norm is to allow all fashion creators to design and sell clothing. To make an Avatar on Instagram, users can tap on their profile picture, go to edit profile, and then navigate to the "create avatar" option at the top [21].

Meta also announced at the company's annual Connect conference in October 2022 that HW will soon be available to those without a Rift or Oculus headset. It means Meta is working on an adapted version of the VR game for PC and mobile devices. The reason why the number of HW users is not increasing is that it was only available on VR headsets. The virtual world game is currently only available on the Oculus Rift S and Oculus Quest 2, using the headsets' 3D motion capture technology and hand-held motion controllers. The CEO also shared that HW has tapped the YouTube VR team for new in-game social innovations. Additionally, the game is rolling out its next generation of avatars, offering players more options for customization [22].

4.4 Transact: Centralized or Decentralized

The goal of platforms is to maximize the number of value-adding core transaction and it should support the direct or indirect interaction in the 'connect' function. In the ignition stage, the key focus is to test the proof of the prototype platform. Platform liquidity is a proxy for activity on the platform and how network effects are building. A freemium (Free + premium) model can be at launch for minimizing friction while the platform is subscale. So, building liquidity and network effects are more important priorities than monetization at the ignition stage. After this priority grows network effect, monetization experiment is useful [13, 14].

Meta's moving fast into the next stage for monetizing the metaverse service with new creator funding option being designed to better incentivize user contributions to its virtual worlds. Meta's US\$10 million (mn) HW Creator Funding program first launched in October 2021. HW is Meta's VR sandbox, where creators can build their own immersive experiences and they'll have another means of monetizing those efforts. Meta wants to reward the people doing awesome work in HW, even if the bonuses will be focused on specific elements that Meta's looking to build on within the VR environment. That could help Meta advance its HW offerings faster, making VR a more engaging and immersive element [23].

'Meta Avatars Store' is the first commercialized service launch on Meta's Instagram, Facebook, and Messenger for the future metaverse business amid a top-down rebrand and restructuring of the entire organization with Oculus Quest2 becoming Meta Quest2 accompanied by the promise of a way to use the

headset without a Facebook account. Before the launch of Meta Avatars Store, Meta replaced its Oculus avatars with new Meta avatar development tools and started using the new avatars across its Horizon network of worlds and apps in beta version [24]. In Oculus Quest Store, already the game based metaverse platforms like Roblox that do not use VR, and SNS based metaverse platforms like Zepeto which has grown rapidly mainly on mobile [25]. It means, Meta's real rivals are Google's Android and Apple's iOS, not the game and SNS based metaverse service platforms. So, Meta's metaverse ecosystem is a marketplace selling Zepeto or Roblox's products as well [26].

A decentralized transaction type in the 'transact' function is non-fungible token (NFT). Meta's launching a pilot program enabling creators to sell virtual items within their VR worlds is related to NFT. People will be looking to spend on items that provide utility, like in-world tools that enhance their experience, or cosmetics, like avatar clothing, that will help them customize their look. After launching an initial test of NFT display options on Instagram in May 2022, Meta expands the test pool for the option, while it also plans to bring NFT display to Facebook as well, starting with a small group of the US creators firstly. NFTs remain a questionable element, with some viewing them as the future of digital collaboration and community, and others seeing them as a good revenue stream with limited value. The market for digital assets is set to increase, in the form of avatar clothing, in-game items, virtual objects, etc. [27].

4.5 Optimize: KPIs and Data Management

In the ignition stage, several focus areas should be monitored. Those are related to achieving platform fit, creating liquidity, clearing interaction and core transaction bottlenecks, and raising capital, which are KPIs in industry-specific terms [14]. In terms of clearing core interaction bottlenecks, Facebook has been facing public relations (PRs) battles like data issue including recent whistleblower coming forward with leaked documents outlining the toxic business practices and evidence of the long-term negative impact which the platform will have on the public. Some people doubt, rebranding of Meta could be to distract the public from what is going on behind closed doors. There is a negative reaction from industry experts. A name change doesn't erase the systemic issues plaguing Facebook. Those issues still occupy Meta and hinder core interaction [15].

Meta agreed to pay US\$90 mn to settle a privacy lawsuit that has been since 2012. This fight was caused by Facebook's use of cookies and a proprietary browser plug-in in 2010 and 2011 to track users after they had completely logged off the social network. Even if users had to agree to being tracked while they were logged in, that tracking must end upon log-out, according to the end-user licensing agreement. Meta also lost its appeal to have Cambridge Analytica data lawsuit filed by the Office of Australian Information Commissioner (OAIC) thrown out. For two years, the lawsuit was held up by Meta as it attempted to claim through submissions that it does not conduct business nor collect personal information in Australia, which are requirements for an entity to be sued under the country's privacy laws. These submissions were rejected, with the Federal Court full bench labelling Meta's argument that Facebook acted as an overseas website providing data to an Australian device when requested to do so as being out of touch with reality. The OAIC looks to accuse Meta of breaching the privacy of over 300,000 Australians whose data were caught up in the Cambridge Analytica scandal, which saw the data of millions of Facebook users harvested globally by Cambridge Analytica without their consent [28].

So, in terms of data management, Meta's first step to use data is towards consent-led data strategies such as embracing first-party data and the phasing out of third-party cookies. One month Before launching Meta Avatars Store, Meta assured that it's not collecting any new data, but wants to make its privacy policy easier to understand. The updated policy, formerly referred to as its data policy, now provides examples of what information is collected, and how it is used, shared, retained, and transferred, including with the type of third

parties. New controls to manage who can view a post and the topic users want to see ads about has also been included. Meta also used illustrations, a video, and a table to present the information. The goal with this update is to be clear about Meta's data practices. The updated privacy policy covers Facebook, Instagram, Messenger, Boomerang, Oculus, and other Meta products, but it does not cover WhatsApp, Workplace, Free Basics, Messenger Kids, or the use of Quest devices without a Facebook account, which have their own privacy policies. In addition, Meta also updated its terms of service, covering when Meta may terminate accounts and additional details about what happens when a content is deleted. Meta has begun rolling out notifications on Facebook, Instagram, and Messenger alerting users about the update ahead of rule changes taking effect on July 26, 2022.

5. Conclusion

The results of this study are summarized in Table 3. In 'attract' function, Meta focused on investing in key participants by acquiring VR, video, music content firms from 2019 to 2021 and on offering production support platform of AR content, Spark AR in August 2019, targeting high-potential developers. In 'match' function, Meta developed an AI powered translation software in February, partnered with MS for cloud computing and AI in May, and developed an AI platform for realistic Avatar, MyoSuite in May 2022. In 'connect' function, Meta curated the game concept submitted by game developers and welcomed other game and SNS based metaverse service apps such as Roblox and Zepeto in Oculus Store in October 2021. Meta also announced to expand HW on current VR devices to PCs and mobile devices in October 2022. In the 'transact' function, Meta offered 'HW Creator Funding' program for the virtual world in October 2021 and launched the first commercialized Meta Avatar Store on Meta's Instagram, Facebook, and Messenger with fashion content in June 2022. Meta invited all fashion creators to design and sell clothing in this store. Meta launched an initial test of NFT display options on Instagram in May and announced to bring NFT display to Facebook firstly in the US in June 2022. Lastly, in 'optimize' function, Meta announced not to collect any new data, to make its privacy policy easier to understand, and to update its terms of service more user friendly in May and to make them effective in July 2022.

Table 3. Summary of Results

Functions in Pre-launch/Ignition	Key Results
1. Attraction: Partnerships & tools	- Acquiring seven key content producers like Beat Games (2019~2021) - Offering AR content production support platform, Spark AR (Aug. 2019)
2. Match: Relevant, timey, & filtered	- Developing an AI powered translation software (Feb. 2022) - Partnering with Microsoft for cloud computing and AI (May 2022) - Developing an AI platform for realistic Avatar, MyoSuite (May 2022)
3. Connect: Direct or indirect	- Curating the game concept submitted by game developers (Oct.2021) - Welcoming other game & SNS based metaverse apps like Roblox and Zepeto in Oculus Store (Oct.2021) - Expanding HW on VR devices to PCs & mobile devices (Plan, Oct. 2022)
4. Transact: Centralized or decentralized	- Offering 'HW Creator Funding' program for the virtual world (Oct. 2021) - Launching the first commercialized Meta Avatar Store on Meta's Instagram, Facebook, and Messenger (Fashion content firstly, Jun. 2022) - Launching an initial test of NFT display options on Instagram (May 2022) and bringing NFT display to Facebook firstly in the US (Plan, Jun. 2022)
5. Optimize: KPI and data management	- Assuring no data collection, easier privacy policy (announcement in May 2022 and effective in July 2022)

In conclusion, Meta practiced and expanded these five functions of the RM in the pre-launch and ignition stages of its new metaverse platform design. Meta has firstly focused on the producer side of both platforms in the pre-launch life stage, just like the previous platform business experiences. It is very important to attract the one side first. Attracting both sides simultaneously is really challenging. Therefore, in the ignition stage, Meta started to focus on meshed communities by curating the game developers, welcoming other metaverse service apps and expanding HW's hardware to PCs and mobile devices. Moreover, to link 'connect' function to 'transact' function, Meta offered the fund for creators and invited all fashion creators on the first commercialized Meta Avatar Store for fashion industry. This overlap of these roles is very strategic and useful in the initial stage of the new metaverse platform, because a new platform participants will add value to the platform both as a professional producers and amateur users creating user generated content (UGC).

This paper has a limitation in dealing with a short period for investigating Meta's metaverse platform design. However, it is meaningful to be aware how global Internet giant, Meta is trying to build a new platform ecosystem based on the existing platforms such as Instagram and Facebook, not from the beginning. Therefore, it is expected that subsequent papers will analyze the metaverse business in more depth after Meta shows some business progress.

Acknowledgement

This work was supported by Hansei University Research Fund of 2022.

References

- [1] Techspot, "Oculus device sales estimated at nearly 7M units in 2021," <https://www.techspot.com/news/92833-oculus-device-sales-estimated-nearly-7m-units-2021.html>, Jan. 3, 2022.
- [2] T. Basu, "Meta is desperately trying to make the metaverse happen: Will web access and avatar legs be enough?" MIT Technology Review, <https://www.technologyreview.com/2022/10/11/1061144/metaverse-announcements-meta-connect-legs/>, Oct. 11, 2022.
- [3] N. Rossolillo, "Zuckerberg's Metaverse Bet Is More Than Experimental - It's Key to Meta's Survival," <https://www.nasdaq.com/articles/zuckerbergs-metaverse-bet-is-more-than-experimental-its-key-to-metas-survival>, Oct. 21, 2022.
- [4] A. Heath, "Meta's flagship metaverse app is too buggy and employees are barely using it, says exec in charge," <https://www.theverge.com/2022/10/6/23391895/meta-facebook-horizon-worlds-vr-social-network-too-buggy-leaked-memo>, Oct. 6, 2022.
- [5] Kamilfranek, "How Facebook Makes Money: Business Model Explained," <https://www.kamilfranek.com/how-facebook-makes-money-business-model-explained/>, Retrieved on November 16, 2021.
- [6] S.Y. Ko, H.K. Chung, J.I. Kim, and Y.T. Shin, "A Study on the Typology and Advancement of Cultural Leisure-Based Metaverse," *KIPS Transactions on Software and Data Engineering (KTSDE)*, Vol.10, No.8 pp.331-338, June 2021. DOI: <https://doi.org/10.3745/KTSDE.2021.10.8.331>.
- [7] S. Kraus, D.K. Kanbach, P.M. Krysta, M.M. Steinhoff, and N. Tomini, "Facebook and the creation of the metaverse: radical business model innovation or incremental transformation?" *International Journal of Entrepreneurial Behavior & Research*, January 2022. DOI: <https://doi.org/10.1108/IJEBR-12-2021-0984>.
- [8] M.Z. Song, "A Study on the Business Model of a Fan Community Platform 'Weverse'," *International Journal of Advanced Smart Convergence (IJASC)*, Vol.10 No.4, pp. 172-182, December 2021. DOI: <http://dx.doi.org/10.7236/IJASC.2021.10.4.172>.
- [9] Launchworks, The Rocket Model for digital platforms, <https://www.launchworks.co/insights/the-rocket-model-for-digital-platforms/>, Retrieved on June 20, 2022.
- [10] L.C. Reiller and B. Reillier, "Platforms as business model," in *Platform Strategy*, Routledge, London and New York, pp. 41-56, 2017.

- [11] J. Huang, P. Sun, and W. Zhang, "Analysis of the Future Prospects for the Metaverse, Advances in Economics, Business and Management Research," Vol. 648, in *Proceedings of the 2022 7th International Conference on Financial Innovation and Economic Development (ICFIED 2022)*, pp.1899-1904, 2022.
- [12] Meta, "The Facebook company is now Meta", Meta Press Release, <https://about.fb.com/news/2021/10/facebook-company-is-now-meta/>, October 28, 2021.
- [13] L.C. Reiller and B. Reillier, "Life stages of platform: Design," in *Platform Strategy*, Routledge, London and New York, pp. 73-89, 2017.
- [14] L.C. Reiller and B. Reillier, "Platform ignition: Proving the concept," in *Platform Strategy*, Routledge, London and New York, pp. 91-103, 2017.
- [15] GMW3, "Facebook is now Meta but What Does That Mean? <https://www.gmw3.com/2021/11/facebook-is-now-meta-but-what-does-that-mean/>, Nov. 12, 2021.
- [16] Yuanta Research, First step of metaverse, Oct. 12, 2021.
- [17] Theverge, "Meta announces plans to build an AI-powered 'universal speech translator'," <https://www.theverge.com/2022/2/23/22947368/meta-facebook-ai-universal-speech-translation-project>, Feb. 23, 2022.
- [18] ZDNet, "Microsoft expands its AI partnership with Meta," <https://www.zdnet.com/article/microsoft-expands-its-ai-partnership-with-meta/>, May 25, 2022.
- [19] AIM, "Meta develops a novel speech-to-speech translation system without intermediate text generation," <https://analyticsindiamag.com/meta-develops-a-novel-speech-to-speech-translation-system-without-intermediate-text-generation/>, June 14, 2022.
- [20] CNET, "Facebook Parent Meta Builds New AI Platform to Create More-Realistic Avatars," <https://www.cnet.com/news/social-media/facebook-parent-meta-creates-new-ai-platform-that-could-help-improve-avatars/>, May 23, 2022.
- [21] Businessinsider, "Meta launches Avatars store where users can buy designer brands like Balenciaga, Prada, and Thom Browne for their virtual selves," <https://www.businessinsider.com/meta-launches-avatars-store-with-balenciaga-prada-and-thom-browne-2022-6>, June 22, 2022.
- [22] Hypebeast, Meta's Horizon Worlds Is Expanding to PC and Mobile Devices, <https://hypebeast.com/2022/10/meta-horizon-worlds-pc-mobile>, October 2022.
- [23] Social media today, Meta Launches New Creator Funding Programs to Fuel Development of the Metaverse, <https://www.socialmediatoday.com/news/meta-launches-new-creator-funding-programs-to-fuel-development-of-the-metav/621943/>, April 11, 2022.
- [24] UploadVR, "Meta Avatars Store Coming 'Soon' to VR After Instagram and Facebook," <https://uploadvr.com/meta-avatars-store-facebook/>, June 18, 2022.
- [25] M.Z. Song, "A Study on NaverZ's Metaverse Platform Scaling Strategy, *International Journal of Advanced Smart Convergence (IJASC)*, Vol.11, No.3, pp.132-141, September 2022. DOI: <http://dx.doi.org/10.7236/IJASC.2022.11.3.132>.
- [26] BylineNetwork, "What Facebook Wants to Be: Metaverse on Metaverse," <https://byline.network/2021/10/31-97/>, Oct. 31, 2021.
- [27] Social Media Today, Meta Launches New Creator Monetization Initiatives, Including More Reels Payments and NFTs, <https://www.socialmediatoday.com/news/meta-launches-new-creator-monetization-initiatives-including-more-reels-pa/625807/>, June 21, 2022.
- [28] ZDNet, "Meta updates privacy policy with more detail about what data it collects," <https://www.zdnet.com/article/secure-your-data-like-james-bond-with-the-kingston-ironkey-vault-privacy-80/>, May 26, 2022.