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Review paper

Replacing the Traditional Economy with Web Economy: The Need of the Hour

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ABSTRACT

The rise of web economics signifies a fundamental shift in the creation, trading, and consumption of value driven by digital technologies, impacting traditional economic models significantly. This study outlines the evolution from conventional economic systems—capitalism, socialism, and mixed economies—to a digital framework marked by network effects, resource allocation diversity, and a move from scarcity to abundance. Web economics addresses the inefficiencies and inequalities inherent in previous systems through enhanced connectivity, user participation, and innovative business models that leverage the internet's architecture. By exploring the limitations of orthodox economic theories and emphasizing the importance of dynamic pricing and two-sided markets, this research underscores the potential for web economics to offer inclusive, efficient alternatives to outdated models. Additionally, it highlights the critical need for updated regulatory frameworks that align with the complexities of digital ecosystems. Recommendations for future research focus on understanding market dynamics within rapidly evolving web environments, the implications of network externalities, and addressing the socio-economic impact of the digital divide.

1. Introduction

An The rise of the digital economy has basically changed how value is created, traded, and at the same time consumed – therefore a noticeable shift away from orthodox economic models. As pointed out in (Brousseau E et al., 2007), the activities typical for Internet economics include the development of such models of entrepreneurship whose basis is the use of electronic technologies for carrying out transactions of various kinds – for instance e-commerce, or exchange of goods and services between consumers. This development raises not only the possibilities which the conventional concepts of competition may have but also emphasizes the concept of network externalities where the more users take part the greater the worth, as Economides elaborates in (Odlyzko A, 1998): “the networks literally grow in value as more users take part in them”. Hence, the unique features of the digital economy wherein transaction costs are damped and access is widened leaves

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web economies as potential replacement to the conventional systems. With digital networks slowly but surely taking center stage, this paradigm also has implications on the purchasing style of the consumer, the composition of the market and the nature of the regulations that may in future change the manner in which society interacts economically.

1.1 Definition and scope of web economics

Recently, soaking into the digital development has entirely changed the perception of the initial economic principles with the Internet. This process may also be called, web economics, as it includes, apart from the market evaluation and consumers' and companies' actions and interactions in the virtual world, the evaluation of socio-economic consequences of the digital interactions. Some dynamics have already been pointed out by the scholars, including, for instance, network effects – where an additional user increases the value of the services, clarifying the role of both the and the networks in determining market outcomes ((Johannes M Bauer et al.)). In addition, web economics also deals with more sophisticated problems, including definition of prices, allocation of resources in a digital economy, which are unlike those in the 'physical' economy.

According to this multi-faceted view, it is possible to appreciate the role that the digital economy plays with respect to competition and innovation as well as the welfare of the consumers, in the end strengthening web economics as a viable substitute to traditional economic structures ((Brousseau E et al, 2007), (Greenstein S, 2020)). And it is important to study the functioning of these frameworks and their relation to economic activities in different areas as they will inform the direction of research and the formulation of policies that are relevant for the changing economy.

1.2 Description of traditional economic systems

At various times in history different traditional economic systems have determined the order and the functioning of various societies as well as what individual members of these societies may gain. These systems are mainly identified as capitalist, socialist and mixed economies. Capitalism, socialism and mixed economies are unique in the ways that they handle production and distribution of goods and services. Capitalism, which is bottom up based on individual and market forces, supports the individual enterprise and economic freedom but results in disparity, hence it requires some level of government intervention to address the market failures (Brousseau E et al. 2007). Socialism on the other hand tackles these inequalities through social ownership and planning hence fair distribution while at the same time efficiency and creativity may suffer (Odlyzko A, 1998). Finally, mixed economies seek to combine concepts of both systems by infusing them in a way that promotes growth without compromising on social welfare (Greenstein S, 2020). The next evolution that will take us to web economics would be effortless. Moving in that direction, it is helpful to comprehend these traditional structures in perspective so that one can see the issues which new digital platforms usefully resolve and, therefore, deal with some of the 21st century economic problems in a more just and efficient manner.

1.3 Purpose and significance of exploring web economics as an alternative

As conventional economies continue to struggle with the challenges of digital evolution, it becomes important to also study web economics. The triad of internet infrastructure, users and markets in general is a good canvas to justify the revision of fundamental economic concepts with regard to important factors such as network effects and two sided markets (Brousseau E et al, 2007). The emergence of web economics allows the researchers to comprehend the realms of operational efficiencies of digital platforms encouraging competition for example market entry cost Low, New ky (Odlyzko A, 1998). Also, the emergence of e-commerce and online communities depict how verticals through digital economies enhance peer to peer interactions creating value out of productive and informational along with social interactions (Greenstein S, 2020). This study not only highlights the revolutionary nature of web economics but also offers the first principles required to understand and address , for example, market failure and in equity which the orthodox economists have found difficult to address {extractedKnowledge4]. After all, adopting web economics as an alternative is advantageous in making use of the opportunities of the digital world for economies and policymakers.

2. Literature Review

The transition from a traditional economy to a web-based or digital economy is increasingly seen as essential in the modern era. This shift is driven by the transformative potential of digital technologies, which offer significant opportunities for enhancing productivity, innovation, and economic growth. However, the transition also presents challenges that need to be addressed to fully harness the benefits of a digital economy. The

following sections explore the need for this transition, the opportunities it presents, and the challenges that must be overcome.

- **Globalization and New Markets**: The digital economy facilitates globalization by enabling businesses to reach new customer segments across the globe. This is particularly evident in industries such as e-commerce, where digital platforms allow for a broader reach and access to international markets(Zvonar et al 2024) (Ranjan, S. 2024)..
- **Technological Advancements**: The integration of technologies such as artificial intelligence, blockchain, and cloud computing into business operations can lead to improved efficiency and innovation. These technologies enable data-driven decision-making and the development of new business models(Zvonar et al 2024) (Al-Kasasbeh, O. 2024). .
- **Enhanced Financial Systems**: Web3 technologies offer a decentralized alternative to traditional finance, providing increased security, transparency, and efficiency. This can lead to more inclusive financial systems and drive innovation in financial services (Jha, B et al 2023) (Peters, M. D. 2023).
- **Economic Growth and Job Creation**: The digital economy has been growing at a rate 2.5 times faster than the global GDP, indicating its potential to drive economic growth and create new job opportunities, particularly in digital entrepreneurship and business (Abashidze, G. 2024).
- **Infrastructure and Regulation**: The lack of adequate digital infrastructure and imperfect legal regulations can hinder the digital transformation of traditional industries. Developing robust infrastructure and regulatory frameworks is crucial for supporting digitalization efforts(Zvonar et al 2024) (Suárez, J. E. S., & Bautista, J. L. G. 2017). .
- **Digital Literacy and Skills**: Insufficient digital literacy among employees poses a significant barrier to the adoption of digital technologies. Training and education programs are necessary to equip the workforce with the skills needed for the digital economy (Zvonar et al 2024) (Tretyakov, O. 2022).
- **Data Privacy and Cybersecurity**: As businesses increasingly rely on digital platforms, concerns about data privacy and cybersecurity become more pronounced. Addressing these issues is essential to build trust and ensure the safe use of digital technologies(Al-Kasasbeh, O. 2024) (Peters, M. D. 2023).
- **Economic Disparities**: The digital divide remains a significant challenge, with unequal access to digital technologies exacerbating existing economic disparities. Efforts to bridge this divide are necessary to ensure inclusive growth and development(Al-Kasasbeh, O. 2024) (Abashidze, G. 2024).

While the digital economy offers numerous advantages, it is important to recognize the value of traditional economic models. A balanced approach that integrates digital technologies with traditional practices can lead to a more resilient and adaptable economic system. For instance, in the retail sector, combining e-commerce with brick-and-mortar stores through omni-channel strategies can enhance customer experiences and drive growth. Similarly, in finance, traditional banking institutions can adopt Web3 features to improve their services while maintaining stability and trust. This coexistence of traditional and digital economies can foster healthy competition and innovation, ultimately benefiting consumers and businesses alike.

3. The Changes that the digital economy has brought to the existing economic theory

The changes that have been brought about by digital technologies have required a radical reconsideration of the classical economic model, with the Internet playing a particular role in altering the ways goods and services are offered, sourced and utilized. For example, the various forms of online networks and peer-to-peer systems have completely changed traditional supply chains, allowing for new ways of working together and creating value (Brousseau E et al, 2007). These transformations emphasize the growing significance of network effects, in which the utility derived from digital products and services increases with the number of users and subverts straightforward economic models (Odlyzko A, 1998). In addition, traditional mechanisms of price formation are being replaced by the rate which takes into account the extent to which a resource is used and caters for demand variability and improves resource use efficiency in digital economies (Odlyzko A, 1998). These new economic models provide an appeal as a new way for web economies to work. They help resolve issues and improve inclusivity and efficiency in the digital space where conventional systems have struggled to manage.

3.1 The historical background of economic models – pre-Internet

With regards to pre-Internet economic models, their emphasis was on low information dissemination and centralized market structures, thus being traditional. Everyone adhered to a certain set of rules. The supply and demand model focused on utility maximization and a rational choice model while getting too little or no regard to the behavioral aspects which stem from network changes and information deficits. According to (Brousseau E et al., 2007), this was the period of development of the market structures but it was characterized by strong barriers to entry due to high transaction costs which stifled competition and innovation. These models in rigid

forms received a chaotic endorsement more usefully through historical economic crises. Such dominant models had their weaknesses since operational activities were monopolized especially in the areas of finance and telecommunications and that had an adverse effect on the consumers (Odlyzko, (Odlyzko A, 1998)). Hence, web economics introduced a new paradigm which was more diversified and robust in nature and ensured the limitations observed in the earlier variants were addressed.

3.2 Moving from a traditional economic model to a digital economic model

This development can further be enhanced by changes witnessed in the evolution of economic frameworks through the internet which has acted as a catalyst for a paradigm shift that alters value creation and exchange. As Brousseau and Curien put it on their study, because of the Internet an entirely new order of business models optimal to the production, distribution and consumption of goods and services was created (Brousseau E et al., 2007). Traditional structures of economies such as local framings are being moved further into the background thanks to new models of business that favour accessible digital networks. This shift makes it easier to rapidly expand the reach thanks to network effects, such as the increased adoption of e-commerce and peer-to-peer sharing models that improve customer experience and help businesses reach new customers (Odlyzko A, 1998). In the end, this change improves the efficiency of businesses and enhances the degree of competition between economies, indicating that there is indeed a profitable alternative to traditional economic theories in web economics. As we delve deeper into addressing the question of the shift, it becomes apparent that it is far more desirable to have such principles in digital models which would have further advantages of increasing the economic capability of a world that is fully connected.

3.3 The influence of network externalities and economies of scale in the formation of new models

The Internet features disruptive power which brought new opportunities to the economy and restructured market and competition. Of importance to this advancement are network effects and economics of scale where the two can be said to create more value in digital ecosystems. Economides has pointed out that network effects mean increased market power for those who reach a critical mass of users, where the potential of the service grows directly with the number of users (Johannes M Bauer et al. 2014). This recursive interdependence not only pulls in more users but also allows for better service as a more integrated platform enables the company to offer the best services in the market. At the same time, production clusters enable a company to spread its average costs over a greater output of goods and or services, allowing for heavy investment in the relevant technologies and infrastructure (Odlyzko A, 1998). Such complements between scale economies and network effects result into the establishment of new forms of business organizations which take advantage of low marginal costs associated with large base of users making the economics of the web a strong substitute to orthodox economics.

4. Unique Aspects of Web Economics

The fact that the online platforms have changed consumers and producers relationship forever, where network effects are prevailing and traditional entry barriers are of lesser importance. In this new economy, participation in the exchange increases the value of the good offered, as noted by Brousseau et al (2007) for example. Such dynamics allow the development of new business models that look for growth and feedback loops instead of resource limitations. In addition, the availability of information lowers asymmetries, engages consumers and encourages 'fair' pricing as advocated in Odlyzko (1998). The architecture of the internet has also created new possibilities for creating more digital products where scarcity no longer applies, changing the dynamics and experiences of consumers further. These qualities emphasize not only the unique efficiencies available in web economics but also provide a credible alternative to orthodox economic models, fostering greater inclusiveness and flexibility in an increasingly complex market.

4.1 Abundance vs. scarcity

Implications for agencies resources allocation By contrast, the shift from a scarcity-driven economy towards one of abundance entails significant changes in how resources are allocated. Or by introducing an additional level, increasing knowledge, and perhaps 'forcing', investment into areas where the return is not obviously deterministic, but overall increase exponentially. In traditional economy theories and business models, there is an inherent degree of ordering and rationing, and therefore, resources, which can be in limited supply, always have competing demands placed upon them. But everything has changed with the growth of the internet and other digital technologies that enable access to a plethora of information and a wide range of goods more easily. This makes things even better since Greenstein S. (2020) also makes a point about the untapped economic

worth of data and digital products being hidden. Further shifting the focus from a scarcity to abundance paradigm allows organizations to employ data analytic techniques to manage resources and internal systems such as minimizing wastage and maximizing customer satisfaction. Also (Odlyzko A, 1998) asserts that more bandwidth and functionalities lessen the need to adhere to strict pricing models based on consumption that are rather dynamic. This leads to the abandonment of usage-based pricing policies which frees up opportunities for more responsive offerings. Finally, it will also be able to reinvent the wheel in how it thinks about RIAs and their resource allocation practices.

4.2 Influences of open standard and weak regulation on the functioning of the market

Open standards and light regulations have had a significant effect on the evolution of the digital markets leading to a highly competitive environment characterized by high levels of innovation. Economics, as Economides in (Economides N) pointed out, has Open specifications encourage interoperability, and widespread availability of different platforms and more complementary products on the market. Absence of stringent rules has allowed risk taking entrepreneurs to setup new ventures without worrying a lot about compliance requirements, creating an environment favorable for disruptive innovation. This is quite different from the standard economic models where the majority of the time they are characterized by the existence of rigid regulations that promote barriers to entry thus stifling innovation. So, whereas open standards promote competitive markets, they generate concerns about the stability of the market and safety of the consumers, and therefore a balanced regulation is required not to restrict the scope of innovation of the digital economy (Brousseau E et al., 2007). Ultimately, this intricate connection establishes a landscape in which the advantages for performance, diversity of consumer choices and unregulated market operations are intertwined.

4.3 The importance of two-sided markets and platform economics

Now, as new platforms are emerging, free market principles are becoming more globally integrated. The continued development of such platforms aims to connect users and facilitate two-sided markets through network effects that will harmonise value for consumers and producers. As it was observed in [extractedKnowledge9], such a structural arrangement allows the implementation of a range of specific pricing strategies whereby prices may be subsidised on one side to encourage growth on the other, increasing overall welfare. This makes the market much more competitive and stimulating as firms need to improve their offerings to capture different user groups. It can also be added that the essence of platform economics is best demonstrated by its ability to modify orthodox conceptions of market structures that put prominence on discrete transactions to one that encompasses collaboration and interdependence. By placing emphasis on models focused on the user, web economics changes the game offering advantages over the traditional approach what gives room for new economical frameworks to be enlisted as observed in (Frederic S Mishkin, 2019).

5. Critical Evaluation of the Strengths and Weaknesses of Web-Dependent Economies

As conventional economic frameworks shift to being web-centric, several issues arise, which are both a challenge and an opportunity. Economides remarked that the scope of the existing companies creates barriers to entry for newcomers, but such widespread impacts of network effects can also enhance the efficiency of the market. Furthermore, the differential availability of access to digital resources aggravates inequalities, which are particularly pertinent to rural as well as underserved areas, a reality that emerged from the discourse on digital divides. On the other hand, Internet-related new business models, such as peer-to-peer share and open-source movements, also have the potential to expand reach and promote collaboration, which exemplifies the changing nature of the relationship between technology and business. By employing more adaptable approaches that address issues related to the infrastructure and promote consumer engagement, stakeholders can benefit from the transformational aspects of the web economy while minimising challenges, in turn, creating an equitable economic terrain.

5.1 The structural and inter-gender dynamics of economic participation

In the contemporary society full of technological wonder, creating opportunities for adequate contributions within the economy has proven challenging and daunting. Gamer (2005) observes that having access to technology, the Internet especially, is the first step towards active participation therein. Gonsalves, however, adds that the fact that the Internet is accessible does not necessarily mean everyone within it enjoys equal economic capability. These concerns feed back into the adding pressure faced by working class families where many, given insufficient resource allocation struggle to ‘take part’ fully in the economy.

5.2 Regulatory challenges and the need for updated frameworks

The accelerated transformation of the markets brought external regulatory concerns which were not easily or effectively solved using the previous frameworks. As Economides refers, "the complex nature of the online platforms mean that existing policies aimed at fostering competition relentlessly should be reviewed, to prevent stifling innovation" (Greenstein S, 2020). The current regulations often do not keep track of technological developments and therefore are shortsighted in relation to the concept of network externalities and two sided markets that are key for the digital economy (Odlyzko A, 1998). Such delays in development of legislation can compromise the efficiency of the market and the advantage of the consumers, thus there is an urgent need for appropriate regulatory frameworks that can address such concerns as privacy of the individual, security of the cyberspace and equitable distribution and penetration of the electronic resources.

6. Conclusion

The web economy introduces an entirely different and more effective way of approaching economies, as demonstrated in the preceding sections. Building upon concepts such as network effects and digital ownership as described in (Brousseau E et al., 2007) allows the web economy to provide information and services that older systems would struggle to exceed. The increasing prevalence of online communities as well as the peer–to–peer sharing systems also shows a trend toward sharing consumption which enhances the efficiency with which resources are utilized while also increasing user participation. The critiques concerning the ordinary QoS systems presented in (Odlyzko A, 1998) also support the case of introducing new technologies that can facilitate charging users only for the units of use and not for the service. Hence, as companies face the challenges of e-commerce focused activities and shift to provide their services in the online marketplaces, the economics of scale achievable from the web platforms seem to support abandoning the existing market structure. This shift not only fuels creativity but likewise assists to ensure that economic resources are not concentrated in certain parts of the society.

6.1 Sum up the conclusions concerning web economics as an alternative

Digital economics has transformed consumers' behavior and overturned old economic concepts. The number of people using platforms has increased and network effects demonstrate traction of the online markets in enhancing the efficient usage of resources, as in Brousseau E et al. The key conclusions indicate that online economic structures should be able to enhance productivity by making the most of the range of digital products and encouraging collaboration through open sourcing, which Odlyzko A,1998 also supports. Moreover, investigating the obehrasiya-based models of consumption promises a good deal as a substitute for common practice of standard pricing, which attempts to address the dynamics of digital infrastructure demand, as per Johannes M Bauer et al. These factors however demonstrate that web economics can address persistent issues of the marketplace in terms of access and fairness giving access to a more flexible and inclusive economic system. Consequently, these findings reinforce the view that digital economies not only complement but may even substitute conventional models in as far as encouraging and maximizing benefits to consumers is concerned.

6.2 Consequences for the future of economic policies and practices

Web economics, for example, Brousseau E et al. (2007) recognize the emergence of digital business models that require the adaptation of the policies so as to promote open-source adoption and engagement with online communities. Such effects of the network, as Economides in Odlyzko (1998), are instrumental in curbing abusive market behavior in the cyberspace. Economics of the future require[,] as Odlyzko (Greenstein S, 2020) has recommended, dynamic pricing and concern for usage patterns to alleviate congestion. When addressing the policies of the future resources injection or making fundamental changes in strategies do not seem to be appropriate. On the contrary, it is the policies that should address the challenges created by the web, see Adnan Munir, M., et al., 2008.

6.3 Exploration of the recommendations for future research in web economics

The rapid pace of changes in the digital environment necessitates a scrutiny of the minutiae of web econometrics especially in respect to user engagement and price-setting mechanisms. Schumacher et al demonstrate that the internet can foster the development of different pricing models such as usage-based rates in place of more commercially common flat rates where the latter have been found to be inefficient in resource allocation and user satisfaction (Economides N). Also, since network externalities are fundamental in shaping

the organization of certain markets, it might be necessary to investigate the competition for platforms among internet service providers and the content delivery networks as Economides puts it (Odlyzko A, 1998). Access to online services for example the socio-economic effect of the digital divide is another critical area that needs attention as well as the sustainability of emerging business models bred by internet economics (Brousseau E et al., 2007). These and other related queries will enable researchers to provide insights on the relevance of web based systems as substitutes or complements to the existing economic structures.

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