

MITIGATIVE MEASURES AGAINST THE ECONOMIC AND SOCIAL PROBLEMS IN POST-DIGITAL ECOSYSTEM

Introduction

Today's effective and efficient production processes are expected to bring abundance. But they would cause the crisis because people who demand products are losing their jobs. This phenomenon is the gridlock of the post-digital ecosystem². In the post-digital ecosystem, productivity increases with the development in the automation and artificial intelligence technologies. Widespread automation and artificial intelligence technologies enable the business processes around the world to use less labour force³. Then, an increase in productivity causes an increase in unemployment. As a result, the purchasing power of consumers is decreasing. In the present capitalist economic system, there is no solution to this problem. Therefore, this phenomenon is called as a vicious cycle⁴. Until the collapse of the capitalist economic system, this vicious cycle will continue to loop⁵. The distinctive feature of this new economic system characterises the increase in productivity and the decrease in costs that occurs as a result of automation technologies⁶. In digital economy, information became the most important production factor and the importance of capital and labour gradually decreased⁷. In 1930, John Maynard Keynes mentioned Technology-related unemployment⁸. He suggested that there would be no need to work in the future abundance economy. He called the future as the age of leisure. Jeremy Rifkin, in his book *The Zero Marginal Cost Society: The Internet of Things, the Collaborative Commons, and the Eclipse of Capitalism* also described the future as an abun-

¹ Mustafa Emre Civelek, Ph.D., Assistant Proffesor, Istanbul Commerce University, Istanbul, Turkey. ORCID: 0000-0002-2847-5126.

² M.E. Civelek, *Humans of Machine Age: Management Strategies for Redundancy*, "Journal of Industrial Policy and Technology Management" 2018, 1(2), s. 87–98.

³ M. Ford, *The Lights in the Tunnel: Automation, Accelerating Technology and the Economy of the Future*. Acculant Publishing 2009.

⁴ M.E. Civelek, *İnternet Çağı Dinamikleri*, Beta, Instanbul 2009.

⁵ M.E. Civelek, *Humans of Machine Age...*

⁶ M.E. Civelek, *İnternet Çağı...*

⁷ M. Ford, *Rise of the Robots: Technology and the Threat of a Jobless Future*. New York: Basic Books 2015.

⁸ J.M. Keynes, *Economic Possibilities for our Grandchildren*. J.M. Keynes içinde, *Essays in Persuasion*, New York: Palgrave Macmillan 1931.

dance economy. According to Rifkin, in the future, production will be performed in small units instead of in big plants. He predicts that the mass production age will end. People will be able to produce some products and free energy in their own facilities. People have also started to use three-dimensional printing technologies in their houses⁹.

Some scholars use the name crowd-based capitalism for the new sharing economy which is regarded as an alternative to the capitalist economy¹⁰. If capitalist system collapses, the excess fiat money created until now should be revoked and extracted from economic system. Today, as a disruptive technology, blockchain may radically change the money perception by eliminating third-party intermediaries and controllers such as banks and governments. According to some proponents of cashless economy, blockchain technology is a decentralized alternative to banking system¹¹. In this cashless trade system, the definition of trade will also change. Trade in machine age will transform into the exchange of the goods produced by machines. Main purpose of trade in this new economic system is to meet human needs. Therefore, money will gradually be replaced by the importance of needs. With the extinction of privacy, machines will establish control on the needs of human by directing them in social media. Therefore, in the post-digital ecosystem, another important problem is the extinction of the privacy. As social media usage has increased, people have been more visible and enjoyed increased personal influence but they eventually trade off their privacy. Security and traffic cameras, biometric identification devices (including cellular phones), mapping softwares continuously collect personal information of people. Today, individuals are under total surveillance. Big data analysis techniques allow software companies to know their customers better than they know about themselves personally. Avoiding this total surveillance is almost impossible for an ordinary person nowadays. Consequences of total extinction of the privacy may be harmful to human's mental health. But, humanity has no choice other than surrendering to this phenomenon.

These developments, which will lead to an abundance economy for some people, but on the other side of the coin, mean inequality, poverty and unemployment for some people. Inequality stems from the dynamics of the post-digital ecosystem poses some threads to the economic and social structure of the countries. Fundamental philosophy of current capitalist economy depends upon inequality. Therefore, the turmoil will continue until the collapse of capitalism.

⁹ J. Rifkin, *The Zero Marginal Cost Society: The Internet of Things, the Collaborative Commons and the Eclipse of Capitalism*, St. Martin's Press, New York 2014.

¹⁰ A. Sundararajan, *The Sharing Economy: The End of Employment and the Rise of Crowd-Based Capitalism*, The MIT Press, Cambridge 2016.

¹¹ R. Girasa, *Regulation of Cryptocurrencies and Blockchain Technologies: National and International Perspectives*. Cham: Palgrave Macmillan 2018.

The Dynamics of the Post-Digital Ecosystem

In 2003, Civelek and Sözer suggested “new ecosocial system” as a new term to characterize the digital economy by considering both the economic and social aspects¹². However, beyond the new ecosocial system, humanity is awaiting a new system that can be called as the post-digital ecosystem. The term of post-digital ecosystem was discussed by Sözer, Civelek and Çemberci in 2018¹³. The post-digital ecosystem has three consecutive dynamics. In first order there is digital divide.

With the advent of the internet, in the 1990s, digital divide was recognized as a threat to the public¹⁴ and was associated with the Internet penetration¹⁵. Today, digital divide essentially means the inequality in the access to internet¹⁶. It was anticipated that digital divide would decline as the internet use would increase globally. Yet, the divide has triggered other unbridgeable inequalities. There are two more dynamics which follow the digital divide as shown in Figure 1. These dynamics constitute the basic mechanism behind the gridlock of post capitalist system. These dynamics are the main drivers of the post-digital ecosystem. The dynamics of the post-digital ecosystem were initially defined by Civelek in 2009 as dynamics of the internet age.

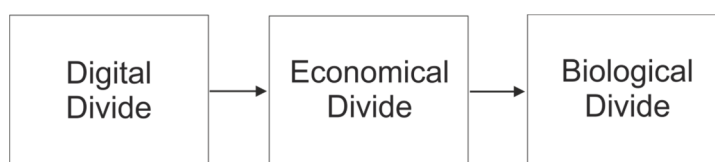


Fig. 1. The dynamics of the post-digital ecosystem (Civelek M., 2009)

Source: M.E. Civelek, *İnternet Çağı...*

People on the negative side of the digital divide have mostly lower income¹⁷. Income is also related to broadband connections¹⁸. There is a strong relationship between the income level and internet access¹⁹. Individuals who have good eco-

¹² M.E. Civelek, E.G. Sözer, *İnternet Ticareti: Yeni EkoSosyal Sistem ve Ticaret Noktaları*. İstanbul: Beta Basım 2003.

¹³ E.G. Sözer, M.E. Civelek, M. Çemberci, *Strategic Excellence in Post-Digital Ecosystems: A B2C Perspective*, University of Nebraska Lincoln-Zea Books, Lincoln 2018.

¹⁴ P. Norris, *Digital Divide: Civic Engagement, Information Poverty and the Internet Worldwide*, Chambridge University Press 2001.

¹⁵ J. Zhou, G. Salvendy, *Human Aspects of IT for the Aged Population*, Springer, 2015.

¹⁶ M. Danesi, *Encyclopedia of Media and Communication*. Toronto: University of Toronto Press 2013.

¹⁷ R. Azari, *Current Security Management & Ethical Issues of Information Technology*. Hersley: IRM Press 2003.

¹⁸ L. Green, *The Internet: An Introduction to New Media*. Oxford: Bloomsbury Publishing 2010.

¹⁹ C. Kramarae, D. Spender, *Routledge International Encyclopedia of Women*, Routledge, New York 2000.

conomic status can have access to information more effectively because digital divide results in imbalance with regard to access to information. In the post-digital ecosystem, information is the most important production factor. Therefore, the imbalance in access to information causes unequal income distribution. Solving the unequal income problem will be much more difficult than closing the information gap. The wage gap between technology intensive industries and labour intensive industries is widening as well. All the routine and repetitive works have recently been taken over by machines. Therefore, demand for labour has decreased in labour intensive industries. Only individuals who have mastered information technology will have the opportunity to work, and all routine jobs will be left to the machines. Today, industrial workers are mostly responsible for the maintenance of machines. The same replacement is continuing in office works. In the future, however, most professionals such as those on the top management, or ones who are surgeons, engineers, and airline pilots can be replaced by machines²⁰. Concisely, individuals who use technology effectively become economically advantageous. As shown in Figure 1, the division between individuals begins with a digital divide turns into an economic divide. Individuals, who are economically strong, can attain a longer life opportunity in the future, owing to the progress in medical technologies. Economically strong individuals can thus lead a healthier life. This phenomenon has been named as the biological divide by Civelek in 2009²¹. By means of medical progress and invention of biotechnical applications, humanity is going towards immortality²². This phenomenon namely biological divide will eventually cause unpredictable social problems²³.

Measures against the Problems

In order to stabilize inequalities that stem from the dynamics of post-digital ecosystem, moderate government intervention is inevitable. As governments increase their influence on economy, companies will have to change their ownership and capital structure. More collective structures should be established by means of token economy and crowd financing. Government intervention to unemployment problem is critical. Universal basic income would be a remedy. The following five measures can be suggested to mitigate the problems in the dynamics of post-digital ecosystem and facilitate the transition to the abundance economy:

- The first measure – Governments should encourage investments with regard to artificial intelligence. Need for the human intervention to the business processes should completely be eliminated.

²⁰ J. Fresco, *Designing the Future*. Venus: The Venus Project, 2007.

²¹ M.E. Civelek, *İnternet Çağı...*

²² R. Kurzweil, *The Singularity is Near*, Viking Penguin, London 2005.

²³ M.E. Civelek, *İnternet Çağı...*

- The second measure – Governments should invest in renewable energy facilities and allow the firms to produce their own energy. Energy should be supplied to the production centres free of charge.
- The third measure – Governments should encourage investments in the Internet of Things, 3D printers, autonomous driving technologies and robotic warehouses etc. Bringing transportation charges to a minimum level. Besides, waste of time due to transportation should be eliminated from the supply chain.
- The fourth measure – Governments should intervene in the production processes in order to reduce the importance of the capital among other production factors. Then, profit pressure will be removed on the price of the products.
- The fifth measure – Governments should reduce economical divide. All citizens would be paid a universal basic income. The government can use universal basic income as a social control mechanism. Citizenship score can be calculated according to the contribution to the society and ethical behaviours. And basic income payments can be adjusted according to this score.

Conclusion

These five measures are important factors that will pave the way to abundance economy. Otherwise, huge political and social unrest will be inevitable in the transition from capitalist economy to abundance economy. Besides this, some economies will encounter total collapse and chaos. Yet, achieving to set up abundance economy is a new start for new problems related to redundancy. To cope with these problems, governments can use the universal basic income as a social control mechanism. Furthermore, citizenship score can be measured; and income can be adjusted accordingly, based on this score. In this way, it will be possible to encourage citizens to contribute to their society. In future sharing economy, consequently, an economic model that is more collective and open to government intervention will be needed.

These five measures suggested in this paper are not an exact solution for the inequality stemming from the dynamics of the post-digital ecosystem. They are only proposed to mitigate the problems in the transition to abundance economy. But abundance economy would not mean equal well-being as optimistically proposed by some scholars. Rising machine intelligence will bring about further unexpected consequences. In the future, governments may have to consider how they manage redundancy. In the redundancy age, governments should control aimless crowds. Social control will increase by means of citizen scoring technologies and extinction of privacy. Citizen scoring technologies can be used as a coercive power on the population. Countries which cannot succeed in raising

abundance economy will struggle against serious economic and political problems.

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