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Internationalization of the Business Through the Metaverse

The rapid evolution of digital technologies is revolutionizing business internationalization through emerging platforms like the Metaverse. This article aims to explore the opportunities and challenges businesses may encounter while internationalizing through the Metaverse, particularly in the transition from Web 2.0 to Web 3.0. The study analyzes the impact of emerging technologies such as virtual reality (VR), augmented reality (AR), blockchain, and artificial intelligence (AI) on global business strategies and customer interactions. The findings highlight the potential of the Metaverse to reshape marketing, customer engagement, and international collaboration, while addressing key ethical challenges such as data privacy, mental health impacts, and the cultural and legal complexities of operating across borders. The study concludes that for businesses to successfully integrate into the Metaverse, they must adopt adaptive strategies that embrace technological advancements while accounting for ethical and social implications. The theoretical and methodological foundations of this research include marketing, international business strategies, and technological innovation. The study's insights contribute to the growing body of knowledge on the future of business internationalization and digital transformation in the Metaverse.

Keywords: *artificial intelligence (AI), augmented reality (AR), business internationalization, digital marketing, Metaverse, virtual reality (VR)*

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Introduction

Since the invention of the internet in 1983, humanity made a huge technological leap that seemed to be impossible in the past. It has been only 41 years since, and it seems like the Internet will never be the same. Back in the day, where people witnessed the dawn of the Internet, the

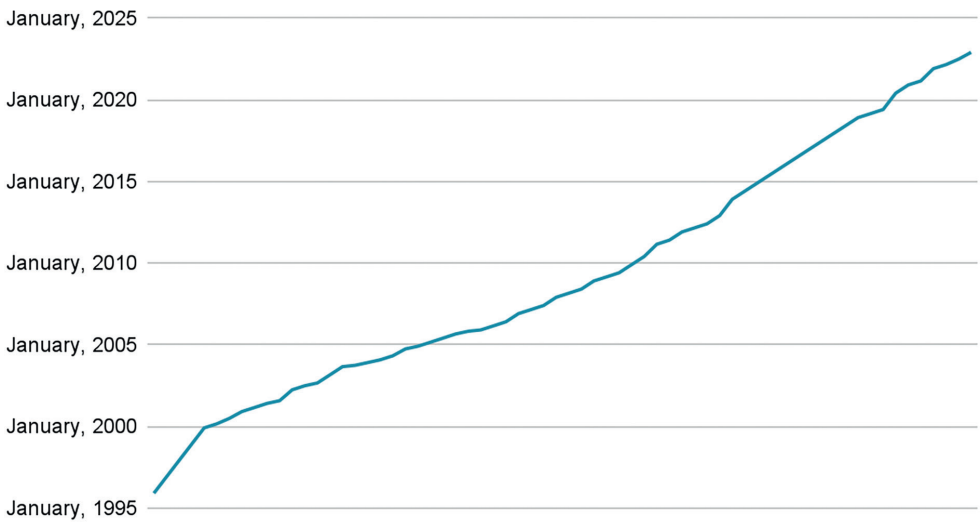

Fig. 1. Increase in the number of Internet users from 1995 to 2022

Source: [2]

business tools for marketing on the Internet were different. The Internet consisted of static web pages which served as digital brochures. There was no real two-way communication, businesses posted different advertisements online. Potential customers could see the list of the products, however, the interaction was limited. Webpages consisted of text and images. Since people could not interact, nor provide feedback of any sort or make purchases online, businesses could not get much data on customer behavior. Websites were not much different from paper advertisements and there was no way to track anything. Moreover, these websites were only accessible via a direct link, since search engines were not yet in existence and only appeared in the transition between two eras of the Internet. This epoch of the Internet is widely known as Web 1.0.

Web 2.0 signifies the next step in the evolution of the Internet. This is the modern Internet as we know it. The characteristics of the modern Internet (Web 2.0) include the appearance of social media, user-generated content, a great degree of interaction that fosters online communities, and online shopping. Authenticity and transparency became important for marketers to succeed in selling their products. Customers can now leave their reviews which largely affect and drive sales. The pace became faster, so the need to adapt quickly to customer expectations and feedback. Building a community and trust around a brand on social platforms is vital for success in business [1].

Over the years, the amount of internet users increased from 16 million in 1995 to 5.5 billion in 2022 (see Figure 1). So did the amount of data consumed and the pace of its development. It is expected that the future of the Internet will keep progressing exponentially.

In the present day, we experience a transition into the next phase of the Internet, or the so-called Metaverse. Web 3.0 is yet to come, however, we start to see new developments that get us closer to a new reality with each day. VR and AR devices have been in active development during the last decade. Facebook's transition into Meta exploded the hype around the idea of new Internet, which signified the transcendence as big corporations began to largely invest in Metaverse-related technologies. Methods of marketing and internationalization vary in different eras of the internet. Metaverse will be a lot different from what we have ever experienced before. It is important for the businesses to be a part of what's coming and adapt to the rapid change in order to survive and strive. This article is a summary of what waits for us next.

Literature Review

The exploration of the Metaverse has involved both influential individuals and major companies working toward the development of virtual worlds and immersive experiences.

Several individuals have played key roles in shaping the concept. Neal Stephenson, in his

1992 novel Snow Crash, introduced the term "Metaverse," envisioning a virtual reality space where users could interact in a 3D world through avatars [3]. Jaron Lanier, a pioneer in the field of virtual reality since the 1980s, laid much of the groundwork for the immersive technologies that are now being incorporated into modern visions of the Metaverse [4]. Philip Rosedale, the creator of Second Life, launched one of the earliest virtual worlds in 2003, which allowed users to socialize, create content, and engage in a fully immersive digital environment [5]. Mark Zuckerberg, CEO of Meta (formerly Facebook), has made the development of the Metaverse a central focus of his company, emphasizing the potential for virtual worlds to transform the way people interact, work, and socialize [6]. Tim Sweeney, the CEO of Epic Games, has also shown great interest in the Metaverse, envisioning a future where interconnected virtual worlds provide a platform for shared experiences [7].

On the corporate side, several major companies have been actively working to create and expand the concept of the Metaverse. Microsoft is exploring the Metaverse through tools like Mesh and virtual collaboration spaces integrated with technologies like augmented and virtual reality (AR/VR), with a focus on creating new ways for people to work and collaborate in virtual environments [8; 9]. Another major player is Roblox Corporation, whose platform Roblox allows users to create, share, and monetize their own virtual games and experiences. As a user-generated content platform, Roblox embodies the decentralized and participatory nature of the Metaverse, where users have agency over the creation and governance of virtual spaces. Researchers have highlighted the significance of Roblox in fostering creativity and entrepreneurship in virtual environments [10].

Together, these individuals and companies are driving the evolution of the Metaverse, shaping its future as a virtual space for human interaction, creativity, and business.

Technological Foundation of the Metaverse

To understand the driving factors of internationalization, we ought to delve into the basic concepts of the Metaverse and its technology. The transition consists of several technological developments. Some of them are accomplished to a certain degree, some others present some challenges. VR and AR devices, or "hardware" is the first thing on the checklist of transition into the Metaverse. These devices give the user an experience of a virtual or augmented reality. At the moment, there are quite a few models available for purchase from Meta, Apple, Big Screen and other companies. All of them have their pros and cons, however, it is really impressive what these things can do. It is important to understand the nature of experience that a VR headset provides to the end-user to successfully implement internationalization practices. The experience can be described as an immersion into a whole new world where users can see graphics and hear spatial sound, move in the space and interact with the digital environment, communicate with other people as if they are physically present in one room and so on. Such experience creates a deeper connection between the user and the digital environment, which presents more opportunities for marketers. However, they shall also be aware that excessive intrusiveness in user's experience can turn off potential customers easily. Therefore, marketing has to be seamlessly blended in the environment in such a way that would not disturb user's experience and possibly even entertain them.

Another technological segment that contributes to the Metaverse is blockchain and Decentralized Finances. The concept of the Metaverse lies in its oneness. The idea is that the user can seamlessly transcend from one virtual reality into another, collect digital assets from different digital worlds and seamlessly have them everywhere. The user can use cryptocurrencies to purchase products, move assets from one world to another seamlessly. This is currently one of the biggest challenges in our transition into the Web 3.0. The concept lacks a significant technological foundation that would allow such transcendence. Applications are centralized and are existent on some platforms. However, the question of merging these platforms and allowing users to easily move from one application in the Metaverse into another has not yet been resolved. There has to be some sort of widely-accepted protocol like TCP-IP for Web 1.0. Cryptocurrencies have somehow reached such an agreement as of today with blockchain, people can move their funds between different wallets

and blockchain technology tracks all the previous transactions to provide secure transactions that are the part of the entire ecosystem. Cryptocurrencies are somehow in a sense one. Achieving such a digital interdependence and oneness for applications and creating in a sense a living organism that exists on its own and combines digital solutions is not an easy task. There has to be a certain technological medium that will have the capacity to merge virtual worlds together in a harmonious dance. Marketers have already experienced a change of pace in the user's interactions after the transition into Web 2.0, which signified a need for new methods and faster adaptation to the customer's expectations. With everything becoming whole and interdependent in the virtual space, the pace is expected to increase as the end-user's interface is significantly more cohesive and speedy. Interactions and interoperability will explode to a new level, providing new entry points for communication and community development.

Lastly, the Metaverse will be a Metaverse with further advancements of software, artificial intelligence and semantic web. These are the insides of the Metaverse which are as important as the hardware. The development of artificial intelligence will lead to a further development of the semantic web, where search results would not give the user a list of websites based on keywords, but a summary of important information in the form of human language based on the input by the end-user. It is like a web, but it is multi-dimensional and provides an output based on the processed information from various sources. Today, everyone knows about the Chat-GPT and its capabilities to provide outstanding semantic output to answer different questions which is mind-boggling. It acts as a search engine, but does not provide you with any websites or search results that we are used to. Software of the Metaverse will be in the form of applications that provide different experiences. Eventually, search engines will disappear, social media will transcend into the digital public spaces and website marketing using search engine optimization will lose its relevance. Reaching new audiences and an internationalization of companies will depend on the virtual presence in the digital worlds via various communication points in the end-user's experience. It will all be different. These communication points will vary on the individual experience. For example, in a VR basketball game a company might promote its real basketball balls or sports wear by making them present in the virtual experience of the game itself. It would make them present in the experience of the player, and not interfere with the experience of the game at the same time. Semantic web and applications would displace search engines and websites, which will eliminate old methods of reaching the audience and create new ones. However, at the moment, internationalization is limited by the lack of interoperability or agreement and relatively small hardware market.

Internationalization of Cultures and Workflow

A great example of internationalization lies in the film industry. With the rise of virtual production, internationalization of the workforce on the project unveils huge potential. Hollywood gives more and more preference to digital production as it helps to cut costs and provides a more flexible and seamless, creative workflow. In a virtual production studio it is possible to place actors in a different environment within one shooting day without a need to physically move to the next location and create a new set, which provides a great opportunity for filmmakers [11]. Virtual sets are created in three-dimensional environments. Having people working on a digital film set in the Metaverse and creating a scene as a virtual experience with other creators is a whole new way to make films and produce graphics. Deloitte Global predicted that the market for virtual production tools will grow to $2.2 billion in 2023, up 20% from an estimated $1.8 billion in 2022. More studios are seeing the value in virtual production. According to one estimate, a film that previously would have cost, for example, $100 million can now be produced using virtual tools for $25 million [12]. At the same time virtual production, closely tied to the emerging Metaverse, significantly reduces costs and waste for studios by eliminating the need for physical set construction. This method also allows for seamless transitions between locations without the logistical burdens of travel and on-site equipment. Moreover, virtual production promotes sustainability through asset reuse. Studios can invest in digital assets that can be uti-

lized across multiple projects in the Metaverse, minimizing storage needs and reducing costs over time [13].

The same would be possible for other businesses. Businesses would be able to create digital offices. That would significantly cut costs on rent. Having virtual offices would also allow people to interact in whole new ways. International business expansion strategy would have to consider and manifest preferences and cultural differences of a local population into digital spaces to make people feel cared for and respected. For example, decorating virtual offices for various celebrations in different cultures. Moreover, implementing artificial intelligence translation will help to remove language barriers between co-workers from different regions. That would allow a new form of cooperation that was not so easily possible before.

The Metaverse serves as a revolutionary platform for internationalizing the industries by overcoming traditional barriers such as language, distribution, and regulatory constraints. Its immersive and virtual nature allows for seamless global interactions and content sharing, making it easier for entertainment entities to reach a worldwide audience without the logistical and financial burdens of physical distribution networks. The Metaverse facilitates linguistic diversity through real-time translation technologies, enabling users from different linguistic backgrounds to engage with content and each other effectively [14]. This technological leap significantly expands the audience base, making businesses truly global. Additionally, virtual venues within the Metaverse could host international concerts, film festivals, exhibitions and gaming tournaments, attracting participants and viewers from across the globe. These events not only bypass geographical limitations but also create a unique space for cultural exchange and networking, further driving the internationalization of the industries. However, for the Metaverse to fully capitalize on its potential, ongoing innovations in technology, alongside adaptable business models, are essential. These will ensure that the platform can accommodate the ever-increasing scale and diversity of global entertainment demands. Such implications are to be considered by businesses who want to promote their brands internationally.

Ethical Challenges of Expansion in the Metaverse

With a variety of opportunities that the Metaverse has for international expansion, it comes with its own risks and challenges. As this technological leap promises to remove physical boundaries, there would be legal and cultural conflicts on the rise. As different countries have different laws and ethical norms, interactions between individuals in the Metaverse might create situations that conflict with each individual's perspective. Businesses would have to consider these cultural and legal differences when it comes to marketing their products and services, as well as performing other activities. The challenge would be to create barriers for consistent user experience across borders that would be widely accepted. It would be the highest concern for businesses to take action to protect their user's data due to the amount of personal information that can be stored on the Metaverse, which makes it vulnerable for breaches and cyber attacks.

On the other hand, many people talk about the benefits that Metaverse provides for healthcare and education. However, the negative aspects and impact of the technology on human emotions and mental health remain to be uncertain. Maintaining and nurturing emotional and mental health are important considerations for the creators of the virtual worlds. Certain experiences may cause certain behavioral changes that can be deemed to be serious. It is important to prepare the user for the virtual immersion and assess possible risks to mitigate negative impact. As we know, current social media have a significantly bad impact on people's mental health. In particular, social media activates the brain's reward center by releasing dopamine, the "feel-good chemical" linked to pleasurable activities. Designed to be addictive, these platforms contribute to anxiety, depression, and physical ailments. According to the Pew Research Center, 69% of adults and 81% of teens in the U.S. use social media, significantly increasing the population's vulnerability to mental health issues [15]. Similar to social media, users of the Metaverse may experience increased anxiety and feelings of exclusion, emphasizing the urgent need for self-awareness and moderation in their online behaviors. Although initial

efforts are being made to address these challenges, a more comprehensive approach is essential to protect mental well-being in this rapidly evolving digital landscape. It is important that the Metaverse does not repeat the same mistakes and does create a positive impact on people's lives.

Conclusion

As we stand on the brink of yet another monumental shift with the advancement of the Metaverse, it is crucial to recognize the historical context and continuous evolution of the internet, from its simplistic Web 1.0 beginnings to the highly interactive and community-driven Web 2.0 era. The transformative journey through these phases has not only redefined technological paradigms but also reshaped how businesses approach marketing and consumer interaction. Looking ahead, the Metaverse represents an unprecedented opportunity for internationalization within a virtually boundless digital world. This transition challenges traditional business models to adapt to a new era of Internet where real-time interaction, cultural integration, and seamless digital experiences are a part of the process. As businesses navigate this new frontier, they must remain vigilant of the ethical implications and strive to foster an environment that respects diverse cultural and legal frameworks while ensuring privacy and data protection. Embracing these innovations responsibly will be key to unlocking the vast potential of the Metaverse, setting the stage for a future where digital and physical realities converge, offering endless possibilities for global connectivity and collaboration.

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Інтернаціоналізація бізнесу через Метавсесвіт

У контексті глобальної цифрової трансформації стаття пропонує комплексний аналіз інтернаціоналізації бізнесу через призму Метавсесвіту, досліджуючи складну взаємодію між інноваційними технологіями та глобальними бізнес-стратегіями. Метою дослідження є глибинне вивчення можливостей та викликів, які постають перед компаніями під час переходу від традиційної парадигми Web 2.0 до інноваційного середовища Web 3.0. Дослідження детально аналізує трансформаційний потенціал ключових технологічних інновацій, таких як віртуальна реальність (VR), доповнена реальність (AR), блокчейн-технології та штучний інтелект (AI), на глобальні бізнес-стратегії та взаємодію з клієнтами. Методологія дослідження охоплює міждисциплінарний підхід, інтегруючи теоретико-методологічні основи маркетингу, стратегій міжнародного бізнесу та технологічних інновацій. Особливу увагу приділено критичному аналізу впливу цих технологій на глобальні бізнес-стратегії та взаємодію з клієнтами. Результати дослідження дозволили виявити потенціал Метавсесвіту для реорганізації маркетингових підходів, залучення клієнтів і розширення можливостей міжнародної співпраці. Водночас дослідження акцентує на критичних етичних викликах, серед яких забезпечення конфіденційності даних, мінімізація негативного впливу на психічне здоров›я, а також подолання культурних та правових бар›єрів транскордонної діяльності. Наукова новизна дослідження полягає в комплексному підході до розуміння процесів інтернаціоналізації бізнесу в умовах Метавсесвіту. Дослідження дозволило зробити висновок, що для успішної інтеграції бізнесу в Метавсесвіт необхідно приймати адаптивні стратегії, які охоплюють технологічні досягнення, враховуючи при цьому етичні та соціальні аспекти. Теоретико-методологічні основи цього дослідження включають маркетинг, стратегії міжнародного бізнесу та технологічні інновації. Дослідження робить вагомий внесок у розширення наукового розуміння перспектив інтернаціоналізації бізнесу та цифрової еволюції в контексті Метавсесвіту, пропонуючи інноваційні підходи до глобальної бізнес-стратегії.

Ключові слова: *віртуальна реальність (VR), доповнена реальність (AR), інтернаціоналізація бізнесу, Метавсесвіт, цифровий маркетинг, штучний інтелект (AI)*