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THE IMPACT OF THE INTRODUCTION OF THE METAVERSE CONCEPT IN THE COMPANY'S BUSINESS MODEL

Abstract:

The concept of the metaverse is developing in the world today. A number of the largest global companies are implementing this technology in their activities. The article shows how this affects the company's business model. Meta (formerly Facebook) was chosen as a case to analyze the business model. The purpose of the work is to identify how Meta's business model will change. To achieve the goal, an overview of the methods of analyzing the business model is done, companies that have previously introduced technological innovations to create the ecosystem of the metaverse were studied, and information about the Meta is investigated.

Keywords:

New business models, business model analysis, metaverse

1. The essence of business models

Companies works according to a definite business model that allows them to operate in the most effective way possible, reach higher profit, retain and attract customers, to achieve mission and ensure sustainable growth. Let's consider how the term business model is defined in the literature:

Table 1 – Definitions of the term “business model”

Authors	Definition
P. Timmers	An architecture of products, services, and information flows that includes a description of various actors, their roles, potential benefits, and sources of income. [1]
K. Kristensen	Consists of four interrelated elements: the consumer value of the product, the profit formula, key resources, and key processes. [2]
G. Chesbro	A way that a company uses to create value and generate profit. [2]
C. Nielsen, M. Lund	A platform that connects resources, processes, and services, which leads to the company's long-term profitability. [3]

According to O. A. Tretyak and D. E. Klimanov, significant and radical changes in the market are primarily associated with changes in the business models, and not only with innovations and investments [4]. This means that if a company intends to develop new technologies, become more profitable and change the market, it should rebuild the business model.

There are different ways to analyzing business models.

1) “Business model canvas”
This approach was proposed by A. Osterwalder and Y. Pigneur. The business model consists of 9 components: customer segments, key values, sales channels, customer relationships, revenue streams, key resources, activities, partners, and cost structure.

2) “Business model navigator”

Developed by O. Gassmann, K. Frankenberger, and M. Csik. The authors of the method believe that the most important task of the business model is to describe how the focal firm creates value for itself and the rest of the ecosystem participants and takes part in its appropriation [6]. The researchers identified and characterized 55 types of business models based on the following criteria: what value

proposition business offer for customers (processes, activities); how is the value proposition created resources and capabilities of the company; how company generate revenue .

3) *Pattern of decisions* “4W”
This method of analysis was proposed by K. Girotra and S. Netesin. They offered to analyze the business model by answering the following questions [7]: what decisions are made in the business model? when are they accepted? who accepts them? why are they accepted?

Thus, based on these definitions and approaches, we can conclude that business model is a description of the organization's activities, its mechanisms that are interrelated and affect the company's results; it includes values for the consumer, processes, resources, interaction with market agents, and etc.

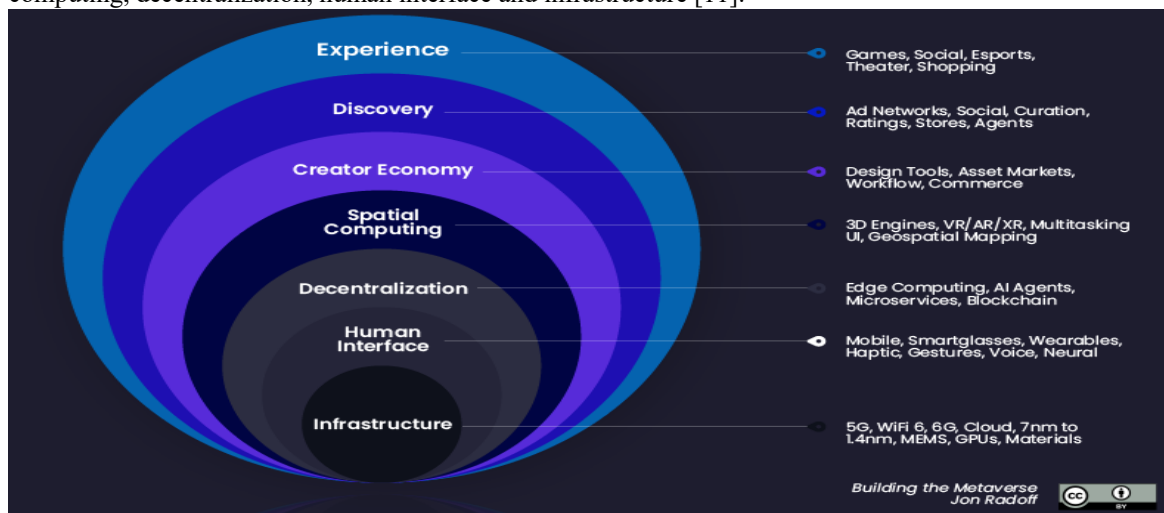
2. The concept of metaverse and its development on the market

The term ‘metaverse’ was first coined in Neal Stephenson’s 1992 sci-fi novel, *Snow Crash*, as a concept that blends digital and physical existence [8].

Metaverse is a combination of “meta” (beyond) and “verse” (universe) meaning the next-generation Internet in which the users can interact with each other in a virtual space (Duan, 2021) [9].

According to Wallace et al. (2021) the metaverse is a “space where you can interact with virtual objects in real life with real-time information” [10]. The metaverse includes three core elements such as technology, hardware device, and information about anything in the physical world.

Radoff (2021) includes in the concept of metaverse seven layers: experience, discovery, creator economy, spatial computing, decentralization, human interface and infrastructure [11].



Picture 1 – The seven layers of the Metaverse [11]

Starting with competitive analyses the following tendencies of the current VR/AR market were revealed (*Table 2*). First steps to create something similar to metaverse were taken by companies, which produce video games (Unity technologies, Valve, Roblox). These companies created digital platforms (Unity, Steam), which gave resources to promote collaboration among game developers, allowing them to sell digital products (codes or other digital assets) on the platforms. Nevertheless, the sphere of usage of 3d modelling and VR technologies do not only limit to game development. For instance, Unity technologies apply their innovative solutions in Automotive, Transportation, Manufacturing, Film, Animation and Cinematics, Government and Aerospace projects, Architecture, Engineering and Construction, Gambling, EdTech [12]. Thus, game development companies (Epic games, Unity technologies, Valve) have the resources to create something similar to metaverse.

However, if we take closer look on the companies with a similar vision as Meta has it will be clear that only 2 companies have this kind of platforms - Microsoft, NVIDIA. Microsoft platform is called Microsoft Mesh. As for now it allows to collaborate virtually, train together anywhere, get remote expertise, design together in 3D [13]. NVIDIA Omniverse is a platform for connecting 3D worlds into a shared virtual universe. This platform has been already used by big corporation, such as BMW group. BMW Group is using NVIDIA Omniverse to create a future factory, a perfect “digital twin.” It’s designed entirely in digital and simulated from beginning to end in Omniverse [14]. From this case we can see that these technologies such as digital twins is very practical and can help manage the whole factory processes.

It is worth mentioning that Apple and Google have a rather different focus regarding metaverse technologies and platform. They are focusing more on the augmented reality technologies. These technologies do not require special gear and available on the mobile devices. The main task of these applications is to help with a day-to-day life and broaden functionality of mobile devices [15, 16].

Table 2 – Competitive analyses of companies with Metaverse technologies⁷

Company	Year of launch	Vision	Technology	Sphere of usage
Epic Games	1998	Unreal Engine bring real-time experiences to life using the world's most advanced real-time 3D creation tool	Unreal Engine	Games, film&tv, architecture, broadcast&live events, simulation of real world, MetaHuman Creator
Unity Technologies	2005	From games to aerospace, medical to manufacturing and beyond, Unity is the go-to solution for creating world-class interactive and immersive real-time experiences that bring products and ideas to life	Unity 3D, Unity Asset Serve	Games, Accelerate Solutions for Enterprise, Automotive, Transportation Manufacturing, Film, Animation and Cinematics, Government and Aerospace, Architecture, Engineering and Construction, Gambling, EdTech, Digital Twin
Roblox	2006	Roblox is a global platform where millions of people gather together every day to create and share experiences with each other in immersive, user-generated 3D worlds	Studio	Gaming, game development, in game sales
Valve	2014	Valve make games, Steam, and hardware. This company invented the VR technologies that power the Vive, an interactive VR system brought to market in partnership with HTC. Source is a 3D game engine created by Valve	SteamVR, HTC Vive	SteamVR Home (social connection), Games, game development, hardware development
Google	2017	Google Lens is an image recognition technology developed by Google, designed to bring up relevant information related to objects it identifies using visual analysis based on a neural network	Application available for Android Marshmallow (6.0) or newer, IOS	Scan barcodes, check restaurant reviews as you walk, restaurant dish description, check prices, search by photo, translate text in real time, read out articles, solve math problems
Nvidia	2020	NVIDIA Omniverse , which, simply put, is a platform for connecting 3D worlds into a shared virtual universe	NVIDIA RTX graphics technologies, NVIDIA PhysX, NVIDIA MDL, NVIDIA AI	Design c “digital twins,” simulations of real-world buildings and factories
Meta	2021	The new VR headset will feature eye, facial and body tracking, and high-resolution video pass-through as well as 3D room sensing for mixed-reality experiences	Project Cambria, Project Nazaré, Horizon virtual world/meeting space	Social connections, Entertainment, Gaming, Fitness, Collaboration, Education, Commerce

⁷ [12]-[22]

Microsoft	2021	Microsoft Mesh enables presence and shared experiences from anywhere – on any device – through mixed reality applications	HoloLens 2, VR headsets, mobile phones, tablets, or PCs – using any Mesh-enabled app	Collaborate virtually , Train together anywhere , Get remote expertise, Design together in 3D
Apple	2021	Live Text' and 'Visual Look Up' will be coming to the iPhone's camera and Photos app as part of iOS 15	Camera app on iPhone (IOS 15)	Copy text within a photo or image, Make a call or send an email, Translate text within a photo or image, Find text on the web, Use Visual Look Up to learn more about the objects in photos

3. Analysis of business model of Meta

On the 28th of October Facebook CEO Mark Zuckerberg's rename his company to Meta Platforms Inc. Moreover, Zuckerberg shared that Meta's focus will be to bring the metaverse to life and help people connect, find communities and grow businesses. He identified several spheres of application of such digital platform - it should bring social connections to the next level with a help of horizon home, change the way we view entertainment, gaming, fitness, education, commerce; promote collaboration among employees regardless their location [1]. In his speech Mark Zuckerberg claims that the metaverse is not just the next chapter of his company. It's the next chapter of the internet. Therefore, we decided to review Facebook business model, since this company can be identified as trend setting for the new whole industry of digital platforms.

For the analysis of the business model, the canvas of Osterwalder and Pigneur was chosen, which most fully reflects the main elements of the company's activities and the value that is given to customers through certain channels and relationships, taking into account the parts with income and expenses. To compile a business model of Meta, a variety of recent articles were reviewed [23-29].

Table 3 – Business model of Meta (former Facebook)

Key partners	Key activities	Value propositions	Customer relationships	Customer segments
<ul style="list-style-type: none">• Policymakers• Experts• Industry partners• Global research partners	<ul style="list-style-type: none">• Design and development of the metaverse ecosystem• Interaction with partners• Launch of the metaverse platforms on the market• Marketing and promotion	<ul style="list-style-type: none">• Make the time people do spend online more meaningful• Provide a social experience that goes across all platforms• Create a place where people can meet up whether they’re in the same place or not• Make the company’s services be accessible to as many people as it can	<ul style="list-style-type: none">• Automated services in virtual reality• Communities• Autonomous virtual environment that allows the client to decide for what purposes to use it	<ul style="list-style-type: none">• “Young adult” users between the ages of 18 to 29 (priority)• Users of the company’s services
	Key resources		Channels	
	<ul style="list-style-type: none">• Global presence, large audience, financial strength, technical innovations, strong IT teams, brand		<ul style="list-style-type: none">• VR• AR• PC• Mobile devices• Game consoles and other computing platforms	
Cost structure			Revenue stream	
<ul style="list-style-type: none">• Teams’ compensation• Design and development• Marketing and promotion• Hardware production costs			<ul style="list-style-type: none">• Hardware sales• Commerce• Advertising within the metaverse itself	

In this article, approaches to the analysis of the company's business model were considered, the concept of "metaverse" was investigated and companies that already offer solutions based on this technology were analyzed. Moreover, the Meta (formerly Facebook) business model has been analyzed. To conclude, we can see that the technologies connected to Metaverse platform are gradually developing over the years. There is no doubt that pandemic of Covid-19 forced VR-technologies development. During these times the need to work remotely appeared in all industries. Metaverse platform can fulfill this need.

The introduction of technologies that form the metaverse provides a unique experience for consumers. We can say that this technology contributes to the evolution of user experience and the use of goods and services of companies. Nevertheless, some experts are skeptical about the idea of virtual world. They are concern about several aspects – safety of information, legislation issues, potential negative impact on mental health, therefore, policy makers, industry experts and research centers are involved in the implementation.

Vision of Meta is to create the digital world, where people can work together, spend time with friends etc. Thanks to the introduction of the metaverse, the company has clearly delineated its target audience, expanded partnerships, added activities that provide additional value to the consumers of the company's services, and added additional revenue stream.

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