

Mustafa Emre Civelek | ecivelek@ticaret.edu.tr
Istanbul Commerce University, Istanbul, Turkey

Threats Beyond the Digital Divide in the Post-Digital Ecosystem

Abstract: Today there are unprecedented changes in technology. Robots replace the humans and take over the jobs continuously and increasingly. Unemployment is inevitably spreading into the world. Despite the developments in technology, digital divide continues its existence especially in developing countries, and beyond the digital divide economical and biological divides take place. Within this new ecosystem, there are numerous threats. The purpose of this article is to draw attention to these emerging threats.

Keywords: Post-Digital Ecosystem, Digital Divide, Economical Divide, Biological Divide.

Introduction

Recent developments especially in artificial intelligence technologies allow the enterprises to execute their operations with fewer employees even without human. The manufacture of products at a lower cost is expected to bring, abundance, and cheapness but it would bring the crisis because the people who will consume the products are losing their jobs. Enterprises are much more productive today but competition in the environment higher than before. This phenomenon can be called a vicious cycle. Because existing economic systems cannot provide a solution to this problem. Digital economy can be defined as a new

economic system in which the increase in productivity and the decrease in costs as a result of automation technologies. [Sözer, Civelek, & Çemberci 2018]. Information is the most important production factor in digital economy. Digital economy is the economic consequence of hypertext revolution which took place in early 90s after invention of www interface by Sir Tim Berners-Lee. Today, especially in the developed countries, the system of the digital economy has been influential on the habits, lifestyles, views, and perceptions of individuals. Therefore the new system called as new ecosocial system. But beyond new ecosocial system humanity awaits a new future. We can call this new system as post-digital ecosystem.

Post-Digital Ecosystem

There three main driver in post-digital ecosystem. Those are Transformational Innovation, Neo-Customers and Social Interaction. Transformational innovation are the game changer inventions such as Uber. Neo-Customers is the consumers that transform to demand-oriented customers from need-oriented individuals. They have more demands, less time to spend, limited attention. Social Interaction means neoconsumer sharing which can be a source of nearinfinite competitive advantage for a brand, it also includes risks stem from essential massive reactions [Sözer, Civelek, & Çemberci 2018].

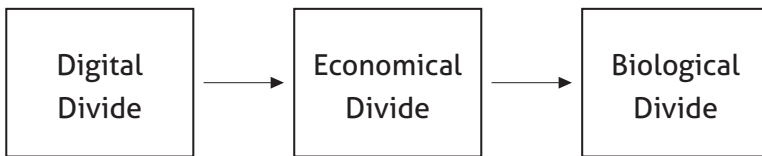
The internet, as a new technology, removes many business areas but does not create the same amount of jobs since businesses conducted on the internet need less labor force comparing classical ones. Technological developments are getting faster and product life cycle is getting shorter. The environmental uncertainties have emerged with the rise of externalities such as increasing global competition, development of new technology. The existing products have rapidly been out of date and customer demand and requirements have been changed. These developments have shortens the product life cycle [Gupta & Wilemon 1990]. With the advent of the internet these effects grow exponentially. The environmental uncertainty has also increased in customer side. The customer uncertainty can be defined as unpredictable changes in customers' demands and preferences. Especially with the advent of

social media, the customers have become more active than ever. The customer who can reach the product information very quickly can share his complaints very effectively on the internet. This is a great threat for the enterprises but in the same time it is an opportunity. Today, customers demand more options, better service, higher quality and faster delivery. Customers demand for products and services have become increasingly ambiguous [Civelek, Çemberci, Kibritci Artar, & Uca 2015].

Beyond the Digital Divide

With the advent of the internet, the concept which called as digital divide was realized as a threat to the public. Today, regarding access to information, there are essential differences among individuals who has and has not accessed to the internet. This is a serious threat to societies which could not even fully pass the first stage of the information revolution. Because there is a risk that their gap with the developed countries could be unbridgeable. But digital divide is not alone. There are three consecutive dynamics which accompany to the digital divide as shown in Figure 1.

Figure 1. Internet Age Dynamics



Source: [Civelek 2009].

Digital Divide and Digital Development Model

The digital divide can be identified as the unequal distribution of technological infrastructure usage within society and the inequality of the rate of technological literacy throughout the society. The unequal distribution of technological infrastructure is usually a problem of especially developing countries. The computer user who takes

advantage of communication facilities and use mobile technologies and be instantly informed of changes taking place in the world. On the one hand, there is a class devoid of basic communication facilities such as telephone and television. There are one billion people in the world who have not made a phone call. Such continuously widening information gap among these two classes are called to be the digital divide. There are two distinct forms of the digital divide; one is among different classes in the society; other is among different countries in the international arena. The digital divide in a country can be measured by the following three main criteria; the number of telephone subscribers, PC numbers and the number of internet users [Civelek 2009].

Figure 2. Digital Development Model



Source: [Civelek 2009].

So as to eliminate the pernicious effect of the digital divide, government should take some measures and should be successful in digital development. In Figure 2 digital development model are shown. According to this model digital development begins with the establishment of the technological infrastructure.

Individual development processes follow the establishment of the technological infrastructure. Individual development starts with the increase in personal computer (PC) penetration and continues with the increase in internet penetration. The rise in daily internet usage is one of the most important indicators of the individual development process. With increasing use of the internet, legal infrastructure related to the internet has begun to emerge as well. Along with the legal development process, an integration process among institutions is also in progress. The chaos of electronic business applications can be eliminated through the integration of systems of corporations that communicate with each other in the electronic environment. The establishment of legal infrastructure together with individual and institutional development

processes will initiate transformational processes in society that we call a new ecosocial system [Sözer, Civelek, & Çemberci 2018].

Economic Divide

The imbalance in access to information will also cause the growth of the divide in income distribution. But unfortunately closing the economic gap between the individuals in the future is much more difficult than closing the information gap. There is a relationship between income level and internet access. Because information transforms into a production factor in digital economy. In other words, those who have good economic status can access the information more effectively, and the economic divide widens as the fewer income people cannot access to the information. The difference in wages per employee between industries operating in the field of information technology and other industries is increasing every year. Today, all the routine works are taken over by machines. Only a very small number of individuals who have mastered information technology in companies will have the opportunity to work, and all routine jobs will be left to the machines. Today, it can be seen that all the stages of production in certain industries are made by machines. The plant workers are usually responsible for maintenance of the machine. The situation is similar in office work. As be seen in Figure 1, the division between individuals begins with a digital divide resulting from the difference in technology use among individuals, and then into an economic divide, as individuals who use technology effectively become economically advantageous.

Biological Divide

In the future, the individuals who are economically strong can reach a longer life owing to the progress of medical developments like stem cell technology. The rich can have a healthier life. This phenomenon can be called as the biological division. Through biotechnical applications and medical progress, humanity is going towards immortality. With cybernetic applications mechanizing people, cyborgs will be real. While computers are being humanized, on the one hand, humans are being computerized, on the other.

Emerging Threats in Post-Digital Ecosystem:

- The people who are economically strong can reach a longer life. This cause social problems.
- With the development of long living possibilities, the proportion of the elderly to the whole population reaches a level that never reached in world history.
- Parents can choose the nature of their children. This causes imbalance in population.
- Parents may have the opportunity to raise the intelligence of the child to be born, causing the formation of a separate class or even human species over time.
- The risk of destruction of the food chain by the genetically modified plants.
- The emergence of half-human half-machine creatures by the development of cybernetics.
- Use of robots capable of killing. Nowadays, some countries are carrying out some projects on robot soldiers in armies.
- Robots take over the jobs. Unemployment can be a business in the future.

Conclusion

This paper aims to shed light on some dystopian scenarios, which can be reality in the future. It remains unclear how the digital economy continue its evolution and in which way to change the world in the future. Besides the developments experienced in areas such as genetics and medicine are very important. When other problem like global warming, excessive population growth added, it is difficult to make predictions about the future. At least some parts of the emerging threats are inevitable. World public opinion should become conscious about these threats.

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