TOWARDS THE ERA OF WEB 3.0 AND THE MARKETING 3.0

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Abstract

In web-based marketing, the constant growth of the Internet has thrown up inconceivable opportunities and problems. Web 3.0, the most recent version of the web, is believed to be a technologically sophisticated medium that allows users to Read/Write/Execute and also allows robots to perform some of the thinking formerly reserved for human beings, but also as a game changer on the existing business models on which digital marketing is conducting nowadays. Online marketing with web 3.0 is also known as intuitive Web, which is a Semantic Web that allows web services to communicate with one another whilst web users are engaged and rewarded. Individualized and behavioral Web 3.0 will be the norm. Web 3.0 has generated new tools and technology for aiding web-based marketing in a short amount of time and in full transparency. To begin, this article addresses certain Web 3.0 concepts, development, and features. We explored the influence of web 3.0 on marketing in this study, as well as the many aspects that contribute to marketing uplift. Web 3.0 is a word used to describe the interaction that occurs as a result of the evolution of Web use and the transformation of the Web into a decentralized database. Smart web with intelligence analysis, personalization, interoperable web, virtualization (virtual 3D environments), blockchain technologies supporting smart contracts and multimedia are some of the most significant elements of these technologies. The broad adoption of Web 3.0 technologies in marketing settings has resulted in the creation of e-marketing 3.0. Web 3.0 is defined by facilitating cooperation and is powered by co-creation tools.

Keywords

Web 3.0, Artificial Intelligence, Blockchain, Marketing, Marketing 3.0

1. INTRODUCTION

Modern world business models and Web developers have developed this word. Tim Berners, one of the key founders of internet, is according to researchers, is the "Father of the Web" and a staunch supporter of Web 3.0. "Web 3.0 will be able to read and understand material and context," he claims. Web 3.0 has been characterized in a variety of ways, with little agreement. Some have taken a wide approach to defining Web 3.0. According to this viewpoint, the Semantic Web concept is linked to the new Web landscape. In this scenario, rather than presenting and displaying page contents, the key is to comprehend the significance of information that completely matches our demands. This new statistic may not be synonymous with Semantic Web for others [1]. It is, nevertheless, mostly defined by semantics. Its rise is built on three key elements: the semantic web, Web 2.0 apps, and artificial intelligence. Web 3.0 is the third generation of the Web (2010-2022) that adds value to users by allowing them to have a better experience on a more intelligent Web both with full control of the content that they produce. It entails arranging a massive volume of data while taking into consideration the context and individual demands of each user and protecting their personal data against any mis-use. It is a Web whose goal is to make data understandable. Web 3.0 is a brand-new online ecosystem that incorporates user-generated data to give it new significance. In contrast to Web 2.0, which relies on user involvement, Web 3.0 relies on user collaboration. Objects and data are linked in Web 3.0 [2]. As a result, the semantic web reduces the number of options available to consumers while looking for information by filtering out irrelevant content.

Online marketing with web 3.0 is also known as intuitive Web, which is a Semantic Web that allows web services to communicate with one another. Individualized and behavioral Web 3.0 will be the norm. Web 3.0's goal

is to usher in a new age of prolonged immersive experiences. It is feasible to find new venues for a value chain in this period that are not confined to the Web. Users' shopping experiences will be more engaging, as well as broader in scope. According to Marshall and Shipman (2003), the need to organize and order overflowing and chaotic information found on the Internet, the maturity of artificial intelligence, and the desire to eliminate redundant elements while selecting or prioritizing others based on the needs of each user have all influenced most deployed efforts [3].

The blockchain technology was described as an alternative way to organize data in 1991 by the research scientist Stuart Haber and W. Scott Stornetta. They wanted to introduce a computationally practical solution for time-stamping digital documents so that they could not be backdated or tampered. They develop a system using the concept of cryptographically secured chain of blocks to store the time-stamped documents.

In 1992, Merkle Trees algorithms were incorporated into the design, which makes blockchain more efficient by allowing several documents to be collected into one block. Merkle Trees are used to create a 'secured chain of blocks.' It stored a series of data records, and each data records connected to the one before it. The newest record in this chain contains the history of the entire chain. However, this technology went unused, and the patent lapsed in 2004.

In 2004, computer scientist and cryptographic activist Hal Finney introduced a system called Reusable Proof Of Work (RPoW) as a prototype for digital cash. It was a significant early step in the history of cryptocurrencies, which gave boost for the development of the Blockchain technologies. The RPoW system worked by receiving a non-exchangeable or a non-fungible Hashcash based proof of work token in return, created an encrypted RSA-signed token that further could be transferred from person to person.

Further, in 2008, a man or a group under the name Satoshi Nakamoto conceptualized the theory of distributed blockchains. He improves the design in a unique way to add blocks to the initial chain without requiring them to be signed by trusted parties. The modified trees would contain a secure history of data exchanges. It utilizes a peer-to-peer network for timestamping and verifying each exchange. It could be managed autonomously without requiring a central authority. These improvements were so beneficial that makes blockchains as the backbone of cryptocurrencies. Today, the design serves as the public ledger for all transactions in the cryptocurrency space.

The evolution of blockchain has been steady and promising. The words block and chain were used separately in Satoshi Nakamoto's original paper but were eventually popularized as a single word, the Blockchain, by 2016. In recent time, the file size of cryptocurrency blockchain containing records of all transactions occurred on the network has grown from 20 GB to 100 GB.

There was a very good reason why this happened. The Leaman Brothers financial crisis in 2008, forced many to start thinking alternative ways on how money need to be produced, stored or distributed able to survive of a catastrophic event such as a collapse of a Commercial Bank in a "star like" system, like the present banking and monetary. The withdraw of 600bil$ bad real estate loans from the financial system in USA, literally evaporated 13tri$ of money globally over the next few years.

Nachamoto's main goal was to create an alternative more resilient and more transparent form of "money" that can survive at any other such catastrophic event in the future. His brilliant idea was to introduce the work done before by Haber and others into his new concept. Nakamoto uploaded blockchain source code to Source Forge in 2008 so software developers around the world could contribute to the project. The first modern blockchain was launched in January 2009 along with the associated cryptocurrency, the Bitcoin. A bitcoin is different from other traditional currencies such as Dollar, Pound, and Euro, which can also be used to buy things and exchange values electronically. There are no physical coins for bitcoins or paper bills. When you send bitcoin to someone or used bitcoin to buy anything, you don't need to use a bank, a credit card, or any other third-party. Instead, you can simply send bitcoin directly to another party over the internet with securely and almost instantly.
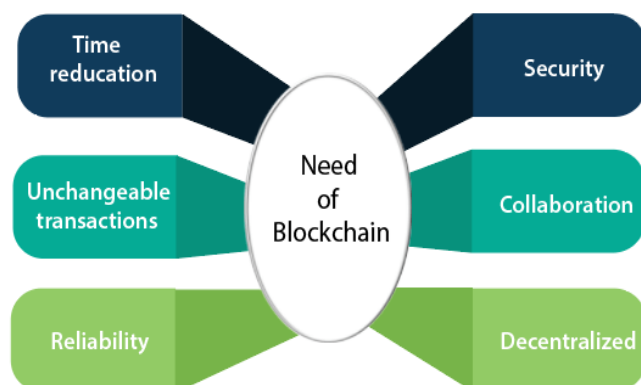

Figure 1 Benefits of the blockchain method of

The introduction of blockchain technology, ushers in a new age of the web, which we refer to as Web 3.0. The early days of the Internet were dominated by information delivered via static websites with little opportunity for interaction. It was largely created by information portals with flat material that enabled visitors to "just" read but not submit any comments, reviews, or feedback [4]. The capabilities to communicate, share information, create content, and trade data define Web 2.0, or the second stage of the World Wide Web's growth. This age, also known as participatory, allows all users to participate, create online material (user-generated content), and communicate with other users effortlessly. But all this with a price: users 'data were exposed to serviceproviders, such as Google, Facebook and others, that can perform any data or metadata analysis. This

resulted to specific marketing norms created by unknown algorithms, giving tremendous power to such big-tech companies on the internet. Blockchain is a rapidly evolving technology that is reshaping our way of life, but also the business model on which web2.0 is expanded affecting almost all industries from such marketing approach. Many people believe it will be as transformative as the internet's inception. With blockchain technology comes a whole new set of issues and difficulties for marketers, so it's critical to grasp what it is, what it can do for your organization, and how you can take advantage of this tremendous potential [5].

Web 3.0 is built on decentralization, with no one point of control or profit center. The blockchain allows value to be transferred without the need for a profit center or monopolistic service providers. While social media allowed users to share information, it concentrated control in the hands of a few private actors (creating digital oligarchies with social media companies, peer-to-peer ridesharing, and peer-to-peer hospitality networks), blockchain technologies allow for the creation of decentralized networks with no centralized points of control. One of the technology's most disruptive features is its ability to function on a decentralized basis without a central profit center in charge of managing and exploiting the network [7]. Without the use of a third-party middleman, such as banks or other financial organizations, blockchain technology enables for the safe movement of information, assets, and money. These third-party intermediaries aren't only banks; they also include shared economy and Web 2.0 economic platforms that benefit from each transaction, as well as popular social media platforms that earn from users' data [8]. Web 3.0 is frequently referred to as the "semantic web." semantic web because it generates meaningful data. Because Web 3.0 is a word used to describe the interaction that occurs data is identified, assessed, and turned into usable information as a result of the evolution of Web use and the transformation for transmission in these contexts by software tools [11]. Turning the Web into a decentralized database [10] will be the final result of this new era, which we now stand and view its beginning progress. Web 3.0 is recognized from internet's previous versions as the "machine" that get the relevant information we want in one step using smart web with intelligence analysis, personalization, interoperable web, blockchain smart contract automatic execution of agreements between web users, virtualization (virtual 3D environments), and multimedia are some of the most significant elements of these technologies [12].

The broad adoption of Web 3.0 technologies in marketing settings has resulted in the creation of e-marketing 3.0. Web 3.0 is defined by facilitating cooperation and is powered by co-creation tools. This version of the web has transformed linear firms into platform businesses allowing multiple stakeholders to trade value in the Web 3.0 company platform. In this setting, merchants transition from resource ownership to exchange control, and major online retailers like Amazon embrace platform-based ecosystems [13]. There are several chances for digital merchants to take entrepreneurial action in such a rapidly changing business environment. To target specialized markets for the exchange of information, commodities, and content [14].

2. LITERATURE REVIEW

Web 3.0 is the most recent advancement in Internet communication, and it will not only reorganize Internet communication but also have a substantial influence on key business drivers. Web 3.0 will usher in new business drivers while simultaneously redefining old ones. The precise definition of Web 3.0 technologies and how they will affect the Web experience is unclear. According to historical study on the history of the web, the Internet goes through periods that are comparable. Initial web research concentrated on identifying the technology, comprehending its advantages, and determining how it will effect corporate settings in terms of opportunities and difficulties [16]. There has also been research on user behavior and privacy issues, with an emphasis on personal information gathering and sharing strategies using web technologies. As the web and the technology that surround it grew in popularity, the attention moved to security, with a particular emphasis on detrimental effects on corporate operations. Independent private companies such as Booz and Company, Verizon, Gartner, Clearswift, and SEM Logic conducted the majority of Web 3.0 research. Whitepapers and articles make up the majority of the research, with only a few scholarly peer-reviewed studies. The majority of the articles focused on defining Web 3.0, with only a few addressing the benefits and drawbacks of using Web 3.0 technology [17, 18]. Benjamins et al. (2002) did more study on web evolution, focusing on preliminary definitions and forecasts of the issues posed by the deployment of Web 3.0 technologies. Lu et al. (2002) looked at the potential benefits and drawbacks of Web 3.0, as well as how an organization may obtain financial value from employing these applications. More current research has been carried out, which will be emphasized in the next sections. The study's major flaw was that it was done during the early stages of the web; instead, the study concentrated on a single aspect of Web 3.0 and chose underlying technology components [19].

As mentioned, Web3 will be the next evolution of the internet and will provide a pathway to using the internet and socializing in new visionary ways. Otherwise known as the semantic web, this evolution will be an open-sourced, data-safe internet that is tailored for individualistic needs. Combining Read, Write, Dynamic, Static, and other forms of interactivity that can give an experience without thinking required is the future that humans can look forward to. Becoming the ideal place for blockchain solutions for cryptocurrencies such as the Ethereum blockchain, the introduction of smart contracts that can give greater asset ownership and advanced machine learning that can contribute to humanity is what Web 3.0 will be about in the future.

There hasn't been comprehensive academic research that focuses on defining Web 3.0 and analyzing the obstacles and possibilities that arise from its use. In recent years, the focus has switched to industry-specific research on Web 3.0 technology applications. e-learning, marketing, and information management are the two most popular uses of Web 3.0. It is helpful to describe the various stages of the web in order to comprehend the evolution of the web and the influence it will have on organizations. In the realm of web evolution, Web 3.0 is a novel notion. It will be easier to classify new and evolving web technologies into the appropriate evolutionary genres, such as Web 1.0, Web 2.0, and Web 3.0, if it is defined. A clear description will also help distinguish between present and emerging negative consequences and possibilities [21]. Exabytes of data abound on the internet, yet computers have yet to master the challenge of extracting this data or executing complicated activities with it. The necessity for data organization and integration is critical for the web's next phase of development. Despite the fact that Web 3.0 is the next generation of the internet, its meaning differs. There is also a variety of names, including Web 3.0, the Semantic Web, the Transcendent Web, and the Web of Things - all of which will now be referred to as Web 3.0 [21].

3. DESIGN AND APPROACH

The goal of this study is to get a conceptual understanding of users' actions and behavioral patterns in relation to Web 3.0 marketing. The research focuses on the usage of social communication and the creation of new business models that are based on it, emphasizing the relevance of web 3.0 application engagement in marketing [22] Web 3.0 on management systems, virtual reality, blockchain, and AI processes. In light of recent advancements, the article investigates the potential sources of web 3.0 competitive advantages available to enterprises. It identifies the changes they should do in order to enhance the decision-making process and capitalize on fresh opportunities [23]. The article examines the influence of social networks and Web 3.0 technologies on organizational marketing, outlining several processes that might help businesses gain a competitive edge [24].

3.1. Impact on Marketing

Deep changes in consumer behavior favor the emergence of marketing 3.0, which necessitates the combined intervention of collaborative, cultural, and spiritual marketing. A sophisticated consumer orientation is required, in which the client claims to be interested in a collaborative, cultural, and spiritual marketing approach: Marketing 3.0 is the next generation of marketing [26]. According to Kotler (2012) and Mayol (2011), the first cornerstone of marketing 3.0 is collaborative marketing. The new Web 3.0 norms demand transparency and uniformity on entrepreneurs and businesses, necessitating a new environment. It is no longer a matter of persuasion or dialogue; communication has become immersive. Companies are required to engage with their consumers, workers, partners, and investors in this environment. All of these parties should be aware of their responsibilities [1].

Marketing 3.0 is the consequence of a collection of entities coming together and embracing the same ideals. Globalization has been fueled by the new technological wave. As a result, globalization paradoxes, notably the socio-cultural paradox, impact consumers who are under pressure to resolve a tough dilemma: how to be both a local and a global citizen. Companies should take into account cultural difficulties as a result. Marketing 3.0 places the cultural factor at the heart of a business's economic strategy when it caters to the varied populations it serves [25]. As technology advances, so does the importance of creative individuals in society. These individuals are heavy users of social media. They are collaborative co-creators who, contrary to Maslow's needs pyramid, believe that personal fulfillment is a vital need. "Spirituality and its search" is of utmost importance to them. The way persons view their needs and wants is influenced by their lifestyles and attitudes. "As a result, customers' primary demand is for psycho-spiritual advantages". This new tendency should be recognized by businesses. According to Kotler (2012), marketing 3.0 is "centered on values and the search for meaning." [3].

3.2. Less Time Spent on Research

By assigning it to Artificial Intelligence (AI) within the blockchain smart contracts, Web 3.0 technologies will enable organizations to automate the process of requesting information from a variety of sources. With technologies such as OWL, agents will be able to extract information from a wide range of sources that is relevant to the stated question, reducing research time and cost [29]. Furthermore, AI will be able to save the results of searches, allowing for fast recall of particular questions.

3.3. Business Advantages

Organizations can benefit from improved management through effective knowledge management techniques, such as increased productivity, sales growth, cost reduction, improved employee development and retention, improved customer satisfaction, and the expansion of social and intellectual capital with external stakeholders [30]. By merging the abovementioned technologies, the web has the potential to become the destination of every imaginable information resource, person, and organization, as well as all related activities. Processes will become more automated as a result of Web 3.0 and AI with the capacity to categorize and add meaning to information, creating information faster and more accurately, at a higher degree of access, which will open up new options [31].

3.4. Web Services

Web services are websites that can not only provide static information but also allow users to engage and contribute content, as well as construct new web services based on user preferences. According to Lu et al. (2002), autonomous web services will only be realized with the development of the following stages of automated web services: Automatic web service discovery refers to the ability to obtain information about internet services. IA might gather these descriptions and migrate between many repositories to find the appropriate web service requested by the user, thanks to Web 3.0's ability to register semantic descriptions of web services on a universal repository [4].

3.5. Search Engine Capabilities

Traditional search engines are inefficient in two key areas: resource reliability and relevancy of information found by the search engine. When documents and information are linked by hyperlinks, which humans comprehend but machines do not, a problem occurs. Natural language processing and Web 3.0 technologies will enable a search engine to categorize material based on context rather than just phrase detection. Web 3.0 technologies will contribute to the creation of an intelligent search engine by using XML metadata tags, and query information will be searched [4]. Following that, the XML metadata will be translated to RDF format. This will be the foundation for the database from which data will be retrieved. The power of ontologies like OWL will be employed to ensure that the data in this database remains relevant. The data will be retrieved and queried using SPARQL. Using multiple Web 3.0 technologies, ontologies may provide semantic interoperability, while XML and RDF enable [3] machine comprehension.

3.6. Web 3.0 and Social Community Development

The community manager's special job of developing, administering, and promoting engagement and collaboration in virtual communities and social networks is highly valued by businesses. Administrators of online communities are what we refer to as community managers. They are in responsible of the day-to-day operations of these communities via various types of virtual communities and social networks on the internet acting as a liaison between companies and online communities, ensuring a healthy link between the two [32].

　　　Their most well-known duties are to build, manage, facilitate, make dynamic, raise, and generally ensure and enhance a company's dialogue and interactions with consumers and other stakeholders on the internet, depending on the interests of the business and other agents. Their position, on the other hand, include critical managerial and marketing elements. They accomplish three purposes, in our perspective, by executing a range of tasks. To begin, they must boost the organization's marketing efforts by promoting products and events while also improving the organization's reputation [32]. They must improve the meeting, participation, and collaboration of a wide range of stakeholders related to online communities, while also attending to the needs and opinions of customers and other stakeholders, and attempting to monitor and control activity, particularly "word of mouth," over the internet (distribution lists, newsgroups, or web forums); implementing the organization's vision and relational marketing plan, while enhancing and ensuring good customer service; and implementing the organization's vision and relational marketing plan, while enhancing and ensuring good Second, they have a management role in that they must communicate the state of the community to the company by developing measurements, analyzing data, and identifying key success criteria to aid firms in developing product and process strategies. Finally, as we'll see later, the community manager must promote stakeholder participation and collaboration in order to improve some "crowdsourcing" processes at various points along the value chain [33]. Outbound marketing is a method that includes firms blindly selling their product to all customers, even if they have no interest in the product. As the Internet economy expands, and inbound marketing becomes more popular, this method is becoming obsolete. Inbound marketing, according to Prescott (2012), comprises disseminating information to consumers who value it, hence improving consumer confidence and trust in the firm. The most common kind of advertising is electronic, and it encompasses a variety of content marketing techniques such as blogs, videos, e-books, e-newsletters, whitepapers, and social media marketing. Inbound marketing's main purpose is to reach out to specific clients based on semantically related market groupings, even if they are unfamiliar with the product. Semantic information obtained by Web 3.0 technologies may be used to target specific market segments and build an electronic relationship with clients by tailoring their financial surfing experience [34]. The following benefits might be expected.

3.7. Brand Awareness and Credibility

The greater the number of outlets – social media, blogs, and videos – via which businesses are promoted, the greater the chance of reaching customers. As the number of hits grows, so does the position on search engine results pages. Consumer trust will improve as a result of high ranks on a Google search list, which will boost brand credibility [35].

　　　Leads from incoming sources are 50 to 60% less expensive than those from outbound sources. The primary motivation for this is to save money on third-party marketing by utilizing the tools accessible on the internet [36].

Customers looking for a certain solution are supplied with effective, helpful, and relevant information, resulting in a much higher quality and sales ratio among visitors to a website. The ability of Web 3.0 technologies to acquire data from the web autonomously and reason with it in a meaningful way is a recurring theme in this section. Users will be able to fully use the web's capabilities thanks to machines with human-like features and the ability to collect and send data at a much quicker and more precise rate [37].

4. WEB 3.0 TECHNOLOGIES AND THE USE OF SOCIAL NETWORKS

The transformation of the so-called Web 1.0 into Web 2.0, the emergence of semantic web technologies and their integration into Web 3.0 and, most importantly, the development of social networks, which have created new forms of competition between businesses, are all examples of recent advances in internet technology [38]. Web 3.0 can be defined as "semantic Web technologies integrated into, or powering, large-scale applications", "intelligent agents that can automatically manipulate Web services (read-write-execute) and help firms react to changes quickly" or "intelligent agents that can automatically manipulate Web services (read-write-execute) and help firms react to changes quickly" by integrating data. The new approach is critical because it makes information more relevant to humans by making it more machine- understandable offering a world-wide web made up of semantically linked data rather than just a collection of HTML texts. It not only allows for the use of semantics, but also of space, pictures, sounds, and sensations [39] in a notion that transforms the standard static web into a much more dynamic one. Intelligent machines read, comprehend, interrelate, and change data from cyberspace in the new environment, allowing this process to be tailored to the demands of individual users or businesses. Furthermore, the new technology enables for listening, marketing analysis, and collaboration, allowing each consumer or stakeholder to be handled differently at all times, according to their preferences [40].

4.1. Web 3.0 and Applications in Marketing
Understanding current developments in the corporate environment requires the use of social networks and virtual communities. The new inventions' networking potential drives all of society and enterprises to work quicker, generate and manage more interdependencies, and operate on global marketplaces. Clearly, these new trends are supporting the creation of powerful social networks and virtual communities, influencing web site design, and enhancing the competitiveness of companies in general, as well as transforming business models in all industries [41]. The expansion of virtual social networks such as LinkedIn, Facebook, Twitter, and Youtube, as well as all types of virtual communities in general, has been significant in recent years. Their influence, on the other hand, is wide-reaching and "is becoming increasingly widespread, with activities spanning from economic and marketing to social and educational". In this spirit, we may discuss enterprise networks, professional communities, e-business platforms, research networks, education networks, customer, supplier, and friend networks, and so on. When analyzing Web 3.0 technologies, take into account the negative effects of autonomous machine communication, data harvesting, and information generation [42]. The following are examples of homogenous vulnerabilities:

1.   Unwanted application performance owing to continual upgrades.
2.   Over-reliance on third-party services, or depending only on server-side security.
3.   Malicious assaults resulting in the loss of private and personal information.
4.   Inefficient use of organizational resources.
5.   A shortage of competent technicians to enable appropriate operation and monitoring of intricate systems and applications owing to non-compliance with regulatory governance and the risk of legal action.

4.2. Voluntary Outsourcing
The relevance of people's engagement in the entire company process, not just consumers or workers, is best demonstrated in "crowdsourcing," a popular business model in the Web 3.0 era. In this research, crowdsourcing is defined as the process of outsourcing a job or a specific activity normally handled by a company's employee or contractors to a big number of individuals or a community (crowd or mass) over the internet, through an open call. In the June 2006 edition of the computer magazine Wired, Jeff Howe created the phrase, which is also defined as "the outsourcing of jobs to the wider Internet population". It "describes a new web-based business model that harnesses the creative solutions of a distributed network of individuals through what amounts to an open call for proposals," with the goal of "animating individuals to contribute to the firm's production process for free or for significantly less than that contribution is worth to the firm" [43]. Customers are regarded "coworkers" in the manufacturing process, as are numerous stakeholders who are not employees of the firm. This has mostly emerged as a result of the growth of social networks, which has allowed labor to be outsourced to the general public with a wide range of payment and reward systems for contributions [44].

5. CONCLUSION

Web 3.0 is more than just a collection of innovative technology and applications. Web 3.0 technologies provide a variety of services that can help you create a realistic marketing approach. Web 3.0 services will have a favorable influence on marketing due to their very nature. 3D-wikis, 3D Labs, Intelligent Agent-based search engines, Virtual environments such as Avatar, and Semantic Digital Libraries are all advantages of Web 3.0 technology. In such Web 3.0 vision, such ubiquitous technologies will create a convergence of real and virtual worlds, allowing users to engage with people and machines effortlessly, whether through virtual means or in the real world, whilst users will be rewarded either for their content or their time spent, directly from advertisers. These advantages may be immediately linked to existing online marketing best practices, resulting in a more verified and successful business environment. Web 3.0 isn't only a more customized Web; it's also a Web with more opportunities and risks. The essay also discusses the technological transformations and new business models that are emerging in the new Web 3.0 setting, as well as their impact on firm competitiveness.

In the modern environment, the document also emphasizes the necessity of not just technology, but also the critical use of networks, as well as the management of collaboration and human engagement. It has also considered the significance of involvement and collaboration coming from a wide range of stakeholders. The study concludes by emphasizing the necessity of community management and crowdsourcing in increasing firms' competitiveness in order to boost reputation, involvement, customers' engagement and cooperation. In terms of community managers, the study examines their roles by highlighting three important points: improving the organization's marketing, promoting events and products, and increasing its reputation; improving the company's management by developing metrics for communities and networks, interpreting key success factors, and assisting organizations in developing product and process strategies; and, finally, encouraging stakeholder participation and collaboration in order to improve crowdsourcing processes at various points along the value chain.

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