Bünyamin Ayhan (ed.)

Digitalization and Society

PL ACADEMIC RESEARCH

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This book presents a collection of papers by researchers from several different institutions on a wide range of digital issues.
Digitalization describes the phenomenon of how knowledge is processed and the processed knowledge provides social transformations beyond digitization, interaction, annihilation of time and space, the phenomenon of usage in multimedia. Transformed is not only the society but also its mentality. Digitalization reveals a sui generis digimodern process by processing modern structures with the help of compulsory tools. This process is a reconstruction of social structures and institutions on the basis of the digitalization perspective. Each social institution adapts this process and provides a contribution to the digitalization of society.

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Preface

This book was contemplated as the first volume of a two book project on digitalization and globalization phenomena with a focus on changes in social institutions and their meanings. The study is a joint work of academicians from different universities operating in Turkey and started at the beginning with a very wide range of associations and nearly all of the social institutions were included in the study area. For example, from the perspective of digitalization, some of the titles are media, television, identity, surveillance and control, security, social movements, leisure, and education. Unfortunately, these titles did not take place in the study.

Problems of the academic realm convinced us to narrow the scope of the first volume. The military coup attempt of July 15, 2016 will also have long lasting effects on society in terms of politics, the economy, and more importantly, on education.

Although traditional and "postmodern" military coups were seen as historical cycles in our political system, society demonstrated a serious democratic resistance against the current coup as it was understood as a means for redesigning society by military tutelage. Naturally, the supporters of the organization that was implicated in the coup attempt which had demonstrated discourses of religion and dialogue were represented in all levels of governmental institutions close to political power and were now purged from these and other institutions. The cleaning up began in the fields of security, administration, and justice and expanded in waves to other areas. The field of education, being among the most affected fields, was faced with new conditions beyond suspension and the arrests of teachers and academics which temporarily slowed down or halted the planned work. Personal priorities and perspectives changed while the security aspect reformed everyday life and risks gained permanence. The social impact of the attempted military coup resulted in new academic effects for the study. I acknowledge the devotion of the authors and the publisher which made this volume possible, which includes eleven studies.

Digitalization allows interaction and multiple structures which make time and place relative. These are the instances when new social structures begin to function. Particularly the indispensability of technological gadgets for individuals and society shapes everyday life. Meanwhile, previous structures either disappear or change to integrate with the new ways. The peculiarities of Turkish society present different social organizational forms and structures of different features. While the rapid changes ranging from agriculture to industrialization and information

technologies in the last century in Turkey may be deemed problematic, they nevertheless prove a rich ground for scientific study and observation. That is the point where we expect original contributions of this work.

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Introduction

The development of communication technology and its interaction with religion has a controversial and conflicting history. Considering the speed and present level of communication technology's historical development, we can say that there is a media problem that is far more important than our estimation. One can say that, for the last two centuries, there has been a worldwide revolution in the means of information production and transmittance. The impact of the media, displaying a slow progress, in the beginning, has nowadays gained tremendous momentum through its own particular dynamics. Printing technology, which the Western world surprisingly came to know about as early as the beginning of the sixteenth century, has reached different dimensions with the invention of the telegraph, radio, television, video recording devices, and finally with the rise of new electronic media or communication technology such as the Internet. Thus there has been a transformation into full-fledged mass media that has the effect and power of almost instantly reshaping social life (Akgül, 2008: 40).

The invention of printing technology has been considered as a turning point in reference to the speed of technological development and transformation process, to the extent that history is divided into the 'pre-print' and the 'post-print' eras. When the radio was invented in the following centuries, the division of 'the pre-Marconi' and 'the post-Marconi' periods arose (Matelski & Liynch, 1997: xi). To distinguish present time from earlier periods, we can now use the division of 'the pre-Internet' and 'the post-Internet' time periods.

This chapter is intended to investigate the forms that religious culture has taken on in the digital age which humanity has been experiencing and which differs from the earlier ages within the framework of information, technology, and religion. It shall discuss the controversial religious differentiations taking place in the transformation processes as well as the process of religions reproducing themselves in the modern period through the media in a way that is quite different from the earlier periods. In this context, religion shall be considered in connection with its interaction with communication, technology, and the cultural world.

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The new way of living, interrelating and understanding the values that have been rationally built on modern science and technology, in spite of the great resistance by traditional religions, has mostly taken a negative attitude towards religion on the one hand. On the other hand, it has accelerated the 'religious awakening' process that has arisen all over the world especially from the 1960s onwards. However, this religious awakening shows that traditional religious forms also undergo change and differentiation from time to time. Therefore, some scholars, in parallel to the developments occurring in communication technology and with an optimistic outlook, refer to the process of change that has been taking place in the post-1960s in the sphere of religion as the 'Third Great Awakening' (Altheide & Snow, 1991: 203). On the other hand, religions and religious organizations that have stood up and reacted against modernity in the context of the interaction between communication technology and religion call the present age an 'age of degeneration'. One can find a number of examples for this phenomenon in the history of religions. The reactions developed and the positions taken by traditional religions vis-à-vis social, scientific, and technological challenges point to the issue of religion versus change as one of the most complicated areas of conflict in history. Though the debates that have been conducted in the last centuries in the context of religion versus change over secularism and the future of religion have lost their earlier vigor, they still retain their freshness and intensity to a certain degree.

To say it in the clearest terms, we are now faced with the problem of whether religion will be able to protect its original character in the face of the tides of scientific and technological progress and socio-cultural changes as it is considered to have a set of 'unchanging beliefs', an institutional authority, and a host of ritual and ethical principles, or if we now face the 'new forms' it will assume in this process (Güngör, 2006: 330). This problem requires us to address, before anything else, the religion-society relation and the nature of technological progress. On the other hand, the issue of the 'importance of religion' that has never decreased for individuals and society pushes us to reconsider the secularization theories that had questioned the religion-life relation from the nineteenth to the second half of the twentieth century.

Communication Technologies and the Changing Human Situation

Communication technologies, accompanied by the vehement wind of change that tosses our life about in the present period of time, promise humanity a 'new civilization', an 'information revolution', or an 'information society'. First of all, the progress in the field of communication technologies allows for worldwide

access to information with its full diversity, paving the way for the rise of a new network of social relations among individuals and thus leading to the formation of a new domain of social values. In the opinion of the utopists of the digital age, communication technologies will at the same time create chances for a more productive and developed employment. These, in turn, will raise the quality of work in many jobs on a micro-scale, increasing the independent and nonstandard forms of production (Hamelink, 1998: 20).

Cees Hamelink, who took part in the United Nations Research Institute for Social Development (and Information Technologies) (UNRISD), discusses the progress in communication technology from the perspective of worldwide population rates, levels of using communication technologies, technical infrastructure, and economic investment. Hamelink also makes different global comparisons in an attempt to describe the new form of the world and possible future problem areas. The most important of his findings is that more than 50% of the global population has never made a phone call. Thus, he emphasizes the contradictions inherent in the digital age and calls attention to the possible problem areas in that age. He also points to worldwide problems and inequalities such as the need for energy that will arise as a result of the increase in the use of communication technology; the inequality between developed and developing countries with respect to communication infrastructure, network, and using-skills; and other things such as hardships in technology transference, the lack of political and legal arrangement, intellectual property rights, taxation, and personal and institutional access to the digital nets (Hamelink, 1998: 21–22).

Along with the problems noted as concerns with communication technology, he also points to some positive developments. For him, the spread of the use of communication technologies, despite certain drawbacks, will produce a global homogenous culture. In addition, the encounters between different cultures will give rise to a new and creative way of life in terms of understanding each other. This foresight suggests the formation of communities of new values that could easily surpass traditional borders of religion, ethnicity, gender, and age. This will broaden new alternatives of communication (styles) to be established among communities. Moreover, could be sources of knowledge, commercial and communicative networks, securing lobbying activities, social mobility, performing the function of a democratic and viable social development.

In the same manner, education through communication technology will increase the potential of distance education and will increase people's access to libraries. The use of electronic networks will also facilitate health services by making it possible for physicians to obtain the best possible diagnosis and provide

necessary therapies to patients, while also decreasing health expenses. Communication technology will also help to develop an early warning system against possible global disasters and climate change impacts and will also help to increase the level of awareness of the most suitable and efficient agriculture production methods amongst agriculture professionals. It has the advantage of increasing our level of environmental awareness. It will also increase social awareness to decrease the rate of air pollution caused by scattered industrial facilities and will prevent the negative impacts they cause to the local environment. Last but not least, the use of communication technology will create a new free-civil domain and new global communities through the digital network. Many new social movements from non-governmental organizations (NGOs), ecological movements, feminist organization activities, and human rights activist movements will force the conceptions of local government to change and sovereignty to transform, causing the growth of democratic standards and supporting many social-civil groups (Hamelink, 1998: 21–22). The developments pointed out by Hamelink have already started to be felt all over the world.

The changes taking place in communication technology, that with its reflections in all spheres challenge the set standards of life, call for new considerations and social scientific efforts. One may wonder if the human being, to look from a pessimistic outlook, is confronted with new uncontrollable situations as a consequence of the mischief caused by "what he has done by his own hands" (Qur'an, the Chapter Rūm, 41). Or, with an optimistic outlook, does the new phase reached by science and technology, and thus by communication media, offer humanity new possibilities and achievements?

The information revolution, a term coined to refer to the present level reached by science and technology and the spread of knowledge in every field, and changes in human thought and action that are caused by progress in this field. This has rendered various points of discussions on the new era of civilization, the new network of social relations, and the new domain of social values.

When values are in question, the first thing to be noticed is the fact that new networks of social relations and social values begin to spread quickly in social life. The classical values that had for centuries served as a principal source and guide for human thought and behavior have been replaced by the new network of social relations and the scale of values, both originating from technology. In this context, we wonder what kind of relationship exists between the unchanging traditional values claiming universality and the technological development that changes human life with constant changes and novelties. In this context, we should address the processes of historical interaction and transformation that have taken

place between religion and communication technology, which have relativized the traditional understanding of values of a mostly religious origin and made claim for building an area of new values.

The Relationship between Techno-Scientific Development and Values

The relationship between technology and man is one of the major problems caused by modernity. In contrast to the traditional worldview that 'man can know what is natural, but cannot change it', the modern worldview and conception of science, putting in practice the principle that man cannot only know, but also change and thus rebuild what is natural, prevailed in the modern world. The modern outlook pitted the traditional world and man, having a relatively static rhythm of change, against the present world and process of change. The long and controversial contest for domination that had taken place between 'believing' and 'knowing-acting' resulted in the victory of technology that enabled the processes of rationalization, secularization, and modernization to know the natural and social worlds to their utmost details and to control them. Though there has been extensive theoretical debate about the pros and cons of technology and many theories have been set forth about its practical results – such as alienation, anomy, etc. – in the history of modern thought, no decisive conclusion on the nature and consequences of technology has been reached. However, one can summarize ongoing debates and current results in four categories (Güngör, 1990: 29–30):

1) Technological development recognizes no barrier before it. Continuity is one of the most important features of technology. While societies differ at levels of development, technology is in constant progress. Great catastrophes in history (unexpected disasters and changes) have terminated some societies and their civilization. Yet, even though technological progress might have lost momentum in some places, it has continued to advance somewhere else.
2) Technology, due to its direct and indirect effects, comes into conflict with traditional and established cultural values. Most of the times, these effects might go unnoticed in the first stage. Despite the partial obstacles and resistances, no technological development has been prevented in the very beginning. A cursory look at the history of science and technology shows that no innovation which faced opposition, in the beginning, disappeared because of that opposition. The way to fight the negative impacts of technology on human culture and social organization that came into view later has never been the rejection of using technology, but the reviewing and restructuring of established social

values and organizations. In short, it is not a matter of possibility that the established culture could reject the technological change altogether and succeed in this. Here the principal issue that concerns sociology of culture is the fact that technological progress moves in the direction of universal human aims and that we need to figure out how to best determine the contents of 'human good'. In other words, the issue is the principal value that rules the human mind that contributes to the development of technology.

3) Technological developments at the same time offer important chances for the development of social culture. First of all, culture gains new means through developments in technology. On the one hand, these means increase culture's power of expression, such as the rise of new opportunities for music with the developments in sound technique. On the other hand, media such as books, newspapers, radio, television, cinema, and the Internet allows for the dissemination of culture among larger sections of society. Again, in contrast to Marx's argument, man can come to devote more time and labor to cultural affairs thanks to the efficiency of production increased by the use of technology in working life.
4) Though technological development continues incessantly, the effects of this development are avoidable. In fact, no society gives free rein to technical change. In this connection, social scientists distinguish between the direct and indirect impacts of technical change, claiming that the latter can be controlled. The fact that culture and its core values resist technology shows that they are not so weak as to give into technical change right away. The ongoing debates over what can be done to fight the unwanted consequences of technology also show the potential power of culture and values to resist.

A glance at the considerations about technological development enables us to speak of a two-sided evaluation. Those who highlight the subversive and disruptive impacts of technology on culture in the history of modernity talk of the fact that the social structure which had been first built within the matrix of Western industrial society forced the traditional social structure to change to a great extent. Both Western and non-Western societies have developed different cultural attitudes towards the destructive impacts of modernization. The case of Gandhi represents those who oppose technology en masse.

Describing the culture produced by technological society as the "spurious culture", Edward Sapir says that in modern society, 'the ends are replaced by the means, and many things that had been ends in the ancient human culture have come to be meant for the means. For in a genuine culture, all activities of human beings are included in a whole that is very meaningful for them. Human activities

are neither independent from nor foreign or enemy to each other to the extent that even the hunting ceremonies in a culture considered primitive served an economic purpose on the one hand and met their spiritual needs like dance and music on the other' (Güngör, 1990: 30). In brief, culture should have an authenticity that comprehends the whole of life.

In a culture accompanied by modern technology, on the other hand, material and spiritual activities of society are gradually diverging from each other. People perform spiritual activities as a special activity just to get rid of the hardships and problems of their material life. For example, while trading in classical Turkish culture is an activity that has a meaningful place within religious life which is the main component of culture, commercial life has now become a worldly work that operates only according to economic principles. Again, we consider music not as a value in itself, but as a commercial sector or a 'fun' activity used to escape from the routine activities of daily life. In the final analysis, opposition to or criticism of technology represents a general attitude that rests on the values of human good (Güngör, 1990: 30; Coomaraswamy, 2014: 78).

In terms similar to those of Güngör, Paul Virilio summarizes the level reached by technological development as follows: 'Science is not so much the extent of progress achieved on the scale of technical catastrophes occasioned. Science, after having been carried along for almost half a century in the arms race of the East-West deterrence era, has developed solely with a view to the pursuit of limit performances, to the detriment of any effort to discover a coherent truth useful to humanity. Modern science, having progressively become techno-science – the product of the fatal confusion between the operational instrument and exploratory research – has slipped its philosophical moorings and lost its way, without anyone taking umbrage at this, except for a few ecological and religious leaders' (Virilio, 2003: 7).

One may wonder if it is possible to bring technological development into harmony with human ends and aims and where one should search for the source of values that shall bring the direction of technological development close to human aims (for more detailed information, see Habermas, 1993: 65–74).

Religion versus Techno-Scientific Challenges

Putting aside the ancient debates, we see on a sociological level that deep debates over the relationship between religion and scientific-technological development have occurred since the second half of the sixteenth century that sped up after the Renaissance and Reform.

For example, Pope Alexander VI's attitude towards the print and his stated reasons still hold their validity in the ongoing debates over technological and scientific developments: 'I am afraid that the increase of books will weaken the belief in God' (Akgül, 2008: 40). We can see similar reactions in almost all religions. And these reactions have turned into new attitudes over time ranging from rejection to adoption. One may wonder, while the debates and interaction process triggered by the duplication of books through print are still underway, to what horizons of debates and conflicts the digital age shall lead to.

Since the beginning of the modern age, the thesis has been voiced by some social scientists and religious circles that due especially to changes and developments in mass communication technology, religion, and ethical values resting on certain fixed tenets of belief, an authority, and an institutional organization have suffered an erosion as a result of techno-scientific and ratio-secular interventions (Roszak, 1995; Tomlinson, 2004). For example, the Catholic and Protestant Church and clergymen in Europe and the United States of America have opposed communication means and products – including novels, films, and cinema – on the basis of their destructive effects, putting them on par with alcohol and tobacco products. In a similar manner, radio and television broadcasts have been criticized by both religious and non-religious groups because they claim that such broadcasts are capable of controlling the minds of listeners and viewers (Stout & Buddenbaum, 2000: 117) and negatively influencing their thoughts and behaviors. For instance, the Evangelist declaration made in 1957 stating that 'Christians should not go to the cinema' caused similar reactions against television some thirty years later. The title of a book published on television by the Evangelists, 'What Does Jesus Think about Television?', is quite interesting (Ferre, 2010: 690).

Again in the United States, some NGOs such as the "Christian Leaders for Responsible Television" and "Family Research Councils" have been reacting against Hollywood and the media industry for their insensitivity to the protection of 'religious and family values'. In addition, mass media as well as such works as "Hollywood vs. America" by Medved (1992) and "The Culture of Unbelief" by Carter (1993) have supported religious circles and organizations, adopting the view that the media trivialize and destroy religious values (Stout & Buddenbaum, 2000: 117).

While some religious groups have a negative attitude towards the media, some others adopt a more liberal stand. For example, in Europe and America, Protestantism, in contrast to Catholicism, represents a new understanding and interpretation of religion that has been brought about by many processes, including developments in communication media. There are also some religious groups

who approach the media from a practical perspective. For example, the use of the media by the Vatican in Europe and by some Catholic and Protestant groups in the United States is almost simultaneous with technological development. In America, the first religious radio station (Pittsburgh's Radio Station) beside the government radios was set up in 1921 under the auspices of a local church (Gaddy, 1984: 189); the second (National Religious Broadcasters) was set up in 1944 against the liberal Christian denominations (Russo, 1995: 6; Hangen, 2002). In Europe, the Vatican radio started broadcasting in 1931 with special permission by Mussolini in order to only disseminate her own doctrine (Matelski and Lynch, 1997: xvii).

One can observe similar reactions in Turkish society though it has a different sociological background. From the introduction of print into the country and the duplication of books onwards, various official clergymen, different religious groups, and circles displayed a negative attitude concerning the circulation of script, sound, vision, and information towards the technical novelties and their effects, considering the present situation to be the shaking of the sources of religious knowledge, religious authority, and institutional organization. For example, they held that Scripture or principal religious texts should be read from their original script and language, opposing the change of the alphabet and the translation and simplification of religious texts. One can observe such attitudes in our time, too. I think that such debates show the existence of a serious and intimate relation between technology and culture. Since this deserves an independent study, the current information provided should be sufficient for now.

Putting aside the relation between religion and classical communication means in the history of Turkish modernization, one can say that the relation between religion and digital media is almost simultaneous with developments in the real world. In Turkey, the first radio and television stations were established in the freedom years engendered by the globalization process following the Cold War period; more precisely, in the years following 1993 when the state monopoly broke and the private media channels mushroomed. In the 1990s, many religious groups showed interest in the media, the first of them being the Turkey Gazette, Radio and Television (TGRT). Though this religious community, known as the İhlas Group (Turkish pronunciation of the Arabic word ikhlāṣ, meaning sincerity), takes full advantage of written, visual, and audial means of communication in disseminating their particular religious' doctrines, they ironically maintain the above-mentioned historical hostility between religion and the media. For example, in 'Seâdet-i Ebediyye; Tam İlmihâl', the major doctrinal and ritual handbook of the Group, it is stated that 'it is not permissible to call adhān in the radios and by the speakers in the minarets, nor to listen to it as adhān. These are not only

unacceptable, but also sinful' (Işık, 1978: 166). We know that such debates were also made in the past amongst different religious groups (Şişman, 2016: 9).

Such types of conceptions, resting the interpretation and practice of religion on the official authorities of the past periods, believe that the novelties and practices originating from technology 'may harm religion'. Besides, some religious groups forbid their members from reading publications and books other than theirs, as well as forbidding them from watching television (TV), attending the cinema, and having TV receivers in their homes. They prefer having conversation in the classical sense to reading books. This debate suggests such questions as to whether hearing or watching came first in serving as the source of truth or whether speech or writing is more effective for the task of communication.

In conclusion, besides some small marginal religious groups who take a radically negative attitude vis-à-vis the use of the media, there are some other groups or institutes who remain distant from the media which they consider to be irreligious or harmful. Still some others, with a view of keeping and expanding their doctrinal and epistemological authority, adopted a pragmatic attitude and developed the logic of using the anti-media. In the relation between religion and communication technologies, these three different attitudes may be observed in all religions and religious communities.

Debates over Religion versus Secularization

One should point out that in the modern world, the ongoing tension and conflict between the beliefs and values represented by religions on the one hand and between the practice of living mostly supported by the scientific and technological change on the other have been taking place, in some respect, in the context of the debates over religion versus secularism. The understanding of modernism, spearheaded by enlightened reason and science, predicts that the constituent principles which should rule the natural and social world should not rely on the approval and confirmation of religion and metaphysical beliefs, but on that of reason and science. According to evolutionistic determinism, a theory used to explain the transition to the present modern period after long centuries in the past ages of humanity ruled by religion and metaphysical beliefs, 'religions, i.e., the systems of belief, with the use of reason and the progress of science, shall totally disappear, to be replaced by science'. 'The area of values, for example, moral and aesthetical values, which feed on and derive strength from religion and metaphysical beliefs, will now be determined by scientific truths' (Güngör, 1978: 109).

As well, known to the students of sociology, the classical theory of secularization prevalent in social scientist thought of the nineteenth century holds that

science, rationalism, industrialization, institutional differentiation, and technological progress all combined to weaken the impact of religion on individuals and society. Yet, considering the experiences lived in the last century, in contrast to the classical predictions, scholars have been offering new evidence that religion gains more power rather than disappears in social life. Furthermore, R. Stark and L. R. Iannacone (1994: 249) point out that the empirical indications of vitality in religious life deny the theses of the secularization theory. Robert Wuthnow (1989: 15), one of those who joined the debates over secularization, says that 'religion impacts social settings very broadly and deeply'.

Supported by many other scholars, Stark, Iannacone, and Wuthnow hold that 'the fact that religion remains in interaction with modern processes and expresses itself in other ways shows its vitality, and not its extinction'. Therefore, the task of social scientists with regards to religion being one of the most ancient human institutions is, by observing the experience of the last two hundred years, to investigate questions such as why people are sometimes less and sometimes more devoted to religion. As has been observed by many social scientists, the present world gradually makes more reference to religious beliefs, and the 'modern empirical worldview', which is diseased with rational banality and makes a great emphasis on scientificity, 'is replaced by the religious worldview possessed of miraculous-metaphysical character' (Roberts, 1995: 337). To a great extent, the main sources of the replacing worldview are religions or semi-religious doctrines. Who could say that, in keeping with the sociological approaches of the 1970s that concede man's metaphysical interests and orientations as well as his emotional needs for the bid of achieving the concrete, rational-scientific social truth, such a religious orientation and replacement would be part of the modern social culture at the end of the millennium?

With its dimension justifying the position of the classical secularization theoreticians, the religious awakening, observable in the digital world, seems to be less related to the theological conception of truth. Today more people return to religion in search of a personal identity and a general sense of social security. The means of this return is not the authentic religion with its sources and authority, but an emotionally stable and socially safe way of living, which satisfies the interests and orientations arising from the sense of being neglected caused by the modern way of dealing with human problems. Therefore, those who take the lead of the religious awakening are not ministers or saints, but rather are modern leaders or idols who grew up within new religious movements. The worldview represented by the new leaders derives strength from abstract belief, principle, and images that promise a relatively stable life. The most important thing observed in the new era

is the change taking place in the nature of religious orientation. The distinction between the sacred and the profane has almost disappeared, the integral ritual life being replaced by just a belief in and devotion to something. Religious ritual is no longer necessary[1]. It is sufficient to adopt the stickers of modern formations as a cipher of identity and affiliation and to join the group as a 'style consumer'. In this connection, religion and other institutions are redefined on the basis of urgent/practical needs, with an imaginary conception of religion coming to be prevalent. For what people feel is missing and what they are seeking for in modern consumption culture is just the feeling of 'intimacy'. One can consider all these orientations to be an 'effort of defending' made by the individuals becoming more isolated in modern society as a response to social insecurity and vulnerability (Akgül, 2008: 63).

In the context of the new religious awakening fanned by the search for intimacy, religion, from the 1990s onwards, has started to be an indispensable element of the content and form of mass media with a special presentation, as in cinema movies, radio-television programs, and the virtual world. Thus, with a view of reaching out to the mass of all viewers, listeners, and followers, almost every communication media follows the policy of the least objectionable program. Such a media policy that communicates such general and collectively held criteria as transparency, justice for all, virtue, morality, and respect for authority and that tries to minimize the popular criticisms rising against other programs determines the broadcasting strategy that is acceptable and palatable to society. This new strategy, in the interrelation between religion, the media, and the market, managed to communicate such productions and subject titles that cultivate social interests and values to very high rates of audiences (Akgül, 2008: 63).

Digital Media versus Digital Religion

No sooner than when the communication network had been established among computers worldwide, users of different religious affiliations started using it for religious purposes. We observe that from the year 1983 onwards religious sites have been established and some religious discussion groups have started discussing religious issues. The exchange of information focusing on religious and moral

1 During the live broadcast of religious programs on the radio and TV on religious days and nights, people display an emotional participation as presupposed by the media religiosity, rather than attending the temples or actively performing rites at home. Thus, the classical congregational structure loses its importance, to be replaced by a new form of religiosity made up of a sense of individual or mass religiosity and devotion, as it were.

issues has taken place through the religious sites. Along with the religious sites set up in America by followers of many different religions such as Jews, Christians, Buddhists, and Muslims, many other virtual churches and temples were later opened to the access of loggers in different parts of the globe. Groups of different religious affiliations, when they came to know computer networks, realized its utility and started using them (Ferre, 2010: 689).

Comprehensive surveys on the relations between religion and digital networks have been performed in different countries. Heidi Campbell, one of the researchers of this field, in his book When Religion Meets New Media (2010) investigated how the Jewish, Christian, Muslim, and Buddhist communities responded to the Internet and mobile phones. She is not directly interested in the acceptance or rejection of communication technology vehicles, because, in addition to some old reserves that the religious groups have vis-à-vis the communication media, modern religious groups may take various attitudes. She is rather interested in the fact that 'the communities bring their way of life in harmony with technology' or that 'they bring the new technologies into harmony with their way of life'. For her, there are interesting cases in the reactions of religious groups towards technology (i.e. in rebuilding themselves to come into harmony with novelties). Such a situation requires both the religious group members and their leaders to seriously think about finding the technology that is suitable to themselves. On this subject, very striking results have been found especially among the Jewish and Muslim communities. With respect to external factors with a technological origin that try to intrude into the life of sincere and strictly practicing believers, for example, the Orthodox Jews, though they endorse the use of cell phones in principle, they ban the use of them in some applications. They also have reservations about connecting to the Internet because it includes a lot of tempting content. They also forbid advertisement films, gambling, and audial and visual cell phone messages used by friendship services. Israeli cell phone companies take measures to prevent the use of unwanted applications through the use of Kosher software and barcodes showing the official endorsement of the Rabbis. Thus, communication among Orthodox Jews is conducted by means of the Kosher communication device that prevents access to undesirable communication and allows users to communicate only with permissible numbers. For example, this cell phone prevents users from initially reaching some numbers and controls incoming calls. Calls to numbers unendorsed by the Kosher software are charged a fee that is two or three times higher than calls made to endorsed numbers. In addition, those who call any numbers other than that of the fire department, the police, and the ambulance during the Sabbath are subjected to different punishments, including the confiscation of the cell phone used for that call (Ferre, 2010: 690).

While the Orthodox Jews tended to limit the use of cell phones through Kosher software, Muslims found ways to add more religious applications to cell phones. The Muslim groups offer free software that can be set up in different types of smart cell phones. Such applications offered to the pious users include those for finding the Kaaba direction for performing ritual prayers, informing users of daily ritual prayer times, providing live connection to Mecca for daily ritual prayers, reciting aloud certain formulas of prayer, reading and listening to the Qur'ānic verses and the prophetic Traditions, and reciting certain passages from the Qur'ān as a necessary component of the ritual prayers, while others include e-book series from the main religious sources and visual teaching of the bodily worships.

In her applied case study on Jewish, Christian, and Muslim groups, Campbell tried to find out the responses and reactions of religious groups to digital communication media, whereby she aimed at discovering the approaches of religious groups to 'technology use in shaping religious-social life'. The premise of this approach is that 'religious groups take an active role in making the decisions on the technology use'. The responses given by religious groups to the use of digital communication media are composed of four successive steps. In understanding what kind of responses are produced by religious groups to digital communication, knowledge of the group's tradition and history of the media use is both important and necessary as a first stage. 'What kind of positions do the groups take vis-à-vis the media and how do they use them'? In the second stage, 'What are the core values and beliefs of the groups'? 'What kind of conceptions determines the group position in using or not using the media'? In the third stage, 'the way the media's 'pros' and 'cons' are evaluated by the group is investigated'. 'How is the group discussing, negotiating, and practicing the decision, positively or negatively, on the media?' In the fourth stage, the discourse of the group is analyzed, in which the conception of technology takes shape. 'How does a new religious community practically use the new media and explain to their member their rules and bans on the media?' Lastly, Campbell, she lists the reasons that new media are easily used by religious groups as the following: to disseminate and propagate religion, to communicate the fixed/core beliefs to people, to facilitate the communication network for strengthening the group's choice, to influence larger social sections, and to help to practice the rites. On the other hand, if media use meets resistance, she lists the reasons for this as follows: the media give their members free access to secular content, and the uncontrolled use of the media undermine and shake the interpretation of the sacred traditions and texts as well as the authority of religious leadership (For more information, see Campbell, 2010; Ferre, 2010: 690).

It is clear that there is a differentiation, positive or negative, in the religious groups' attitudes towards media use. So, how should one assess these results? On the other hand, in so far as techno-scientific developments having linear progress, how will religious content and knowledge put in circulation in the domain of the changing communication means and the media be shaped in the future?

Religion versus the Virtual Reality

It is a well-known fact that the rise of the Internet has profoundly changed the nature and scope of mass communication devices (newspapers, radio, and television) known as conventional media. This new situation is defined by some scholars as 'the second media age' or 'the second verbal culture age'. The distinctive feature of the new age, defined also as 'the digital media age', is the introduction of surprising novelties like the production and distribution of media content. Digitality, convergence, and interactivity are such novelties. With these prominent features, communication possibilities have undergone a quantitative and qualitative change and communication quality and size have tremendously increased. In addition, the time and space limitation in the media has disappeared (Haberli, 2014: 32).

Together, the co-existing and co-broadcasting of voice, views, and pictures, as well as the transference of conventional media with all its diversity, to the online environment is an important privilege. In addition, the element of interactivity has changed the communication form and process. For example, new religious media have higher capacities than conventional ones in communicating the religious groups' beliefs, activities, views, and thoughts to larger masses. Through their interactivity, new media have gained a horizontal and homogeneous communicative dimension by transforming the vertical communicative character dominant in conventional media. In other words, while the source was active and the receiver was passive in the conventional form, the receiver has now reached an active position thanks to the interactive nature of new media, attaining the power to come in direct touch with the source and intervene in the content and even create his or her own content. Thus, people are no longer passive listeners, readers, or viewers; on the contrary, they have become media users by broadcasting their own pictures, views, voices, and messages, being not only information consumers but also producers (Haberli, 2014: 34–35). Ultimately, the Internet forms a great monopoly, and at the same time, a great diversity by uniting in itself all the capacities produced by the former media forms.

In this context, Christopher Helland notes that the representation of religions in virtual settings appears in two ways because of the Internet's nature: religion online and online religion. While the former means the use of the Internet for

such purposes as communication, information, and propaganda as a means of one-way communication from the source to the receivers, the latter refers to the use of the Internet as an interactive virtual medium in which the participants carry on their discussions and exchange their religious and spiritual experiences (For more information, see Haberli, 2014: 61–70; McDonnell, 2014: 39–40). In other terms, 'online religion' means the active participation of individuals in the religious activities, as well as the religious contents that are shared by various religious groups without any official control or endorsement. In this connection, the main problem from the perspective of religion is the fact that religious knowledge and doctrines are just like any other sort of knowledge made of speculative debates, independently of any religious doctrinal and institutional authorities. For example, these groups wonder if the traditional beliefs have something to say about new communication technologies. Does the Internet provide its proponents with any capacities and benefits? Should one use the Internet or not? Does the Internet cause any danger with its accessible content in general and with its messages of disharmony with the orthodox interpretation of religion and teachings? What about online religious practices? For example, can one perform a religious rite online? Can one establish a creedal relationship or live it online?

If the new questions and problems arising from a secular lifestyle, technological development, and religion are effectively dealt with by traditional religions, the problem areas remain quite narrow. Yet if they find no satisfactory solutions, the Internet environment may come to evolve them into a new religious group. Thus, if those problems that are supposed to exist between religion and the media have not yet been solved, a new debate area and a new form of religiosity called 'media religiosity' shall be added (For further information, see Akgül, 2008: 62).

In addition, such religious formations as media religiosity and virtual religion can be considered new religious movements of the digital age. Nullifying every kind of institutional structure, hierarchy, and authority, the virtual domain has carried people with all kinds of religious conviction from orthodoxy to heterodoxy to an environment where they can circulate their religious beliefs, thoughts, and actions. As for the term 'religion online', it refers to media in which knowledge about religion is presented by religious institutions. While all official religions appear in the Internet domain, they are usually composed of religions with a big number of believers such as Judaism, Christianity, Islam, and Hinduism. The websites with religious content set up by the followers of various religions are quite plentiful (For more information, see Haberli, 2014: 45–49). Along with the websites established by the followers of traditional religions, there are those established by the followers of such doctrines as atheism,

paganism, and Gnosticism, as well as by the adherents of new religious movements like Mormonism.

As it has already been pointed out, virtual domains like websites, blogs, and social media are used to promote a religion, a denomination, a religious group, or an organization. In addition, educative and informative contents about a religion's main sources, tenets of faith, ritual, and moral principles are offered and e-books, articles, and similar materials are made accessible (Haberli, 2014: 45–49). For example, such offers have been done in Turkey by the Directorate of Religious Affairs, in Europe by the Vatican, in America by the Catholic and Protestant Churches, and in different parts of the world by websites related to Judaism.

In this context, websites belonging to traditional religious groups or new religious movements, according to Oliver Krüeger, have four functions, which are the following:

1) The periodical announcement of the religious group's doctrines, mission, and aims.
2) Fortifying group dynamics by forming platforms for discussing and sharing religious issues and by answering frequently asked questions.
3) Offering ministerial counseling service, such as giving advice concerning personal problems and providing meaningful and consistent explanations for esoteric interests.
4) Performing trading activities by means of religious books, digital products, and other products that symbolize the group and contain ritualistic elements and functions (cited in Haberli, 2014: 48–49).

In the media world that speedily changes and almost instantly rebuilds itself, one may regard such activities of religious groups as extra-group and intra-group communication and the exchange of information.

Conclusion

Every great transformation taking place worldwide does have a background. Novelties that transform humanity or prepare it to transform have usually been discovered later on. In this sense, it is known that the change and transformation that forms the Gutenberg Galaxy started with the invention of print. The Internet is the latest, but is not the last star of this galaxy.

Though social scientists have not agreed on the role played by the invention of print on the rise of the industrial revolution, the reformation process, or the capitalist production process, mainstream social scientists like Weber share the following opinion. Even though the invention of print gave rise to worldwide

socio-economic change, as a result of print, 'the duplication of books decreased the belief in God', as Pope Alexander VI expected of the reformation process and its impact on the change in the religious sphere. We can read 'decreased the belief in God' as 'changed the belief in God', too.

We are now at the threshold of a new change and transformation. In so far as the invention of print first changed the way of writing, reading, and understanding the Scripture, and then the institutional structures and authorities, one should wait a while to see and scientifically explain what has changed in the Internet age and what causes have given birth to what effects.

Looking from the window of religion, we can say that, as it is stated in Qur'ānic verses quoted above, either 'humanity causes its own end' or it is at the threshold of a new 'information age'. Whether that age is 'virtual' or 'real', history will show.

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Digital Literacy

"Tomorrow's illiterate will not be the man who can't read;
He will be the man who has not learned how to learn."

Alvin Toffler, 1970

Introduction

Reading and writing activities can be interpreted as understanding nature, the earth, and social relations using various technological tools and recording them, establishing a bond between the past and future, and translatıng or contextualizing the moment. Literacy competence, which is as old as socialization and state process, has been the key determinant for societies since archaic communities started producing written text. Therefore, literacy, which initiates the logical transformation of humans and the formation of the logical chain, is seen as a factor that tames the individual and society with data production, memory, and identification factors (Goody, 2011: 161). Moreover, the alteration of the conscious structure of literature (script) (Ong, 2007: 97) has been an important tool for the formation of new literacy structures. Text-centric structures and activities around it have composed a part of daily life. Text has made an individual a social being by integrating life and has resulted in a diversity of literacy due to differences in language and practice, especially in cultural features and symbolic factors (Barton & Hamilton, 2000: 7–13). Factors such as language factor, the inclusivity of daily life, and the interdisciplinary and historical feature of education, as well as the diversity with writing action (Barton & Papen, 2010: 6–8) have diversified literacy.

Literacy, which occurs with writing, historically resulted in the formation of social layers. In particular, continuity and permanence provided by information caused literate individuals to have a privileged position in the state (power) apparatus. Literacy provides the storage of information and it can be reached when it is needed. This situation ensures an obligation of literacy for systems with the prediction of situations and the interpretation of time and space. The layer which has improved since the use of writing in social structures is identified

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with bureaucracy. Literacy has also influenced the development of societies and civilization (Goody, 2013).

On the other hand, with regards to reading activity, we can focus on three points for an individual and society. The first one is the writing formed with the use of symbols, while the second one is the comprehension and interpretation of events and facts which happen around us and around the world (Altun, 2005; Gellner, 1992). Finally, the third one is critical comprehension and rewriting the thing which is read through interpretation (Freire & Macedo, 1998). Literacy composes modern common culture and national reality as writing develops its own tradition against verbal communication and its cultural traditions (Goody & Watt, 1963: 344). The formation of pictured communities and common memories depend on literacy. Literacy is individualization and it is the prerequisite for all expertise in a society that everybody is an expert (Gellner, 1992: 231). Therefore, text and readers, which are cultivated with ideological factors and are exposed to continuous manufacturing, have become one of the core factors that hold society together. They also provide the reading and interpretation of yesterday, today, and tomorrow.

Literacy can be differentiated by the material used in writing, the writing tool, the writing type and content, the features of the writers, and also by the socio-economic and cultural features of the communities. Beside these two factors, it may differ in time, space, and functions.

Literacy, Historical Process, and Effects

Though literacy is focused on by various disciplines, the history of literacy research dates back to old times. Being the area that is not given due attention (Yıldız, 2007: 46), studies including new literacy approaches and historical processes that made this subject obligatory to be studied has been revealed. (Yıldız, 2007: 58). In this respect, though literacy is as old as being a historical fact, the studies related to that area are brand new. However, historical processes and stages of writing particularly need to be followed to analyze literacy.

The development of writing deals with not only the internal dynamics of the society, but it is also the product of common culture and thought. Formations that have occurred in a society are supported by other social processes. Though the processes are undulate, the common structure becomes the cultural expansion (Nissen, 2004: 129). Writing activity has always developed since the first day. The starting point is the transferring of speech to the script as in verbal to text. Therefore, writing, which developed swiftly after hundreds of years and centuries, has become a clear tool for the use of humanity. Writing that is excluded from

belonging to one language and that has spread swiftly, has become an open structure to anybody. Thus, other languages' words have become writeable in more than one language. Writing which is copied quickly has eliminated complexities thanks to text production and record systems (Nissen, 2004: 158–159; 182–89). Since "Writing is the fixation of meaning. When we talk our words fly away with the volatility of human behavior, unless our words put down on a paper (or another adopted record system) what we were done shall be forgotten. Therefore, when they are written, …they die still; yet, at least the meaning, what they say not saying (articulation) is protected to a certain extent for a while. In general meaning, this is not different from an action. The meaning can endure a certain extent though the loss of reality" (Geertz, 2007: 43). This endurance is related to social processes and information which provides the continuity of text.

Writing has been widely used in other areas thanks to the development of technological tools during the period that metal tools spread into the public. Writing action, with their contribution to letters and writing, which was the secret of a small erudite writer class until that period of metals and tools, has started to be common among public layers (Childe, 1983: 23). The elements initiating the common use of writing are discourses which build the identity of an individual with technical, cultural, and political situations and provide the continuity, and the parts that read and use the writing (Assmann, 2001: 27). Though a tendency to the public is in question, writing and reading style(s) that developed with interactions and transition have gradually been the respect and power field of elites, religious leaders, finance officers, and the administrative part under the control of a limited structure (Kaestle, 1985: 15–17). On late centuries when full mobilization of the society occurred, it was required to be anticipated to developed public participations.

On the other hand, it can be alleged that religions influenced the development and continuity of literacy in the world. Religions, which have thousands of years of history, have protected their historical features at the end of writing. In addition to this, cultures developed different mental perceptions and belief systems (Smart, 1982: 297). The development of religions and the influence on communities have naturally influenced the literacy–social relation. In particular, the expansionist and globalizing feature of excessive religions naturally required them to create their own systems. Moreover, reading religious books has made the average community adapt their writing. Books formed the basis of new social structures that are constructed from the text and differentiate the readers that are the believers.

The period in which social revolutions and fractions within literacy occurred is the period that the printing technique was formed. Printing, with the settlement of the printing system in public, opened a new world both psychologically and

technologically. Printing also revealed a new type of man. Mcluhan's (2014) definition of the typographic man has proceeded to the development of computer and communication technologies with the development in the printing field. Printing has become the basis of modernism and the transformation of thought and literacy, rather than science, secularism, and bureaucratization. During that period, literacy can be called the simple literacy period between 1600–1850 years (Kaestle, 1985: 15–20). Reform movements underlie the changes during that period. In particular, literacy sticks out from Latin fact and has become an influential tool in both the formation of states and national beliefs. Though mass literacy is less important among the first wave conclusions of nation-building (Wimmer and Feinstein, 2010: 768), the Protestant and German sample provide an important clue at that point. Literacy and ideational change with reform, and new society building initiated (Gawthrop & Grastrauus, 1984). Another important point during that period for literacy was the newspapers and magazines started to be published in 1600. Newspapers and magazines created new reader types and reading forms.

On the other hand, before the end of the seventeenth century, newspapers became a commercial meta. The development of the sector provided magazine literatures in different sections as authors, journalists, publishing houses, and businesses. The press, merchants, and readers started to improve themselves depending upon the base. In particular, seventeenth-century European wars expanded the audience and capitals started to follow each other in newspaper numbers. Reference books and encyclopedias, as well as press, increased by leaps and bounds. The more that references increase, the more that expertise started to increase. In that case, the knowledge of the majority of individuals lasted for centuries and started to be built on purchased information from information stores like encyclopedias. (Burke, 2001: 168–173; Company, 1983). Expertise also developed an evolve into the local points of communities. New reading formations were revealed with the strengthening of local languages and production knowledge about it, and the empowerment of the bourgeois. The reading style shifted from a loud and intensive reading form to a silent and skimming form. The obligatory tools created by the printing presses (Iskender, 2014: 557–60) caused the transition of the mass.

The rise of literacy in Europe occurred in the 1850s and 1900s. The 1850s is the end of a second age of discovery (Burke, 2013: 12). During that period, huge social changes obliged society to increase the level of literacy. These are industrialization fact, urbanization, literacy demand of trade, nation-state building, production of national identity, development of institutions related to literacy, and support of governments (Kaestle, 1985: 15–28). Literacy has become an important tool not only for national identity formation but also for the formation of other identities

(Moje et al., 2009). With these processes, the production of an individual, which was attempted to be idealized with citizenship education in the process of the nation state, increased the importance of literacy.

However, these processes cannot be generalized with other factors. It may differ from social development and cultural codes. When the literacy level and literacy rates of Europe during that period are considered, southern and eastern parts had lower rates than northern and eastern parts (Houston, 1983: 288; Briggs, 2000: 481; Frago, 1990: 581). On the other hand, during that period, reading halls appeared in England (Darnton, 1990: 7–8) which started to be dominant in the printing industry. Readers subscribed to these halls for low fees and read the materials that they could not afford to buy (Jeanneney, 2006: 40; Company, 1983: 137). Therefore, literacy has become an invisible-functional structure in socialized daily life.

In the 19th century, literacy and writing systems started to change. In particular, writing activity, which was massified (popularized) and commercialized, and the production of paper, shifted out the classical tools. Firstly, the iron pencil fountain pen came to the ground at the beginning of the twentieth century and pens including the ball pen were revealed in the later years of the same century. Albeit, in the later century, the typist system in offices (Burke, 2013: 105) started the centenary adventure of personal writing and multiplication (copy) processes.

Following the twentieth century, literacy demonstrated development in various elements. Difficulty in business life, wars, and different structures between migrations and groups caused a change in literacy and made functional literacy popular during the thirties. In the forties, the effect of war, especially the situation of war in the United States (US), increased the importance of more functional literacy. The functionality term (Castell & Friends, 11–12) started to find a place within the target of basic education with "survival literacy" and "basic literacy". The twentieth century, with the definition of Hobsbawn (1996), is the period of immoderateness and different eras in the century. Wars and ideologies surrounding the world have become the reality of people. The rapid rising in readings in conflict zones, which was created by wars, made technology the tool of scientific revolutions. This period was followed by a humanistic process. Reading was no longer defined as a knowledge process, and in the eighties, understanding the text had become attached with reading fact. Developments in reading and writing that fit into periods of hundreds of years have started to shift to periods of years to ten years.

Literacy discussion in the eighties moved on with new literacy fact. New literacy is the meeting of the message which is formed with the unification of idea and knowledge with a media tool instead of paper, ink, and printing. This idea, focusing on McLuhan's thesis, put computer technologies into the center. This new

literacy is the literacy of computer and television (Compaine, 1983: 1312–133). With new literacy, the situation created by the replacement of text with screens (Sutherland-Smith, 2002), the screen has become the purveyor of the modern myth (Poster, 1984). Television is a tool that includes everything and has more influence than it seems. Technologies such as television, the Internet, and web connecting the earth have caused the formation of new literacies and multi-literacies.

Finally, throughout reading history, there have been periods where the concern has not been centered on the individual student or his or her mental structures or processes. Rather, the focus has been on the student in relation to others (human-to-human interactions) or the learning of groups who share history (e.g. gender or ethnic groups) or geography (e.g. classroom communities). We see this sociological framework clearly in the rising interest of sociocultural perspectives and in research on cooperative or collaborative learning (Alexander & Fox, 2004: 57).

Literacy Types

Literacy differs by community and time and can be generally considered as traditional, modern, and digital literacy. Generally if literacy is considered as a linear point-starting from reading and writing goes by following the way of half literacy and letracy. In the situations of both half literacy and new literacy, regression and secret illiteracy can be observed. After that level, functional and multifunctional literacy levels appear (Güneş, 1994: 504). The main point of this difference is the function of the individual against reading and writing. General literacy starts at the reading-writing activity and in the situation of using them. Modern literacy is a situation that is formed by going out of the traditional community organization and demonstrates a period where literacy gets rid of the monopoly of the minority. Therefore, the flow of daily life can be lived without an attachment to tradition. This situation discussed as reflexivity is a structure where the continuity of new knowledge is ensured. The reflexivity, defined as the projection of idea and the act to each other at all times, is related to modern literacy (Giddens, 1994: 40). Digital literacy is digitizing technologically and is also a literacy that is developed on modern literacy formed with the interaction.

On the other hand, literacy is analyzed categorically as individual and multi literacy. Individual literacy can be grounded on status and power-centered literacy, while multi literacies can be grounded around the public fact. At that point, literacy should be considered within the social structure and values system with the environment and community. Another categorization is literacy formed with the use of a tool. Many tools from clay tablets to electronic tablets changes literacy fact. Each produced tool or object related to literacy varies the literacy fact.

Another categorization is dominant describing facts that communities lived in. Literacy fact varies as the organization type and content of a community become different. That point reveals the traditional, modern, postmodern, industrial, knowledge, or agriculture and similar features of society. These features are sometimes in intricate relations. For instance, the final stage of technology and modernism can be approached as the definition of digital society. That stage is a new stage on its own, digital modernism. Digital modernism (Pressman, 2014) finds its implementation area with its own tools and cumulation of tradition. Social dynamics started to be analyzed with new facts and concepts with the Internet and tools of the Internet. Moreover, whether the individual is present or using case provides a generation gap. The most important fact of research is the digital local and migrant fact (Prensky, 2001: 3). Digital migrants are people who were born before 1980 and digital locals are people who were born after the eighties. Many points that the generation used from texts to tools and visuals to applications are categorized with digital tools. Though this distinction is the new categorization of former social distinction and disintegration, it caused featured literacy to gain more importance by getting more and more variance. Compulsory relations of society, depending on data and the interaction process, naturally put literacy into the center of daily life.

The multi literacy type is another literacy type in the twenty-first century. Providing literacy to individuals against the multi-layered text structures which are not only words, verbal communication forms, or visuals, but rather the use of these three together, has gained importance. Research states that though multi-layered literacy is available, it is seen as a problematic area for education (Tüzel, 2013). Another problem at that point is literacy. This situation lasts for a lifetime and requires a continuous dynamic structure of learning and teaching fact. However, it is a very difficult situation in terms of literacy and system since the literacies that occurred also brought their own problems (Önal, 2010).

Since the process that is formed with the diversity of literacy, the literacy concept has always undergone change and has transformed. When this process is generally considered, it is transformed into a tool and technic, and in the last century, it has transformed into a comprehension in an expertise area and an analyzing ability. When there is more expertise in the social fields, the increase in the literacy of this (digital technology) type is compulsory. In addition to this, new areas related to literacy are added with the fictionalization of former institutions and areas. Overall, literacy area, which is explained with them today, is observed. These literacies find a place within daily life in the direction of the wish and demands of individuals. Especially in understanding technology, social life,

and survival. These literacies are media literacy, digital literacy, knowledge literacy, network literacy, screen literacy, law literacy, computer literacy, scientific literacy, environment literacy, culture literacy, art literacy, e-literacy, economy (finance, stock, investment) literacy, critical literacy, visual literacy, graphic literacy, Internet literacy, library literacy, politics literacy, cinema literacy, agriculture literacy, history literacy, technology literacy, consumer literacy, citizenship literacy, and so on. It is possible to multiply the number of these literacies to the expertise area. It can even be alleged that these literacies shall go on with hybridization and development (Snavely & Cooper, 1997; Altun, 2005; Kurudayıoğlu & Tüzel, 2010; İşler, 2002; Önal, 2010; Yücetokur, 2015; Goodfellow, 2011).

Digital Literacy

Social conditions and happenings made people learn continuously when they meet face-to-face. This learning process always changes because of technological devices and transforms into a multi-structure. Digital literacy appears as effective literacy during this process. Digitalization is originally based on digitizing, multimedia, interaction, and being everywhere. Developed digital technology and integration systems of the 1970s started the formation of the digital world. Digital technology, voice, image, data or packaging, and storing of all kinds of messages with coding came with the development of computer technologies and communication devices. After the liberation of fixed control centers, the process of facts being transferred via the network has become liberal. In addition to this, digitalization prepared systems for globalization with their own universal language and communication system networks (Castells, 2008: 57). Developments in satellite and televisions in the 90s made it necessary for societies to digitalize. This process also built their own social structures. Each fact no longer started to be defined with a digital term. Digital literacy is one of these formations.

Digital literacy is a process that reposes on knowledge literacy, Internet literacy, web literacy, and digital literacy. In that process, each step is important and all of them should be used together for digitalization. At the same time, digital literacy also finds its own place as being a systematic obligation. Developing technology and massified structures necessitate digital literacy (Allen, 2016: 16).

Learning from digital text forms and reading skills are essential in digital literacy. Naturally, structures in learning forms, teaching situations, and reading sources change as well. Another point is the formation of source materials that constitute a source. Glister (1997), who conducted one of the first studies in digital literacy, defined the above fact as the comprehension of technical methods, information use, and an ability in multi-formatting via computers with cognitive

and emotional skills. At another point, Goodfellow (2011: 131) stated that digital literacy is the activities of new information and communications media. It succeeds 'computer' (based, assisted, mediated), 'online', 'networked', 'web-based', and the now 'ubiquitous'.

The development of digital literacy that reflects variable character is composed of the contribution of integrated literacies and Internet devices of nations via public policy, the effect of the global economy in information and communication areas, and the rising of the Internet in professional and personal lives (Leu et al., 2004: 1151–1156). Leu et al. (2004: 1158) emphasized eight main features of development literacy, as follows:

"1. The Internet is this generation's defining technology for literacy and learning within our global community.
2. The Internet and related technologies require additional new literacies to fully access their potential.
3. New literacies are deictic.
4. New literacies are multiple, multimodal, and multifaceted.
5. Critical literacies are central to new literacies.
6. New forms of strategic knowledge are required with new literacies.
7. New social practices are a central element of New Literacies.
8. Teachers become more important, though their role changes, within new literacy classrooms".

However, this situation is valid for social structure. In particular, the existence of the digital divide fact (Hargittai, 2003) is valid not only for rich and poor nations but also for different ethnic, gender, and regions as well (Monreo, 2004; O'Brien & Scharber, 2008). On the other hand, it is necessary to identify knowledge, find a definition, evaluate and organize, and use it for digital literacy.

Digital literacy has become a "survival skill" in the technological era – a key that helps users to work intuitively in executing complex digital tasks (Eshet-Alkalai & Amichai-Hamburger, 2004: 421). A comprehensive conceptual model of digital literacy, which is comprised of six literacy skills, argues that digital literacy encompasses all the cognitive challenges faced by users of present day digital environments, include the following skills: photo-visual literacy, reproduction literacy, branching literacy, information literacy, socio-emotional literacy, and real-time thinking (Eshet-Alkalai & Chajut, 2010: 174). Defining these skills proves to be the achievement of digital literacy. On the other hand, in the complexity of communicative tools and the relations between them, literacy practices involve cultural knowledge, the employment of artifacts, and representations of the world (Gillen, 2009: 72).

Opportunities, Threats, and Problems

As it happens in each fact, digital literacy finds a place in the life of individuals and society with its contributions, problems, and negative sides. In particular, literacy that has more interaction with institutions and an individual who is open to changes and uses opportunities come with many problems. The problems, which are not related to changes as happening in all facts, should be considered with the structures that are directly generated by digitalization. Another point related to the subject is that technologic fact always has a dark, invisible, and insensible side such as in knowledge. For instance, the Internet defined that dark side as positive in classic meaning, which can appear as the organization of the worst sides of humans with the deep Internet.

In the digital world, the opportunity is given for almost every participant ranging from authors and publishers up to readers and followers that make digital literacy be taken more attentively. Internet and digital systems contribute to developments in the sector, have expanded the share in publishing, and have provided convenience to easy access. Knowledge production, transference, storage, and presentation on a computer allowed literacy to reach low levels of society. At the beginning, this computer and communication-based literacy has continued to develop with other devices and institutions (distance education, digital university, etc.) (Pachler et al., 2014).

Digitalization, as in many social areas, created many opportunities in literacy. In particular, countries invested in education in technology in the nineteenth-century and this investment resulted in students using technology at an early stage. During this process, important acquisitions for gaining skills and creativity and individualization were provided. The Fatih project in Turkey (http://fatihprojesi.meb.gov.tr) provided a technological structure in the education system. With the needs of schools and courses, tablets were delivered at no cost, resulting in teacher and student-centered education creating a comprehensive situation for education both inside and outside of the school. This is an aspiring situation for social stratification and democratic and transitive social structures. Another contribution of the project is the variance and enrichment of material's language. In particular, narrations from life instead of classical texts and discourses were put forward. On the other hand, applications such as watt pad (https://www.wattpad.com) were established as a social network by communication devices resulting in new literacies appearing, especially among new authors. Since its establishment, the social network, which has 45 million members and creates a new format in digital literacy, has provided an environment that everyone who has specific technical devices can easily get involved in. Wattpad, as it transacts enormes written

books in a digital format, has contributed to the media sector in terms of literacy. Therefore, new social networks are formed where e-books are produced and sold, multimedia opportunities are created, and where authors and readers meet at a digital chat rooms. Aydoğan, 2014: 32).

Literacy and continuous learning, being very important it is observed that could be more achievable in the digital world. Trivets such as the production of materials, their distribution, storage, and continuity became reasonable for literacy. In particular, the elimination of the space (in publishing pages) concept, having multi-tasking structures with a low cost, and the becoming of speed as a normal concept in the digital would have provided opportunities in digital literacy. The digital environment is revealing new opportunities not only for individuals, but also for societies. The opportunity of interactivity that made distances no longer a problem could be included on one of its fruits. (Önder, 2013: 98–104). The transparency and accessibility fact make digital literacy attractive.

According to the research completed in Turkey on fifth-grade students, it was determined that traditional reading is more effective than screen literacy. It is observed that screen literacy is not strong and cannot be replaced with traditional literacy (Ertem & Özen, 2014: 344–346). Though Turkey is investing greatly in digitalizing fact in education, we should be patient to see the results of the project. Teachers in public and private schools demonstrated uneven use in digital devices. While teachers used digital and media devices less than 10% of the time in a semester, 40% of them can reach the required devices. On the other hand, a meaningful difference was observed between digital learning motivation of teachers and fields of teachers. ICT teachers use technology better (Hobbs & Tüzel 2015: 11). In another research study, it was shown that interactive boards and tablets created pedagogical problems (Pamuk et al., 2013: 1811). Even if the dimension is different, a similar problem was observed in Norway's system of education. (Sefton-Green, Nixon & Erstad, 2009). This situation can be dealt with by considering education and literacy as hybrid literacy (Ware & Warschauer, 2005) in countries such as the US. The problem can be interpreted as the continuity of interaction between traditional texts and computer literacy.

Learning and teaching materials are needed for digital competence of digital locals (Li & Ranieri, 2010). In addition to this, though there is a need for producing meaning and awareness with education technologies whose digital locals are formed institutionally, it was determined that digital literacy can be taught (Ng, 2012). Providing digital fluencies (Emily et al., 2012) in teaching with digital sources, and also other factors (socio-demographic, psychological, and social effect), should be noteworthy because of (Burnett & Merchant, 2013)

the learners' position on how, when, and what makes them learn; however, the status of teachers, the effect of print literacy, and the relation of teenagers with new devices are still unclear.

Another important point related to digitalization is the discussion of the future of writing and reading. Writing constitutes an interwoven structure with digital technology. At the same time, the central position in communication is exposed to great changes (Merchant, 2007: 126–127). Not only writing activity, but also language and its factors are changing (Karahisar, 2013). In fact, it is a hybrid situation which means that the traditional one is replaced with a digital one; however, the digital one cannot totally contain social events or facts. This situation causes many fractions and newly built structures. The problems of today's illiterates, the dearth of writing practice in the schools, the absence of critical reading skills on the job, and the negative effect of electronic media on reading activities are all matters of legitimate concern and have some basis in fact; however, they should not lead us to invent a golden age of literacy in some earlier decade (Kaestle, 1985: 33). One of the problems related to digital literacy is the obligatory change in relations and former institutions and structures which have not adopted changes and have demonstrated resistance.

Digital division has continued to increase in some areas though it is expected to decrease. Research completed in Turkey observed that students with family members that use technological devices are different from the ones that do not use them; furthermore, the status of parents, sex, and access opportunities contributes to digital divide (Yılmaz & Ersoy, 2014: 26–27). Readers who cannot reach required infrastructure for problems naturally load negative effects rather than offering a contribution. On the other hand, it is observed that the attitudes and behaviors of shareholders in education against digital literacy are also another source of the problem. Digital literacy is also a problem not only for education shareholders, but also for parents. In particular, parents should be aware of risks and opportunities of digital devices (Kabakçı et al., 2013). The second point is of control. The third point is ethic issues and the last point is to follow innovations (Yurdakul et al., 2013). Innovation is not required not only for parents, but also for all social structures.

Social networks, the share of knowledge and results of new forms of knowledge building, should be analyzed in a detailed way and investigated. This is a result of the pervasive nature of digital technologies, commercial interests, investments, and the fact that wide Internet-based sources are irregular. Therefore, critical digital literacy should be sketched out. Children, and more critically youth, should be actively prepared for the digital future (Merchant, 2007: 127). Critical digital

literacy has five sources (Hinrichsen & Coombs, 2013). These are decoding, meaning making: narrative complexity in the digital; using: producing and consuming digital texts; analyzing: becoming a discerning practitioner; and persona: identity issues and the digital. These processes need to be analyzed with digital literacy. Failure of the analyses may cause more serious problems in the future. As sharp critics against the electronic age such as Sanders (2010) alleged, the closure of traditional literacy, the creation of impassable limits, and the tendency to violence, gang, and negative behaviors of teenagers that are based on the failure of teenagers searching for a voice in uninvolved verbality can lead to such an era that even no hope to leave out of the virtual world. The collapse of written culture because of the electronic age, and not establishing a verbal approach about the future is opening up destructive ways for the teenager. On the other hand, as the e-book industry is a brand new area of digital literacy, it has some important issues such as generalized standards, inspection, collection, and the protection of copyrights (Önder, 2013: 11). Moreover, reliable information, technological competency, sale safety, demand issue, cost, publishing house issue, quality, qualification, the independence of authors, the status of material used, lending, and library issues are still waiting for solutions (Önder, 2013: 105–107).

When digital literacy is considered as a threat, information pollution and the majority of increasing information in digital settings causes difficulty in following the updates by individuals. The important thing for the individual is to not be lost in the abundance and wideness of information. Another threat is related to the time fact. Following the updates as a tool in digitalization can be a threat to tools, as well. In particular, societies that do not attend to the production of technology and do not invest in technology have become forever dependent on the digital technology. Another threat with regards to that issue is the commercial concern of technology companies, as some societies cannot closely follow digital technology. Many problems cased by technology will also create situations influencing literacy. More importantly, the multi-tasking ability of the digital technology is creating a serious problem on an individual in terms of biological capabilities and isolation from society.

Results

Literacy which is not a stabile categorical situation is varied and changes with its own internal dynamics and external factors. Literacy which is always supported with both social and technical tools acts as the prerequisite of modern societies. Today, literacy, not belonging to any time and moment, is a must for lifelong learning.

Each area where individuals meet in daily life functions as a socialization of individuals thanks to the development of literacy.

Digital literacy is a literacy where digital factors are dominant and it develops over other literacies. This literacy is not a single form. Rather it is an integrated structure with its sub- dimensions. Technological device knowledge, the ability to use them, and the formation of creative factors should be mentioned about digital literacy. In addition to this, these situations should be supported with other literacies. Because digital literacy functions as a roof comprising all other kinds of literacies.

Digital literacy has provided many opportunities for society and individuals. In particular, accessibility, openness, and support by the system ensured the implementation of literacy for everyone at any age. It also brought about many innovations to education and has changed standardized contents and applications. Social networks revealed within systems provide accessibility by individuals outside of the shareholders in the education field. On the other hand, the arising problems and opportunities demonstrate that literacy is always in a state of flux. Socio-economic and cultural problems are visible here. Generation difference, digital divide, e-book content, investments, and many problems seem to last into the future. The biggest issues in the field are the ones posing a threat. These are the factors that make the life of society and individuals a general problem with the contribution of technologic factors.

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Digital Economy and Bitcoin

Introduction

With developments in communication technology showing themselves in the 21st century, in many different areas as well as the economic area, important changes were experienced. In particular, in many subjects such as the relationships between macroeconomic indicators, employment structure, market structure, shopping style, and production processes, some innovations are observed. Although any neat definition is not formed about the changes experienced in the economy yet, any of these differences are generally dealt with under the name of the "new economy" (Akyazı & Kalça, 2003: 222) or the "digital economy".

In this section, we will discuss digital economy in its general line and make a more specific examination on "bitcoin" (i.e. digital money), one of the gains of the digital economy which today has more value than economies of some of the smallest countries in the world.

The Term "Digital Economy" and Its Emergence

The digital economy is a non-central electronic cash system, formed using a network between partners that is not based on mutual trust, which is able to provide payments between the parts (Ron and Shamir, 2012: 3). The digital economy is sometimes called the Internet economy, new economy, or web economy. However, some economists put forward that the digital economy is more integral and developed than the Internet economy. In addition, the term digital economy is not synonymous with the terms used in the 20th century in the field of accounting for only technology oriented changes such as the information economy and the network economy in (Rouse, searchcio.techtarget.com). The digital economy represents the widespread use of information and communication technologies (hardware, software, applications, and telecommunication) through all aspects of the economy (cited by Atkinson & Mckay, 2007: 7).

The digital economy, defined with the changing features of information, informatics, and communication, is a leading movement of economic development

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and social change. With the understanding of this main transformation in a better way, either studies, production, or services are invested or legal and political facts are adapted in the new age (Brynjolfsson & Kahin, 2000: 1). Mobility, cloud information[1], social networks, sensorial networks, and large data analyses are some of the most important parts of present trends in the digital economy. Collectively, these trends, besides strengthening trade, consumption, and society, make the future of everything (networks, trade, transactions, energy, health, transportation, public, etc.) that is smart possible (OECD, 2014: 26).

In order to become successful in the digital economy, there are some basic points. These are expressed as:

- to develop a reliable medium for technology and allow innovation to develop;
- to provide the right balance in order to promote innovation and commercial growth and protecting the intellectual property privacy rights of the individual;
- to effectively prevent cyber security and threats regarding attack and/or misuse, and
- to raise a digitally literate society so that people can take advantage of the growing digital economy and use information and technologies (BCS, policy.bcs.org).

Computer technology and the Internet were first invented in the United States (US) and, therefore, they include and spread the idiosyncratic values of the US. The Internet represents American style mass culture and political pluralism, and enables these values to be spread. Also, the Internet connects all societies in the world to the global market and also leads to competition. With the easiness between the transition that the Internet provides, a digital economy was created in which information became tradable and societies were again organized in order to socially, politically, and culturally adapt to this (Underwood, 2002: 265).

The digital economy, based on developments in science and communication technologies, which emerged as information-based, includes the processes of obtaining, processing, transforming, and distributing information. In general, these three basic elements consist of the computer hardware system, which provides information to be processed; the communication system, which enables information to be obtained and distributed; and the software system, which receives human support to manage the system (Nordhaus, 2001: 5). Information and communication technologies intensively affect economic, social, and individual life. Internet users, which currently number around three billion people, gradually

1 On wideband Internet, applications network with database.

spend more time on the Internet; they meet their needs for learning, having fun, shopping, and participating in social activity, and their lives become digitalized (T.C. Kalkınma Bakanlığı, 2014: 16). Together with digitalization, from now on, today, every kind of voice, writing, visual image, and piece of information can reach receivers with data consisting of "0s" and "1s" in a quicker, more effective, and more reliable way compared to previous ones (Negroponte, 1996: 10).

In economies, the existing production, consumption, and dividing processes are turned into the share and effect of the new product and services increase; in terms of the competitive power of the business world, the ability to have these technologies and to be able to use these technologies effectively becomes more remarkable and business models and the labor force market undergo change. Countries that are effectively using the information and communication technologies and information gain an international competitive advantage, while the countries which cannot utilize this instrument remain out of the race (T.C. Kalkınma Bakanlığı, 2014: 16). Together with that, digital technologies enter every area of life, and the first condition of being able to produce is that countries have the capacity to be able to compete with other countries (Green Paper, 2010: 183).

Macroeconomic Effects of Digital Economy

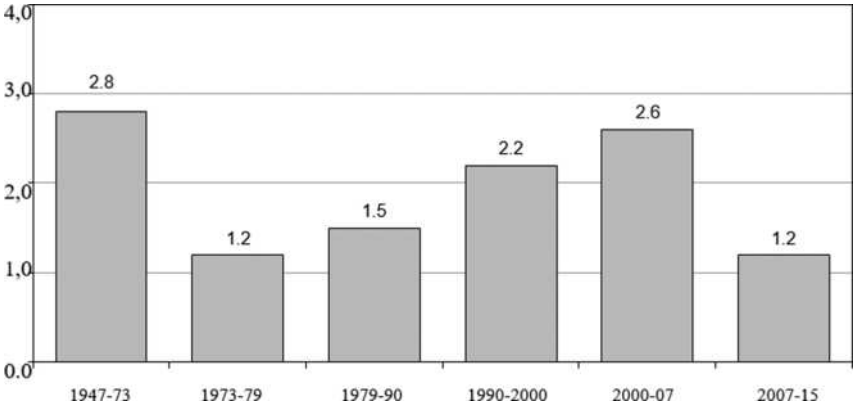
1. Effects on Productivity

According to William Nordhaus, research assistant of NBER (National Bureao of Economic Research), productivity increase in the digital economy is based on the traditional data from the Bureau of Economic Analyses and Labor Force Statistics. In addition, albeit the productivity level is being measured well, a new scale that includes sectors such as agriculture, mining, manufacturing, transportation, public, whole sale, and retail trade is used (NBER, 2016).

With regard to productivity increase in the US economy, it is seen that a sharp leap was experienced in the late 1990s. From 1995 to the mid-2000s, it was observed that productivity increase in the job sector was high and closely resembled rates in the pre-1973 period (Nordhaus, 2001: 2). While in the US, in non-agricultural sectors, the labor force productivity increase was an average of 2.8% between 1947–73. This rate averaged around 2.2% between 1990–2000 (BLS, 2016: 3). The reasons for this were comprehensively discussed, but according to many observers, in the 1990s, an important reason for part of the productivity increase was investments in automation and communication networks. Thus, it is considered that productivity increase is sustainable. The only trouble of this

hypothesis, although there were no computers between 1959–1973, is the growth[2] actualizing in this period. The main computer system became widespread in the 1960s and 1970s. Paul David presents the explanation of this in such a way. He attracts attention to the fact that the reflection of the benefits of US productivity figures took almost 20 years. That is, if perhaps a simple deduction is made from here, it can be considered that productivity acceleration in the 1990s is a delayed effect of computerization in the 1980s (Samuelson & Varian, 2001: 34).

Figure 1: Via work cycle, labor force productivity increase in non-agriculture sectors, 1947–2015 (Annual Average Percentage Variation)



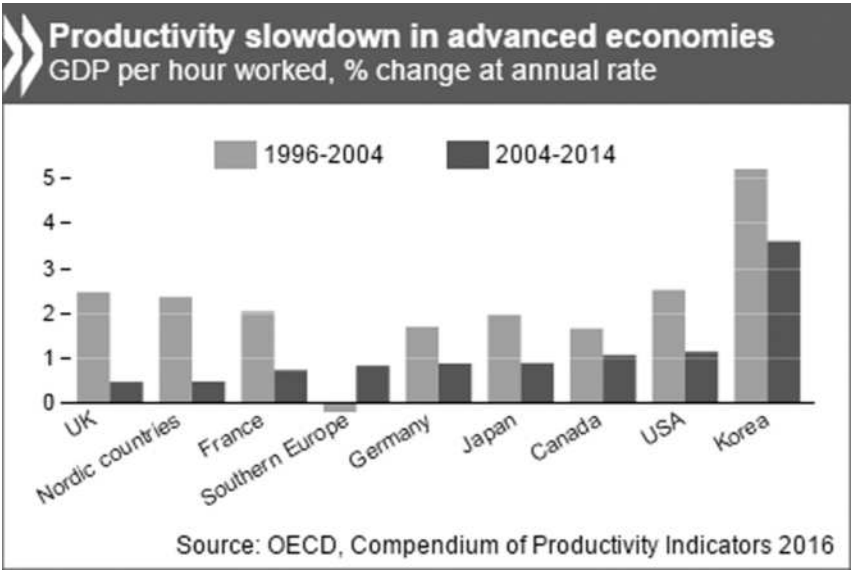
Resource: Bureau of Labor Statics Data (BLS), Productivity and Cost, March 3, 2016, s.3.

In non-agricultural sectors in the US, the labor force productivity increase, as mentioned above, ranged close to the 1973 period from the 1990s to 2000s. In the period between 1947–1973, while an annual average productivity increase of 2.8% was observed, the rate ranged close to the pre-1973 value in the periods of 1990–2000 and 2000–2007 with an average of 2.2% and 2.6%, respectively. From 2007 to the present day, attention is attracted to the fact that there was a regression again.

2 The measure describes the relationship between real output and the labor time involved in its production. Measures of labor productivity growth show the changes from period to period in the amount of goods and services produced per hour worked. They reflect the joint effects of many influences, including changes in technology; capital investment; level of output; utilization of capacity, energy, and materials; the organization of production; managerial skill; and the characteristics and effort of the workforce. Bureau of Labor Statics Data (BLS), Productivity and Cost, March 3, 2016 (BLS, S.6).

For the combination of visual, audial, and telecommunications, the automation sectors accepted the function and transfer of digital data. Those presenting services for hardware and information communication technologies form a real "digital economic sector". From 1995 to the present day, the rapid spread of digital technologies made a contribution to productivity increase in the US: If the world digital economic sector, thanks to new inventions and use areas, continues to grow, the sustainability of macroeconomic dynamics will decrease. The gap between the US and Europe, especially between France and the US, continues not only because of global growth, but also because of the importance of digital sectors in the economy (Vuccino, 2011: 1).

Figure 2: Productivity in the developed countries 1996–2014



Productivity increases slowed in many developed and developing countries after the crisis. In many OECD countries, in almost all sectors, there was a productivity decrease, comprehensively affecting both small and large firms. However, this decrease was more remarkable in industries that had new digital and technological innovations and that expected to form productivity profit shares such as the information, communication, finance, and insurance sectors. Beside this, although the number of firms educational level, technological innovations, and global value

change increases, in the examinations carried out, it reveals that slowing began before the crisis.

Various explanations can be linked to slowing job productivity and the slowing multifactorial productivity paradox including technology, productivity techniques, information gain, and the contribution of managerial applications, largely characterized by a pre-crisis. After the crisis, behind this paradox, there could be a set of factors such as ability unconformities, inanimate investment, and fall of work dynamism.

In recent years, the gross domestic product (GDP) share of investment in communication technology and telecommunication in many countries fell, especially in Germany, Sweden, Japan, and the US. Job dynamism and the pace of new firms, measured with beginning rates and substituted with companies showing less productivity, significantly decreased in many OECD countries. There is a striking labor force cost slowing productivity increase. With the low productivity activity of many employees, as a result of them being caught working unsafely, income and welfare inequalities are intensified and, thus, a disordered balance reveled (OECD, www.oecd.org).

2. Employment and Its Effect on Production

Together with the radical change of information and communication technologies, as well as the style of making the job, the occupation definition is changing. On the one hand, some occupations are removed from the fields. On the other hand, the qualified labor force deficit is becoming a problem. In particular, that automation systems became widespread and the habits of individuals including entertainment, shopping, consumption, and receiving news led to job losses in some sectors. Despite this, the emergence of information-based sectors widely using ICT and business lines and the ability to access new markets created new employment opportunities. Developments in ICT led to the appearance of many professions such as cyber security specialists, data analysts, and social media specialists (T.C. Ministry of Development, 2014: 16).

Together with the search for a qualified labor force, and the effect of information and technology, the quality of the traditional labor force underwent change. Blue collar workers were replaced with information workers who had the ability to solve problems using information, made analyses, were creative, were highly educated, had the skills of doing, and who continuously learned (Brown, 1999: 1). Thus, although it was a much-discussed subject, it was observed that the Internet could be effective on employment. The Internet creates job opportunities in information-based products and in areas such as services and software. Also, the

Internet can be used for facilitating job seeking capacity and improving labor force capacity. According to studies carried out, it was concluded that the Internet increased employment by 1.8% (Meltzer, 2016: 9).

Labor force productivity is defined as the amount of output produced by one unit of the labor force. Typically, while input consists of the total amount of hours worked, value added is used for the measurement of output. Industrial values are calculated according to the whole economy (i.e. per capital GDP of those employed in every country. In the measurement of labor force productivity, the productivity of humans instead of hours worked is used (OECD, 2014: 134).

If we want to increase labor force productivity in society, the following items must be performed:

1. The quality of the labor force must be improved via education.
2. Employees must be equipped with more and better capital.
3. Technology must be developed and, thus, more output must be obtained from the data that was given (Blinder, 2000: 2).

Another point is that thanks to the digital economy, new forms of employment form. These forms of employment can be put in order as part-time work, temporary work, limited contracts, work follow ups from the house, contract employment, and other employer employment forms (Klotz, 1999: 12).

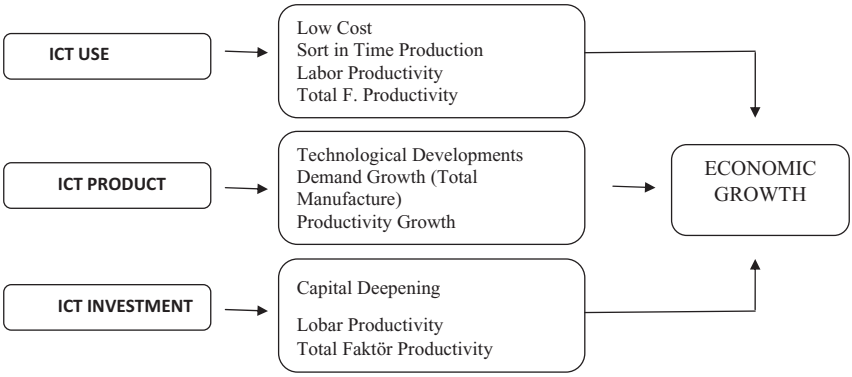
Albeit the digital economy causes the emergence of new jobs and professions and leads to new firms of employment, together with the development in the digital economy, industry production, which incorporates large employment figures, lost its power and, instead, with the development of a model mostly based on technology, caused the need for the labor force to decrease. Another point is that the digital economy incorporates the tendency of a new unemployed group to form. In particular, this system that lives to intertwine with rapid technological change has an extremely risky structure for unemployment. The banking system can be given as an example for this case. The process of threatening employees that began with automation is continuing with self-banking, Internet banking, and the like which are making it worse.

3. Effect on Growth

The digital economy with information and communication technology has been an important factor not only for the improvement of quality of life, but also for economic growth. Moreover, for a foreseeable future toward information and communication technologies, there are various signs regarding the potential to maintain sustainable growth (Atkinson & Mckay, 2007: 1). Information and

communication technologies, creating productivity increases, make a positive effect on growth and, ICT-based productivity increase concerned, as seen in the following figure, reveal three channels: use, production, and investment.

Table 1: ICT Based Productivity Increases



- **Contribution of ICT Use to Economic Growth:** The use of information and communication technologies as a basic production factor in the production activities, accelerating every kind of information flow that is necessary for production, creates the advantages of time and cost and, in this way, enables goods and services to be able to be produced at a lower cost and in a shorter time frame. They also raise total factor productivity and, thus, the productivity of the labor force, making a contribution to economic growth in a positive direction. The use of ICT, besides providing a productivity increase, increase both physical and human capital accumulation in the economy and create positive externalities. Furthermore, via networks increasing the efficiency of production sectors such as low operation costs, high productivity of information workers, and quicker innovation, they can accelerate economic growth.
- **The Contribution of ICT Production to Economic Growth:** Information and communication technologies, besides facilitating the production of goods and services and increases in productivity and demand, via rapid technological developments, can accelerate growth. In either economic activity (in the production process) or every area of life, having high usage causes the demand for goods and services for technologies of interest to increase more rapidly compared to the demand of other goods and services. Hence, in order to meet increasing demand, producing goods and services for the technologies concerned causes an increase in economic growth via rapid technological developments

created in the economy, increasing total factor productivity across the economy and contributing to value added.

– **The Contribution of ICT Investments to Economic Growth:** The effect of investment expenditures of information and communication technologies on economic growth emerges with an increase in capital (capital deepening) per employee (labor force). The effect here exhibits parallelism with productivity increase actualizing with the industrial revolution. Now, from the era of the industrial revolution, the balance of the labor force and capital used in production shows change in favor of capital and raises productivity. In a similar way, increases in ICT investments and increasing labor force productivity enable more production with the existing labor force and contribute to economic growth (cited by Türedi, 2013: 300–301).

Another point that needs to be emphasized is the point that the effects of the digital economy on growth show differentiation between developed and developing countries. Due to high-cost Internet infrastructure, it is difficult to mention the effects of the digital economy in developing countries that fell behind and were not familiar with new formations. During the early 1990s, developed economies lost the feature of having growth rates that were similar to each other. For example, in the 1990s, OECD countries, depending on the differentiation in multi-factor equipment, also brought national incomes to this parallelism (cited by Kevük, 2006: 344–345).

4. Effect on Foreign Trade

After the Second World War, changes were experienced in international trade, making the developments experienced in the technological area important. There are two different effects of technology on foreign trade. The first is the effect developing goods trade. Thus, technology enables new goods to be available or existing ones to be produced for cheaper and at a higher quality. The second effect is technology itself which is directly the subject of international trade. In this meaning, technology is imported via purchasing patents, from foreign firms, or via licensing agreements (Seyidoğlu, 2007: 666).

In the last 10 years, the digital economy witnessed considerable developments. In general, in unexpected sectors or regions, new opportunities were created for foreign trade investment and new business models. The results of Internet access, data, mobility, and digitalization are also considerably effective on the delivery of goods and services and production and use. When products are clearly considered as finished products, they can provide a digital dimension (providing value added to the main product). Transformation of character in foreign trade also arises from

global value chains of goods and services. That is, data flow becomes possible through the boundaries between both public and private networks. Cross–border data flow is necessary for global value chains and can also be a by-product of it. This, especially regarding data privacy and security policies, can cause economic and regulative policy areas to intersect with more trade regimes.

In digital trade, one of the important factors of growth is that Internet access expands globally. At the end of 2015, it is expected that 3.2 billion (2 billion in developing countries) people will be connected to the Internet. However, this also means that 4 billion people will not be connected to the Internet. 90% of these people are in developing countries. There is only limited information about cross-border data flow for digital trade and the importance of the Internet. One of the reasons for this is that no distinction is made between the online and offline delivery of goods and service in the trade data belonging to the public. Specifically, the effects of the Internet on digital trade are about the wide digitalization of the economy. (Meltzer, 2016: 8–9).

Despite these limits, in some economic models, it is shown that efforts are made to measure the relationship between Internet access, economic growth, and trade. According to the studies of the World Bank, with a growth of 10% in large band penetration, growth of 1.38% occurs in developing counties and a growth of 1.21% occurs in developed countries. According to this study, in terms of the relationship of the Internet on the trade, an increase of 10% in Internet access causes an increase in export. In terms of the relationship between the Internet and trade, it is shown that trade can also increase the use of telecommunication technology and the Internet in some countries. Also, with the digitalization of economies, through the effect of the Internet on productivity is observed that has also an effect on trade. For example, with the use of the Internet, data are collected and can be analyzed; thus, developing distribution and transportation programs and making supply firms can increase more effective, firm productivity. In fact, from the mid-1990s to the mid-2000s, most of the strong productivity increase in the US made a contribution to strong investments in information and telecommunication technology. In a recent study carried out by European Union (EU) firms, it was shown that labor force productivity increased in firms that participated in e-trade between 2003–2007 and that e-trade consisted of 17% of labor force productivity in the EU (Meltzer, 2016: 9).

Information and communication technologies facilitated globalization, increasing communication speed and reducing its cost, providing quicker and cheaper interaction, and facilitating distribution thanks to integrated networks by regionalizing many products and activities. Information and communication

technologies have strongly contributed to globalization by establishing direct and rapid communication and connections, reducing economic investments, saving time, and narrowing the distances. Lowered change costs, and made financial markets active 24 hours a day in the dimension of countries and continents. Thanks to applications of electronic reporting and documentations regarding custom practices, the removal of many technical barriers became possible (Odyakmaz, 2000: 3).

Use Areas of the Digital Economy

The technologies underlying the digital economy go beyond the Internet and personal computers. Information and communication technologies were placed not only in technological products such as mobile phones, but also in a very wide product range such as MP3 players and digital cameras. Information and communication technologies are used in other products including washing machines, cars, credit cards, and industrial products (lasers, instruments, robots). In order to provide the continuity of cheaper, better, and easier use, organizations find new and enlarged use areas in information and communication technologies every day. As has been pointed out by observers specializing in information and communication technologies, in the last 40 years, a critical step in the transformation of technological potential in economic productivity is that users of information and communication technologies discovered the thought of "How can we use processing power quicker and cheaper than usual?" Today, even listing one-tenth of new applications, whose use areas are formed in a wide range, has become a large task for sectors (Atkinson & Mckay, 2007: 7). The most important areas of the digital economy, spread to a large area, are reported below:

- Transportation and Telecommunication: Thanks to transportation and telecommunication technology, political and economic borders in countries lost their importance. An event that is experienced on one side of the world can affect a place on the other side of the world in a very short time. Thanks to this, transportation and communication costs largely fell and people and markets were able to more easily communicate with the removal of borders. Furthermore, the nation-state lost its importance and economies became more dependent on each other. With economic globalization, in goods and services, cross-border operations for international capital movements increased (Öztürk, 2005: 38).

- Education: With the flexible production digital economy, digitalization, network structures, and the service sector stand out and increase the importance of investments in people, resulting in lifelong learning becoming the main target (Salur, 2012: 54). With the digital economy, we entered a period where investments in people are higher than physical capital (Pohjola, 2002: 143). At the same time, as the digital economy becomes widespread, universities, private course service providers, and other educational services, thanks to technologies such as video conferences and online cooperation portals, are able to present courses via remote education without the need for face-to-face communication (OECD, 2014: 72). This also gives the opportunity for more people to benefit from the services that are presented.
- Financial Services and some Economic Innovations: Although banks, insurance providers, and other firms, including non-traditional services, still support the operation of branch networks, there are significant opportunities for customers to manage their own finances, conduct administrative procedures, and access new products online. The better use of data also provides opportunity to grow in connection with products such as personal spending analysis used for consumer understanding and advertisement income. The digital economy enables specific operations to be completed more efficiently, including following digital indices, managing investment portfolios, and buying and selling with a high frequency (OECD, 2014: 72). Thanks to financial operation becoming easier with the use of the Internet, many Internet users are able to directly manage their transactions in financial markets without the help of a mediator. Together with technological developments, e-finance applications acquiring a place for themselves change the surface of the financial service industry. With new forms of service, in which banks, brokers, and firms take place online, there is an opportunity to present a comparative financial service to consumers in different countries (Claessens et al., 2001: 3).

On the other hand, the digital economy is interested in the multidirectional transformation of commercial interactions and operations and also in providing innovations. For example, together with the digital economy, new digital money payment processes emerged including the "digital wallet" and "bitcoin" (Rouse, searchcio.techtarget.com). The digital wallet is a type of software that enables money to be kept, spent, and made available on electronic devices of the user. It is an electronic wallet, in which credit cards, bank cards, or prepaid cards can be recognized in a single place. Since digital wallets provide communication between users and banks, in the transactions, which are conducted on the wallet, although authority belongs to the user, security is mostly under the responsibility of bank.

According to the studies of Carlisle & Gallagher Consulting Group[3], it is expected that the digital wallet will be the first payment method preferred by smartphone users in 2017 (psmmag.com). Bitcoin is an electronic money transfer unit actualizing between users that are connected through a computer network system (Ege, 2013: 23). Since the explanation of Bitcoin, which is one of the important innovations of the digital economy, and a description of how it recently acquired a place in our life will be discussed in the following sections, at the moment, we only provide its definition.

- Manufacturing and Agriculture: The digital economy, beside controlling robots and having the ability to monitor production processes in the factory, provided an increase in planning and development. The products produced have also become increasingly information intensive. In the automotive sector, in supposedly 90% of new features of cars, there are important software components. In farms, products, animals, and land can be observed using environmental quality systems. Increasingly, routine procedures and agricultural equipment can be kept under control via automation systems (OECD, 2014: 72).
- Health: The digital economy, in the health sector, creates a revolution by providing opportunities from remote diagnosing using health records to increasing patient experiences and system efficiency. In addition, the digital economy provides an opportunity to announce medicament and other treatment options.
- Media and Broadcasting: The digital economy, with its increasing wideband access, thanks to traditional media players, largely opened new ways for transmitting content. Furthermore, via enabling non-traditional new resources and participation in news media, and forming social networks and user content, the digital economy provided an increase of user participation in the media, which largely changed the media and broadcasting industry. In addition, the digital economy increased the strengths of the company for receiving information about the views of the digital economy and towards the use of this information (ECD, 2014: 73).

In health, education, and telecommunication sectors, with digital transformation applied in many areas, productivity increase occurred and, together with the increase of digital applications, has continued to increase. Revolution in information and communication technologies has many comprehensive benefits.

3 In the financial services sector, established in the US in 2002, they are a technological and management consultancy, presenting complex technological solutions (www.bloomberg.com).

In many issues such as improving quality of life, making it easier to receive information, and improving the quality of health services, the digital economy plays an active role. Although the importance of these benefits have already been mentioned, perhaps the most important benefit of this revolution is the effect of the digital economy on the economy and economic production. Information and communication technologies are the main factors that are responsible for reversing the slowing of productivity between the mid-1970s to the mid-1990s and are the maintaining elements that exist today (Atkinson & Mckay, 2007: 10).

Importance of the Digital Economy

The digital economy develops rapidly all over the world. The digital economy, which is the only and most important factor for maintaining innovation and competition, has a large potential for European entrepreneurs and Small and Medium Sized Enterprises (SMSEs). Unfortunately, today, only 2% of European entrepreneurs benefit from the advantages of new digital opportunities. How much European businesses can adapt to digital technologies will be the main determinative of their future growths. New trends such as cloud informatics, mobile web services, smart networks, and social media are changing the appearance of work, the responsibilities of job leaders, and the limits of their enterprises that are radically modifying the nature of jobs. These trends provide more opportunity than technological innovations. Innovation in business models promote access to international markets and information transfer (ec.europa.eu). In addition, the digital economy, which creates a high level competitive environment, removing time and space limits for the communication of information, with this environment that emerges, is important in terms of presenting a market economy, which is more easily accessed in the rate of reducing inflation effect, and in which there is an intensively competitive environment (Aslan, 2007: 54).

What is Bitcoin?

The gradual increasing use of the Internet, which becomes the sine qua non of our life in present days, becomes effective on commercial life. For example, by becoming widespread, electronic trade enabled the idiosyncratic economic integrity of digital media to form. The developing virtual economy created monetary units referred to as "virtual money", including Litecoin, Amazon Coin, Freicoin, Namecoin, Facebook Units, Peercoinor da Ripple, and Bitcoin. The most prevalent one among these is Bitcoin (Sarıkatipoğlu et al., 2015: 90). We will also try to closely deal with Bitcoin in this section.

First of all, let's try to define Bitcoin. Bitcoin is a new paying system and is a completely digital consensus network. It is the first paying method from partner to partner, which does not have any mediator and obtains its power from the users. From the perspective of a user, Bitcoin can be considered the same as shopping through the Internet using cash (Glantz, 2014: 1).

It is an electronic payment system, which is based on cryptographic evidence[4], instead of requiring trust; it is a system in which two parts can directly make transactions with each other, without needing a third person (Nakamoto, 2008: 1). Since the ciphering method is used, the aim of using crypto, generally called crypto monetary unit, is to provide the essence of security functions (Rogojanu & Badea, 2014: 107). Bitcoin spread on a network, whose remaining part is broadly distributed, and it is not possible to be changed with fraud. In other words, although it is virtual money, Bitcoin users have wide control of their own existence (Glantz, 2014: 4). What makes Bitcoin unique is that it is the first digital payment system, which does not have any center in the world. This situation can seem to be confusing but it is not difficult to understand the concepts underlying it (Brito & Castillo, 2016: 5). Bitcoin is essentially a digital file, in which accounts are kept in a similar way to an account book, with amounts of money on opposite sides of those accounts. In all computers in the Bitcoin network, copies of those accounts are available. The amounts in the account book do not represent anything in the physical world. Since they believe that people want to increase the amount that is present in the opposite side of their account number, that in return to this, they accept the exchange of goods and services in the real world, and also that other people will do the same thing, these amounts have value. The financial value of numbers is existent, because we believe in their values in the same way that we value real money (www.imponderablethings.com). Bitcoin can be used in the physical environment, in Internet medium, and everywhere (restaurants, cafes, private doctors, hairdressers, hotels, virtual monetary stick markets, etc.) else that accepts Bitcoin as a current monetary unit (Ege, 2013: 23). In this case, we can say that Bitcoin is as virtual as credit cards that we use in daily life, that they have certain use areas, and that they are spendable like other money (Glantz, 2014: 4).

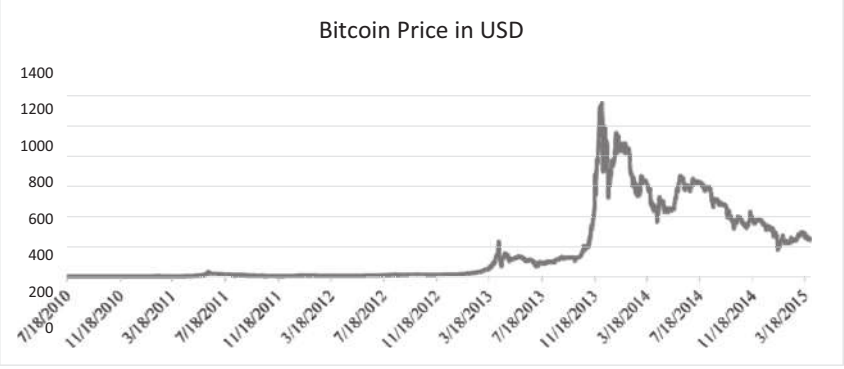
Today, money's function of facilitating the exchange of goods and services is seen as a concept that is minted by the government whereby everyone accepts its validity. Together with the global crisis experienced all over the world, on the

4 Cryptography is a whole set of techniques, which uses readable information and converts it to a state that is not able to be read by the undesired parts (https://tr.wikipedia.org/wiki/Kriptografi).

one hand, a distrust started to form against traditional banking. On the other hand, digital money has begun to take place in our lives. Moreover, it is said that today, digital money has challenged banknotes and coins. Although Bitcoin did not announce its name until 2012, after that year, it has experienced a rapid rise across the world and it has even begun to attract the attention of authorities of the monetary market (TBD, 2013: 35–36).

Virtual money is the first application of a concept first defined in 1998 by Wei Dei in cypherpunks e-mail list called the crypto monetary unit. Wei Dei put forward the opinion of a new monetary form using ciphering for controlling commercial transactions instead of through a central authority. The Bitcoin system was established by "Satoshi Nakamoto"[5] on January 4, 2009. Publicity of the system was done by means of an e-mail sent by this person. Later, this unknown person who does not want to disclose himself left the system. Since 2010, the system has been working spontaneously. In the US, there are centers where we give Bitcoins and receive monetary units in exchange for them. In these exchange centers, in exchange for Bitcoins, people can receive real monetary units such as the Pound, Euro, and Yen (Sarıkatipoğlu et al., 2015: 92). Bitcoin can be obtained by purchasing Bitcoin from the place where the exchange is done, by exchanging Bitcoin with those in our circle, or by gaining Bitcoin through competitive mining (Glantz, 2014: 2).

Table 2: Bitcoin Prices, 2010–2015



Resource: coindesk.com

5 Craig Wright, an Australian business man, in the early 2000s, announced that he was person who invented Bitcoin and that he has used the nickname Nakamoto for a long time. Although there were various views about whether or not Wright was Satoshi, the results of interviews made confirmed that he was the creator of Bitcoin.

Based on the variations in the value of the Dollar, in October 2010, the amount of Bitcoin capital was $1 million. By March 2013, its market value exceeded $1 billion. Within this time, Bitcoin has been accepted by various businesses and organizations as a payment instrument from China to coffee shops in Palo Alto and old curiosity shops in New Orleans (Kroeger, 2015: 2–3). With respect to the date of January 2015, the total amount of circulating Bitcoin, with approx. $13.7 million, showed an increase of $1 million compared to the previous year (Murphy et al., 2015: 3). The price of Bitcoin on May 2016 was $547. This price is the highest level of the last 21 months. Although the reason for this is not clearly known, it was observed that there is a significant correlation between fluctuations in the value of the monetary unit and macrocosmic values in China and that with the increase of deflation worry in China, the demand for Bitcoin increased. Due to the decrease of sales in the country and the risk of falling incomes, Chinese people withdrew their available money from the shares of the stock market. This has been observed as one of the reasons for the increase in the price Bitcoin. (www.techinside.com).

Ken Shishido, one of the proponents of Bitcoin, the digital monetary unit used on the Internet, describes his belief in Bitcoin, as follows. "I believe in individual freedom, free market competition, and small governments. 100 years ago, Dollar had equivalence as silver but there is nothing such a thing. US Government can lover when it desires and even it can completely demolish Dollar. In view of this, I do not believe in Dollar, Japan Yen, or monetary units of the other governments. I believe in silver. I believe in gold; I believe in Bitcoin". While Bitcoin, called the "money of future", is discussed by many companies and institutes from the aspect of "security concern", in August 2013, Germany officially recognized this as the last favorite of markets. In the declaration, performed by the Germany Ministry of Finance, it was reported that Bitcoins can be used across the country for paying tax or in commercial transactions. In the declaration of the Ministry, it was expressed that digital money was not only accepted as electronic money or foreign exchange and that it was only viewed as a financial instrument within Germany banking rules. In the declaration, it was underlined that Bitcoin was a "specific money that can be used for the different aims". In November 2013, Bitcoin ATMs were opened in Cyprus, Canada, and finally in Turkey. In the Digital Foreign Currency ticket window, which is operated by an e-wallet called the Travellers Box, which was installed at the Istanbul Atatürk Airport, people can exchange Bitcoin in exchange for Turkish Lira (TBD, 2013: 37–38).

The viewpoints of other countries about Bitcoin are varied. The Finland Central Bank declared that Bitcoin was not an electronic monetary unit or even an electronic payment instrument. Norwegian and Korean Governments declared

that Bitcoin did not fit into the definition of money. The Chinese Central Bank stated that Bitcoin was not real money and that it did not have a legal status and, in 2014, Bitcoin was forbidden in China. However, in January 2016, the China Central Bank announced that it bad begun to conduct studies about developing its own digital monetary unit. In the same way, in Russia, Bitcoin was forbidden. In Australia, toward late 2015, a resolution was presented for Bitcoin to be kept equivalent to the other monetary units.

In Turkey, in January 2016, there were two Bitcoin stock markets converting between the Turkish Lira and Bitcoin. These are BtcTürk and Koinim. In these stock markets, the exchange between Bitcoin and the Turkish Lira has occurred. These stock markets bring together buyers and sellers and receive a fee in exchange for their mediatory services. In Turkey, beside Bitcoin ATMs and stock markets, there are also companies accepting Bitcoin in exchange for their sales. These companies are the ones that are active in various sectors and that occur in the different cities of Turkey. This also shows that Bitcoin aficionados proliferated in Turkey and that its use gradually become widespread (Ateş, 2016: 357–358).

How Does Bitcoin Work?

From the user perspective, Bitcoin is viewed as an application or computer program giving a Bitcoin wallet that is specific to the person and, through this wallet, serves to buy and send Bitcoin among users. It shares an account book called "block chain"[6] on the back end. This notebook includes all transactions carried out and allows for the confirmation of the validity of transactions in the wallet of the user. The accuracy of transactions is protected by digital signatures corresponding to the address that sends and allows for all users to be able to send Bitcoin from their own Bitcoin addresses. In addition, everybody, by means of the processing power of its specific hardware, can help transactions to be processed and can be awarded in the form of Bitcoin. This is generally called "mining". Users, receiving an address like a bank account, can buy, keep, and send Bitcoins. Instead of being secure in physical cash, Bitcoins are taken under security using a public ciphering (encryption) method. Although their addresses are public, nobody

6 Block chain is a shared general social process, which the entire Bitcoin network is based on. All approved transactions are included in block chain. In this way, the Bitcoin wallet can calculate the disposable residual and new transactions and can approve Bitcoin expenditures belonging to the person that spends the Bitcoin. The integrity of block chain and its chronological order is supported by cryptography (bitcoin.org/tr).

knows which address belongs to which person. In Bitcoin addresses, nicknames are used (2014: 1).

Bitcoin can be used with two kinds of cryptography methods: public and private. While public cryptography can be used so that others can send money to us, with private cryptography, payment and transfer transactions can be made. That is, we use this cryptography for transactions such as transferring Bitcoin to other accounts, making payments, and converting our Bitcoins to national incomes. In view of this, we have to keep our cryptographies that are specific to us a secret (Özdan, t24.com.tr).

Advantages and Disadvantages of Using Bitcoin

There are some advantages and disadvantages of using Bitcoin. The advantages of using Bitcoin include:

- Bitcoin offers an easy paying system. For example, Bitcoin enables mobile payments, which are made via phones, to be made easily. In order to accept payments that will be made using Bitcoin, the only thing that is required is to bring the code in the Bitcoin digital wallet application to the phone display and to allow the person who wants to pay to recognize this code. With NFC radio technology[7], by getting contact between two phones, the transaction can be done (bitcoin.org).
- Digital money does not need the physical existence of those trading. In view of this, Bitcoin takes less time for its users.
- Beside the cost of transportation, storage, and security, expenditures are also prevented. In the US, for these kind of activities, $60 billion are spent in a year.
- Transactions become easier all over the world. In countries such as the US, Japan, France, among others, it is sufficient to have some amount of Bitcoin to enable transactions to occur.
- Bitcoin has the same qualifications as gold. It can be very rarely imitated. In order to be able to produce a Bitcoin, there is a need for equipment and power, and the amount of this is is limited to 21 million[8].

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7 It consists of abbreviations of the words Near, Field, and Communication. NFC is the electromagnetic radio area, passing interaction between "pioneer" and "target" devices, that enables the transfer of several pieces of data. It is similar to Bluetooth in terms of short range and is deemed a subset of RFD devices (www.chip.com.tr).

8 There are currently 1.3 million Bitcoin in circulation and, until 2040, with an increase of a few millions, there is a plan to reach 21 million Bitcoin (www.fortuneturkey.com).

- Banks do not generally accept to pay for fee commission. Directly application of transactions between nodes became easier. Bitcoin processor transmits the transactions to the nearest nodes and spreads to transactions in the network in order. The transactions that are disturbed or invalid are not accepted by the trustable nodes. Transactions are generally free of charge.
- Bitcoin use does not produce inflation. It is well known that limited monetary supply is seen as an advantage to inflation. The total amount of monetary supply consisting of Bitcoins is exactly consist of 21 million.
- Transactions can be carried out all the time and at every place by providing work flexibility. (Rogojanuand Badea, 2014: 109–110). There are no bank holidays and obligatory limits. Bitcoin presents users with the opportunity to control their money as they desire (Glantz, 2014: 2).
- Bitcoin users have full control on the transaction. Cases such as payment except for the desires of users or without giving information are not under consideration. Without personal information, Bitcoin can make payment. In addition, Bitcoin users can protect their Bitcoins by ciphering or reserving (Glant, 2014: 2).
- Finally, Bitcoin does not depend on any central authority or mediator institute. Therefore, they are not affected by the economic actions experienced in different countries.

The disadvantages of using Bitcoin include:

- The most important disadvantage of using Bitcoin is the problem of sudden and frequent fluctuation. Bitcoin, determined according to the exchange rate, supply, and demand, in the face of increasing demand, can experience a sudden price rise or in the case of decreasing demand, the opposite of this. Let us explain this situation with some examples. In 2013, during the crisis experienced in South Cyprus, those wanting to draw money from banks were limited to 300 Euros. Following this development, those living in the region, in order to send money abroad or to be able to receive money from abroad, began to use Bitcoin. With increasing demand for Bitcoin, which was $100 at the beginning, showed an increase of $1000 at the end of the process. Another fluctuation was experienced in China in the same year. First, the claims that China would forbid Bitcoin became a current issue. Then, the Hong Kong Central Bank warned people about being careful against digital monetary units. Following these events, Bitcoin, which was valued at $945, fell to $638.
- News such as McGox going bankrupt and hack attacks can be shown as an example to the deflations experienced in the market. Basically, although supply and demand determine falls and rises, as a requirement of its nature being

high speculative, even simple and small news can rapidly change the course (kriptobilgi.com).

- One of the disadvantages of using Bitcoin is the problem with security violation. Due to the fact that Bitcoins are used in an online medium, vulnerability increased. Security violations can lead to the loss of accumulated violations. If Bitcoins are stolen or lost, there is no institute to fix the damage (Rogojanu & Badea, 2014: 111). One of the largest security violations in history is the event, in which McGox was hacked, which is one of Tokyo's centered Bitcoin exchange offices. While name or names behind this hack are not still known, hackers, entering the system, succeeded in stealing 650.000 Bitcoins. McGox declared bankruptcy as a result (hwp.com.tr).
- Cyber crimes that are done on digital transactions could be one of the disadvantages of using Bitcoin. Bitcoin is responsible for the illegal activities that it encourages such as gambling, tax evasion, and terrorism and it facilitates the transactions of forbidden goods. That is why the American Treasury Department declared that it will apply the rules related to money laundering in the use of digital money. Again, the Department of New York Financial Services, in the scope of a larger investigation related to their own applications, summoned various firms related to Bitcoin (Rogojanu & Badea, 2014: 112).

Conclusion

Although there are some differences in the views of economists and those studying technology regarding the effect of developments in information and communication technologies on the run of the economy, the main point that they have consensus on is the view that in the next process, these developments, modifying the existent paradigm, will innovate the operation system of the economy. The change of traditional payment instruments with the coming of the digital money transfer, the transformation of traditional trade to electronic trade, and changes alike, together with the digital economy acquiring a place in our life, became remaining face of the innovation and competition.

In particular, the subject of digital money acquired an important place in light of scientific studies in recent times. Although the first commercial transaction began in 2010 and a short time passed in this interval, thanks to the results it obtains today, Bitcoin was placed in a different place by the financial world, the academy, and the media and it is more sophisticated. Bitcoin, which is independent of central management, does not have any mediator, can make rapid transfers, does not have any limit and constriction, is almost costless, and is followed with interest by many countries at the present day. In addition, since the amounts of

either supply and demand of Bitcoin in a day or the reactions it gives to events taking place reflect the prices, Bitcoin buying-selling forms an opportunity for people wanting speculative aimed investment.

Nowadays, it is considered that Bitcoin, called the "The capital of the future" and seen as the biggest second invention, will be revolutionary and will fill the gaps of the market with its sophisticated and strong substructure.

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Digital Politics

Introduction

Early on the Internet started to become popular; the points of views and perception styles towards it took different forms. This new and different communication tool had difficulties in its birth like all other communication tools and it was considered from positive and negative perspectives. This difference caused different ideas which are related to the effect of the Internet on the political field. It is an inevitable truth that this subject has aroused the interest of academics. For this reason, in a short time, research studies began to be conducted to investigate the innovations that the Internet could bring and the opportunities that it could bring to the political field. Firstly, with skeptical approaches, later with the positive perspective that we may consider, the Internet has become a part of our life, and is considered in different forms.

With the Internet being used and becoming popular, two basic perceptions or basic approaches have emerged for political communication. One of them is an approach that is based on 'citizen' fact, while the one is an assessment that deals with it in terms of a 'political actor' (Strandberg, 2006: 10).

Citizen Aspect

The approach that is based on citizen fact is evaluated within the frame of two different and contrary theories. The first approach is 'reinforcement' and the other one is 'mobilization'. Reinforcement and mobilization deal with theories about the participation of citizens in political activities using digital opportunities and their online interest on the Internet within the frame of two contrary views (Norris, 2001: 217). It is possible to describe one of these views as pessimistic and skeptical and the other one as optimistic.

Reinforcement Approach

According to the reinforcement approach that looks at the Internet as staid and skeptical, the Internet will not change the existing structure of social inequality

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and political participation; on the contrary, it will strengthen this existing unequal and negative situation. The Internet is a communication tool that will expand the size of the gap between people who have it and do not have it, so, it will serve to reinforce the existing inequality situation (Tosun, 2001: 107). (As a skeptical and pessimist approach, reinforcment elaborates that the coming of the Internet allows for more opportunity for socially and politically superior ones. The lower class will not have access to it, and if they do, it will be in a recognizable shortage.)

With the Internet's role of providing new information and communication sources to the ones who are interested in politics, especially when the unequal situation in the periods when the Internet has emerged is considered, it seems appropriate to act with suspicion to the Internet's transformative potential towards democratic participation which is defended by those who accept the mobilization approach. Because, very clearly, there is such a situation where it is possible to differentiate rich-poor, advanced-less advanced, and developed-undeveloped. This is not a question of having or not having Internet access in small communities. Rather, it is about it having negative and skeptical facts on intra-country relations.

Several types of research studies have been conducted, especially in the 90s, that emphasize the negative effects of similar online canals on civil responsibility in opposition to optimistic views such as 'the Internet will support online communities which are composed of persons who have similar ideas', 'it will make contribution to a better democracy with more equipped voters' and 'it will gather voters who are divided and estranged from policy' (Yılmaz, 2008: 202–203).

If we evaluate the situation when the Internet started to become popular, in some ways, we may think that the reinforcement approach is true. The general situation, especially before Web 2.0, supports this approach. Because, in the 90s, differences in the general world map completely had characteristics of this inequality. In United States of America (USA) statistics, computer ownership rates are higher than 60% and the subscriber rate is over 53 million throughout the country. This situation is the complete opposite when we look at their next door neighbor Haiti. Haiti's unknown computer ownership rate and its internet usage rate of 0,96% become the concrete indicator of inequality. The situation is not different for Africa. When we compare African Internet usage to Europe, there is tremendous inequality as 20% of European citizens have access to the Internet compared to only 0.99% of African citizens. Electronic fate like themselves. The Internet subscriber number in Africa composes 0,9% of the population and the computer ownership rate is approximately 1,23% (Aktaş, 2004: 187–196).

In developed countries whose internet substructure is developed and whose usage of the Internet spread to the base, there actually is not a hopeful situation in

terms of politics. This was valid on the startup times of the Internet conventional media tools. Nowadays, with more interactivity and different forms of communication tools, this approach is not as strong. When we look at it from this side, the reinforcement approach is not unearthly; it is an accurate approach from several ways.

It is seen that assessments and statistical data across the world have similar features in terms of Turkey, too. Especially in the 90s, the Internet started to become popular and it is possible to talk about a serious inequality situation. The fact that 'the Internet users have a qualified profile' which is expressed in following periods and is emphasized as a positive feature actually reveals the reinforced inequality situation for those periods. The Internet is an expensive communication tool in every aspect and requires quality and similar efficiency on technological areas. To go online, one should have a computer, a technological tool that in some ways middle and high economic class members have. At the same time, he/she should subscribe to a 'dial-up connection' which occupies a place in the monthly budget. Although, in the 90s, operating systems like Windows facilitated computer users' work by coming into their life, going online was an action which required technological knowledge like coding and properly using the address bar. This knowledge does not address to a specific age range except for hackers and teenagers that are curious about being a hacker. With the development and changes that happened in a short time, although there are too many participation factors, having trouble with content is another negative side. In particular, the expression language of people is controversial even today and it has simplicity and rudeness. Even today, swearing from profiles is often encountered. So, the Internet in Turkey and the world adventure in the 90s has a quality to approve the 'Reinforcement Approach'.

Mobilization Approach

According to a series of views, the Internet is a new example of democracy of the ancient Greek period called 'direct democracy'. Citizens make direct and primary processing real via blogs and forums, and politics takes shape with direct participation (Budge, 1996; Hill & Hughes, 1998; Rheingold, 2000). Although a part of the defenders of the mobilization approach assess the case in the frame of the direct democracy fact, this approach is actually the opposite of the reinforcement approach. Rather than a pessimistic point of view, it has a positive point of view that even enables democratic thought to come into existence with everything thanks to the Internet. In particular, expectations and hopes from the Internet are at a high level in terms of politics.

Although the mobilization approach has been first suggested with the Internet, it has begun to be mentioned more day-by-day. Of course, the Internet becoming

popular and the fast development process have an influence on this approach's development. But especially the changes in scientists' views towards the subject are remarkable. A lot of researchers reveal the Internet's potential, the role that it can play in a political way, and how it can be a communication tool for different social layers (Norris, 2001; Hill & Hughes, 1998; Johnson & Kaye, 2003; Gibson & Rommele, 2005; Coleman & Goetze, 2001; Yılmaz, 2008; Karaçor, 2009).

According to the mobilization approach, the Internet has great impacts on the political field as a new communication tool. The Internet's features that allow people to be online without time and place restrictions, be interactive, and create a variety of different texts, makes this tool so powerful to possess the reconstruction potential to run the political process even in the long term. When the usage of the Internet and other new communication technologies provide the opportunity to close the gap between people who govern and people who are governed, it strengthens democracy, too. According to these theoreticians, the Internet represents a different form of participation and becomes different from traditional participation activities like working for political parties, organizing social movements, and participating in lobby activities for political candidates. The Internet reduces barriers in front of citizens and widens up political argument opportunities, the dissemination of information, and group interaction. Also, it facilitates and enriches thinking because it increases information in the public sphere with new vertical and horizontal communication forms.

The Internet fact has reached very different levels in terms of citizens, especially with Web 2.0 technology. Having great differences with classic one-way communication tools before, the Internet platform has become interactive; every recipient has become a place where he/she can be a broadcaster. For this reason, in the short time, blogs, microblogs, and social media canals have started to be used interactively with a two-way broadcasting mentality. The year 2000 marks the start of interactive media tools and programs like social media formats which create opportunities stated above. The individual broadcaster format that primarily started with forums and blogs has continued with social media platforms and has developed much more in recent years.

Forums and Blogs

The forum is a site where people discuss a topic under a moderator's supervision or share information. These sites can be about very different topics and they can act as Internet portals which are created as pure forum sites including tens of topics and subtopics. They operate mostly with a member base. A blog is a network diary or day book. They are websites that look like a diary and people can create

them however they want and they can write what they want on them without having any technological knowledge.

Forums and blogs are important for society and social movements for three reasons. Firstly, forums and blogs are tools to organize social movements. Secondly, the actions that are organized in offline surroundings are now getting the chance to be done in online platforms. Finally, they act as a tool that contributes to the public sphere, developing potential and enabling people to settle on something through interactive debates. This is because virtual platforms must be understood as an open place where conflictive discourses are discussed in various political subjects and are developed (Curran, 1991: 27).

It is seen that forums and blogs are used quite actively in terms of politics and participation. So here the fact that technology becoming more simple and cheap, internet becoming open and interactive in spite of age, economy and politics this made the Mobilization approach more stronger than the reinforcement.

Drawing attention as an academic research field in terms of politics has caused forums and blogs to be researched. Politics which is always current has met with forums and blogs which are current, too, and has been examined by researchers. Different conclusions have been reached in these research studies. Yılmaz (2011), in his work where he researched forum and blog's usage, reached a conclusion that online dissident factors did not have parallelism with election results in 2009. For this reason, voters of the party who got the majority of the votes did not yet completely take part in the digital field. Interestingly, although forums and blogs can be evaluated as positive in the frame of the 'mobilization approach', it turns out that a great majority of country citizens don't take place in digital politics, meaning that the 'reinforcement' situation is in control.

Social Media

Social media is a common term used for online tools and websites that create mutual interaction by enabling users to share information, thoughts, and interests (Sayımer, 2008: 123). Users can share content, personal information, opinions, thoughts, points of view, emotions, and perception styles and they can use these tools for interaction and chat. This definition includes message boards, blogs, networks, communities, wikis, and bookmarks. Actually, when we look from this aspect, what social media brought to our lives is revolutionizing our habits of sharing, reading, and exploring news, contents, and information. This change has influenced and reshaped all of our behaviors from political participation to sharing an opinion.

The usage of pseudonyms for being unknown in social media are now having its direct opposite because of the fact that everybody is trying to express

him/herself. Characters, which occur with sentences, opinions, aphorisms, poems, photos, videos, avatars, and nicknames, are shared daily in order to be liked and followed, has resulted in the 'my and my ego' fact. With social media tools, each individual is much more individualist from the past times and he/she does not avoid sharing his/her political views and attitudes. So, it must be pointed out that each social media tool lends credence to the 'mobilization approach' in Turkey and the entire world.

Social media is one of the most researched academic fields with its tools in recent years. This never-ending field is a field where people who transform, change, and evolve digitally, reposition and identify themselves in every respect. The political field is a significant behavior field which gets its share from this repositioning and definition.

Social media's interactivity opportunity, creating content and being manageable by users at the same time, moves it into a unique political positioning tool. From one aspect, it supports the idea that the mobilization approach actually has started to come true. As a matter of fact, it has been seen that social media accounts are used to see choices and are used as a means of expression by young people in a research study conducted on social media usage and its roles on students' political tendency formation (Kushin and Yamamoto, 2010). This research study includes positive findings and mobilization hopes towards citizen participation through social media from certain aspects. Another research study has been conducted in Austria with a quite extensive Twitter analysis and the following conclusions have been reached. Citizens from all walks of life actively join political life and the government using Twitter (Ausserhofer & Maireder, 2013). The underlining point here is that social media applications changed with Internet's Web 2.0 and made users turn into a broadcaster, a commenter, a sharer, and a participant. Especially, synchronously with events in our country in recent years, the number of people who expressed themselves politically on social media has seriously increased. It can even be said that social media is a direct expression field in terms of politics. As a matter of fact, in the research study conducted by Bostancı (2014) which included the participation of 410 social media users, it was seen that participants shared political posts even though they were not a member of a political party.

Although forums and blogs, social media, and other interactive fields are a significant research field academically due to their political potential, the research perceptive is generally around parties and political actors. Lot of research studies are thought to deal with subjects in the context of citizens and the names and fields of these studies are in this way actually research subjects related to the participation of political actors by way of social media accounts like Facebook

and Twitter. In other words, the participation of political actors and normal citizens on the same social media has made the political actors more active and the society dormant. So this angle was discussed in studies in a way that it supports the reinforcement approach (Memiş, 2015). In addition, there are many research studies that evaluate the participation factor in terms of political or social movements (Çildan et al., 2012). In general, the studies reflect that the evaluations are going on according to the actions of the political actors rather than the citizens.

Political Actor Aspect

The political actor based perspective is discussed under two main headings: the normalization approach and the equalization approach. These two views have two opposite concepts, positive and negative, exactly like in the 'citizen' aspect (Bimber & Davis, 2003; Margolis & Resnick, 2000).

Normalization Approach

The normalization approach is a basic evaluation of the reinforcement approach based on political actors. Existing inequalities based on political actors in terms of traditional media are transferred to the Internet in the same way. So, offline inequalities do not become different when they go online (Margolis & Resnick, 2000: 2; Strandberg, 2006: 11; Yılmaz, 2008: 213).

Powerful and known political actors who have a say in offline fields win from the start. Especially, in countries like Turkey whose election threshold is high, political parties and candidates should have a certain power to make themselves listen. Thanks to this, they take treasury grants, they ask for a fee in candidacy determination, and political actors are imprinted on brains thousands of times by actively using all factors of traditional media. Popularity and awareness factors that they possess cannot be overcome and forgotten. Power brings more power in politics. These factors, which appeared in the media, are the power factors that reinforce power, are higher than others, and are transferred online from the offline field. Normalization is the redenominated way of reinforcement with the political actor aspect.

The normalization approach is currently the dominating general situation in the world. Especially power factors that they don't have in the offline field, such as financial power, partisan supporters, power of easily being a part of traditional media, and guidance power, a new political actor will run in circles due to organization power by making them start with very big problems in the online field. Having power in the political field is harder than having power in other fields. For this reason, the normalization approach is dominantly seen. In other words,

the ones who are powerful in the offline field are powerful in the online field, too. The main digital tools used for this are Internet sites and social media accounts.

Internet Sites of Political Parties and Candidates

Politics has always preferred to use new and effective communication tools. This preference has allowed politics to step in every communication tool and test and use it in all skills and opportunities. This is one of the new and effective communication tools. With the popularity of the Internet in recent years, each political actor has tried to use the Internet for multiple purposes, including creating their own Internet sites.

Political parties' websites have been a popular research field since the moment that they started to be used. Numerous academic research studies have been conducted on them and studies have been made examining each aspect of them. Although in some of these research studies, where the function of party websites especially in terms of participation has been evaluated (Norris, 2003; Schneider & Foot, 2002), the normalization approach is actually supported. Because these sites are online attempts made by powerful political actors in the offline field and traditional media, they make the powerful even more powerful. All these new and technological participation efforts do not come from citizens. Rather, they come from powerful political actors. For this reason, there is nothing much that has changed.

In research studies conducted in Turkey, known and powerful actors who are predominant in traditional media and the offline field were examined (Aktaş, 2004; Özüpek et al., 2007; Calışır, 2015; Fidan & Özer, 2014; Yeniçeri, & Koker, 2011; Tarhan & Fidan, 2016a). In all of these research studies where the websites of parties and web performances of political members were attempted to be explained or where periodic comparisons were made, powerful political actors were discussed. When it is evaluated from this point, the normalization fact is seen explicitly and clearly in terms of Turkey.

Social Media Accounts of Political Parties and Candidates

Nowadays, Barack Obama's election campaign supported by social media in 2008 has continued to be shown as the most active political campaign that has been run on social media. In that period, the campaign that has been run on 16 different social media platforms is accepted as the beginning of the era of Facebook, MySpace, and Youtube in politics. In the election period, Obama reached 2.2 million followers on Facebook. Within this period, Obama and his

team managed to stay in active communication with voters on social media (Onat & Okmeydanı, 2015: 105).

Obama's campaign during the 2012 election has left Twitter's mark on the world. This election campaign has added the effect factor to the daily increasing popularity of the microblog site Twitter that is limited to 140 characters. Furthermore, Twitter has become a main means of expression in terms of both citizen and political actors. Twitter, a social media tool which is geared towards individuals rather than foundations, provides great convenience especially for candidates and their followers. At the same time, instantaneous tweets cause daily, weekly, or even monthly effects.

Social media dynamism and popularity brought by the American election atmosphere has been observed in other countries in recent years. For example, in a research study conducted on Australia's Queensland elections, an increasing Twitter interest has been mentioned since 2007. Within the frame of this interest, 80 politicians' Twitter accounts have been analyzed and it has been shown that tweets were actively used during the 2012 election campaign (Bruns & Highfield, 2013). In almost every country, social media's significance and role, especially Twitter's, has been examined in terms of the communication of politics and the communication of the election campaign. The 2013 Italy elections (Vaccari & Valeriani, 2013), the Scotland region in the United Kingdom in the 2010 elections (Baxter & Marcella, 2012), and the 2012 USA senate and president elections (Evans et al., 2014) could be instances of academic research studies made up on these areas.

Being different form websites, social media platforms like Facebook and Twitter are personal communication tools that go beyond being just institutional (Enli & Skogerbø, 2013: 757). This feature has enabled political actors to actively benefit from all social media platforms both individually and institutionally. For this reason, both parties and candidates always try to actively use their social media platforms. This diversity shows itself in scientific research studies related to the topic. As there are descriptive works in which social media's role is discussed in terms of political communication (Köseoğlu & Al, 2013), there are also the works of Baysal Berkup (2015) who researches how parties' Twitter accounts were used in general elections and other works that research political leaders' Twitter performance and following level (Keskin & Sönmez, 2015). Also, there are works that examine social media usage of candidates (Tongut & Akman, 2014; Çetin, 2015). In general, in these works, the content of social media accounts of political actors, parties, or candidates has been researched and the types of sharing that they concentrate on has been examined (Genel, 2012; Bayraktutan et al., 2012; Bayraktutan et al., 2014; Tarhan & Fidan, 2016b).

Equalization Approach

The equalization approach actually includes a fundamental romantic thought like the mobilization approach. Equalization is a belief that the Internet will make the power balance go in new and weak political actors' favor with its opportunities instead of ruling out inequalities in terms of political actors. The Internet's opportunities can rule out inequalities in terms of political actors as in the citizen base (Yılmaz, 2008: 212). In his work, Norris (2003: 43) has examined the websites of 134 political parties in European Union (EU) countries and has determined that the Internet brings more 'voice and visibility' to parties that are small according to traditional media. In their research study, Larsson and Brown (2011) have reached a similar conclusion. It was shown in their research study that majority parties bear the trace of traditional communication when minority parties use new media platforms like Twitter.

The Internet is an integrated communication tool including traditional media and new media with its potentials. The Internet's features support the equalization approach in the theoretical frame. This is because every political actor's most important problem in the beginning is making people listen to them. Once the Internet is considered, it is not important for somebody to invest a large amount of money to make themselves heard. The new way of traditional media embedded in the Internet reveals that the Internet is an integrated media. The Internet waits for the ones who know how to use old or new communication tools and methods.

The low cost of Internet sites is a significant positive thing for small political movements. At the same time, the mainstream finds a place in media and can reach larger masses of people (Margolis et al., 2003: 58). When it is looked at from this side, the Internet can basically open any door in terms of financial costs. Organizations that would normally cost large sums of money can be conducted almost freely on the Internet. Even just this sustains the equalization approach.

The most suitable and effective example for the equalization approach is Movimento 5 Stelle (Five Stars Movement), which was lead by comedian Beppe Grillo. Labeled as 'the most successful satirical banterer of our time' by nobel winning writer Daria Fo, Grillo criticizes political, financial powers, and governments and bravely mentions death and sexuality during the monologs that he performs. At the start of the 2000s, he had created his personal blog with Gianroberto Casaleggio, a communication master that he knew. Being fifth in the Web Celeb list which included the most widely read and effective blogs of the world in 2009, Grillo is still Italy's most popular blog (http://bianet.org/bianet/dunya/144514-5-yildizli-hareket-umutsuzlarin-umudu).

Starting to publish his first political messages and exchanging ideas with Casaleggio on every text in every day, Beppe Grillo defends research about the environment and sticks up for people living in a fair and judicious country with multinational companies (http://bianet.org/bianet/dunya/144514-5-yildizli-hareketumutsuzlarin-umudu). Not having expressed himself as a conservatist or radical, Beppe Grillo still does not prefer to found a party (Ianelli & Giglietto, 2015: 1009). Although he does not want to found a party, he becomes more powerful in every election. Having used platforms like Youtube and Facebook incisively after the blog system, this movement (M5S) run the majority of its organization on the Internet.

The 2013 election results are a peak point rising success and interest levels. In this election, three main political formations were seen: the Organized Radical Coalition around the Democrat Party (PD) led by Pierluigi Bersani, the Conservative Coalition (PDL) led by Silvio Berlusconi, and the new 'Five Stars Movement', a non-party movement of citizens who do not have political experience, introduced by Beppe Grillo (Ianelli ve Giglietto, 2015: 1009). The biggest surprise of the elections was that the Five Stars Movement took 25,5% of votes in total like in recent elections. Gaining 109 chairs in the House of Representatives and 54 in the Senate, Grillo, and his party Five Stars Movement, gained a critical position for possible coalition governments (http://politikaakademisi.org/2013/03/04/italya-genel-secimleri-ve-beppe-grillo/).

This party, which did not lose its independence, neutrality, and feature of being open to people, has gotten to where it is today by organizing only on the Internet. It also gained new political actors to political life using the equalization approach and it activated citizens to support the mobilization approach.

The 'New Democracy Movement' that happened in the past and the 'Gezi Movement' looked to potentially become a political entity; however, they did not succeed in spite of the potential of being the local example to these movements. The New Democracy Movement has ended without starting and the Gezi Movement has lost its main neutralism and reactional common movement feature by being expressed as being from different points to different ideologies. Actually, the New Democracy Movement is closer to the reinforcement approach rather than the equalization approach. This is because it is already a structuring for the ones who are powerful and for the ones who make their voice heard in every platform.

Conclusion

Since the moment that the Internet got out of the lab and started to come into our lives, positive and negative views have been expressed about every topic related to it. The new politics perception and understanding is one of these topics. The

concept of politics and the communication of politics have started to reshape with the Internet, whereby former pessimistic perspectives have turned into hopeful approaches. With resituated, changed structure and tools, politics is a field which dealt with two main perspectives. One of them is the citizen-based perspective and the other one is the political actor based perspective. These two perspectives include positive and negative approaches which are equivalent to each other.

These evaluations that are incompatible with each other in themselves and are equivalent with each other in the context of citizen and political actors, which are called Reinforcement-Mobilization and Normalization-Equalization, have been dealt with an evaluation as if any of them exist, another one cannot. Generally, the ones who defend the reinforcement approach object mobilization. In the same way, the ones who defend mobilization object to the reinforcement approach. The contrast of evaluations made in the citizen aspect come into existence in the political actor aspect; the ones who accept the normalization approach object to equalization, and the ones who accept equalization object to the normalization approach. It looks as if it is obligatory to choose only one of them.

But, it has been seen that the Internet, especially with Web 2.0, has enabled users to become interactive or a broadcaster, and has enabled them to select content easily, mark it, share it, and like it. Since this moment, rules have been required to be rewritten. Accepting one of these thoughts and ignoring others does not match up with today's digital politics and digital human actions. Thanks to the Internet's features, especially in some points, the powerful become more powerful. On the other hand, the citizen chain, which goes to the bottom, shows that people can express themselves from every aspect, can rule out negativity and lackings with the Internet's opportunities, and can actively participate in politics. The situation is similar in terms of the political actor. Political parties and politicians who are already powerful and deep-rooted can broadcast their features easily, widely, and creatively thanks to the Internet. But on the other hand, people who never thought that they could be political actors who express themselves quietly using the Internet's opportunities have come to positions to change something in a country's politics.

In short, at the point where the Internet has come and brought the world to, the reinforcement–mobilization and normalization-equalization approaches are all true in terms of citizen and political actors because these online facts reflect the offline world in the online platform without contradictions and limits.

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Digitalization and Civil Society

Introduction

Since the very first existence of human beings in the world, all historical periods have a name which almost the entire world unitedly accepts. One of the leading events which gives its name to the period through symbolizing a dramatic disengagement distinguishing it from the previous period and consists of historical significance is the invention of fire. After this invention, which symbolizes emerging into daylight from dark periods, each period received a name to describe it in the best way (Kaplan & Ertürk, 2012: 7).

McLuhan classified the history of human kind into four ages and stated that the transition to each period from the previous one occurred through a technological development which deeply influenced the social structure. Those four periods can be summarized as follows:

1. Tribal Age: The most important sense living during that age was "hearing". Upon the invention of the phonetic alphabet, human history transited to the Literature Age.
2. Literature Age: During that age, human beings started to use their eyes in addition to their ears which they started to use during the Tribal Age. Upon the invention of the printing press, the Printing Age started.
3. Printing Age: When the printing press was invented, human beings saw printed letters and the meaning of the words changed at that point.
4. Electronic Age: The most important characteristic of this age, which started with the invention of the telegram, is the transformation of the written culture with the invention of the printing press into the verbal culture again. During that age, privacy was completely annihilated.

When it comes dates, it is possible to add one more period to McLuhan's stages known as the digital stage (age) (Onat & Alikılıç, 2008: 1115). Birkerts (1994) stated that the culture of written media, which was the most dominant of the previous ages, came to an end and that the digital age will replace the previous age. The most important feature of this age, which is called the Post Industrial Age, Post-Modern

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Age, and Technology Age, is that "they are the technological developments which may establish social awareness so that they adapt them to social transformation" (Kaplan & Ertürk, 2012: 7).

On the one hand, the digital age states that the majority of the social rules determined by the media are the pressure of the hegemonical age; on the other hand, this digital age means a new social transformation for individuals through the help of cheap and useful technological devices. Using technology in this way allows these new types of individuals to establish their own personal environments for a new society through new rules (Kaplan & Ertürk, 2012: 7).

In the Global Village, McLuhan stated that the borders related to time and space would be abolished through the transition to advanced technology in the future, and that whoever uses technology would be able to make contact, exchange news, and share with others in the same common ground disregarding their location in the world (1989). The digital phase and virtual environment annihilate the borders of time and space and allow societies to communicate with each other through employing all the sense organs which have been used for communication up to now. The communicators encounter the Internet and Web 2.0 during the digital age (Onat & Alikılıç, 2008: 1115).

On the one hand, digitalization leads to the rapid production, dissemination, and consumption of information. On the other hand, it also brought along another development: the decrease of price and the popularization of technology (Kaplan & Ertürk, 2012: 9). With the effect of digitalization, the rapid production, dissemination, and transmission of information enable a decrease in prices and thus allows individuals from different social and economic classes to use technology. By this means, the individuals who obtain the same information from resources with different world perspectives gain the opportunity to see experiences from different perspectives and thus are able to evaluate the experiences more comprehensively. Within this period, the interactive structure of social networks and information technologies gather up individuals with similar world perspectives in virtual environments. In this way, a structure similar to communities in the real world is established through social networks. By this means, the virtual communities play an active role especially in the fictionalization and organization of social movements and organization processes. At this point, social movements are the source of inspiration to the each other thanks to technological infrastructure of new media technologies (Çaycı & Karagülle; 2014: 6372).

To summarize, the changes which emerged especially after the second half of the twentieth century evolved Web-based services towards the end of the century and this phenomenon which is called "Digitalization" caused numerous radical

changes in terms of institutional, individual, and social meaning. The aforementioned developments, which gradually increase their speed and new ones that are included almost everyday, revealed differences both in interpersonal relationships and in social structures when compared to previous periods. The social network structure and its content underwent changes with the effects of web-based technologies. Thanks to the Internet and its extension services, civil society which encounters difficulty in becoming popular among the managed class is able to make itself heard more easily and effectively without straying to the field classified as illegal. In addition, organization may have broader participation and be faster. This reveals that all the institutions in society should position themselves and their structures in accordance with the new age and activities.

Social Networks in the Digital Age

In terms of sociology, the concept of network is attributed to individuals who are connected to each other through one or more social relationships and thus constitutes a social connection (Marshall, 1999: 4). The network society means a society which regularly uses global networks in order to communicate and manage. Everybody in society is connected through social networks. Each individual constitutes a climax or a center in the social network of another person. The majority of our life quality is influenced by the quality of our social network. Our life standard depends on the standards of our social networks. If we adapt Marshall McLuhan's expressions in his book "the Global Village", we see that "We create our social networks and then our networks shape us" (Hamilton, 2003).

Nowadays, terms such as information society and communication society, which are employed to define social formation, have been substituted for the term network society to define the earth which was surrounded by new communication technologies (Tutal, 2006: 56). There are various approaches in the social sciences related to the network society. However, the most well-known and effective one belongs to Manuel Castells.

According to Castells, individuals live in a network society where they are globally and locally connected and interconnected to each other (2005). The networks gradually became a dominant social organization form in the society of information and knowledge (Abercrombie and Longhurst, 2007: 241). The structures of communication between the networks depend on information technologies which function in light speed and transform some processes in society. By this means, human beings come together more easily, cheaply, and rapidly. Human beings who hear about each other in a short time, thus, come together both in social networks and in real environments and act together when there is a common

problem (Castells, 2005: 623). Political and cultural life is restructured according to this network structure. Manuel Castells claims that such a transformation, which globally emerges upon the development of information and communication technologies, constituted the network society (2006). In this network society, "the message management" becomes more important than the past upon developments in computer and Internet technologies to shorten time and approximate distances. This transformation mentioned by Castells includes the relationships of politics and the relationships between the state and society. The author expresses this occasion as follows: "Everything started with the social networks on the internet, because they are the autonomous fields which have dominated the communication channels as the abutment for the governments throughout the history and they were widely out of the control of the companies". A cross-breed public sphere consisting of an urban society which was newly created from digital social networks lies in the heart of the movement both as an instrument to think about oneself and as the expression of public governments (Castells: 2013, 21).

Social networks are the communication instruments which transfer digital information to numerous people and to the world and have the capacity of connecting to the limitless number of networks. A cross-breed public sphere consisting of digital social networks and a newly created urban society lies in the heart of the movement both as an instrument of reflection about itself and as an expression of people's power (Castells: 2013, 21).

Information technologies that enabled social networks were reestablished differently from the social networks in real life. There are differences between social networks on the Internet and social networks in real life. First of all, social networks on the Internet are more pervious than in real life. Although it is difficult to enter into groups and become effective in real life, it is easier to access the social networks of individuals in the Internet environment. Social networks in real life consist of individuals who are frequently met and have stronger connections; however, it is easier to accept people who are rarely seen in social networks on the Internet. The Internet and the web are not classified as is seen in biological networks and this means that the networks with numerous connected individuals are linked to the networks with lower connections. Diseases spread more easily in social networks but the disease can spread as far as it reaches and the spread of vaccination against the disease or the treatment is also easier (Kimberly, 2004: 7, cited by Onat & Alikılıç, 2008: 1118).

The Internet, which is the most distinct feature of the new age and can enter into pockets thanks to developing technological communication instruments, has turned into social networks that are much more different than the past. In the

broad sense, civil society is able to freely express and share its ideas without the oppression of the government thanks to new information technologies.

Non-Governmental Organizations and the Internet

To describe it plainly, civil society means "the organized society". Namely, all sections of society come together for different issues and organized style (Yegen, 2013: 125). In the Dictionary of Social Sciences, the term civil society was defined as follows (Demir and Acar, 1997: 202, cited by Aktaş, 2008: 93).

1. The social activities which are far from the inspection and suppression and determination of the state
2. A society where individuals comfortably establish relationships and participate in the cultural activities without obtaining permission from the state or public force or without fearing prosecution,
3. The voluntarily and consensually established institutions or activities which are out of the fields that are under the direct control of the state and are relatively independent from the suppression of economic relationships.

Keyman (2006: 3) defines civil society as "the common field consisted by the voluntary institutions which actively participate in the process of finding effective and long-term solutions to the social problems and aim to produce policies to activate those solutions in principle". The term civil society means recognizing all the elements of a society.

From the point of non-governmental organizations, non-governmental organizations are defined, according to the definition of the European Union (EU), as the institutions which play a vital role in terms of establishing and maintaining pluralistic democracy through directly contributing to the social and economic development of the country where organized citizens reside and in contributing to the order of civil society (sometimes more than the state itself) (Ciğerdelen, 2005: 518). Non-governmental organizations represent "an organizational field" which functions across a wide-range of fields from voluntary organizations to think tank organizations, from social movements to citizenship initiatives, and from non-governmental institutions to unions and trade associations. Within this organizational structure, the movement field of civil society has gained not only local and national qualification but also regional and global ones since the 1980's, especially during the 2000's (Başfırıncı, 2014: 1).

Non-profit-making non-governmental organizations, which aim to construct a better society by sorting out social problems (Kaur, 2014: 312), play a regulative role between government and society. They determine collective targets within the

framework of this role and try to impact the policies of governments and private companies to reach their goals (Biber, 2006: 32). In order to shape the public, non-governmental organizations employ various methods such as traditional media connections, advertisements, meetings, petitions, and lobbying. Media support has an important role for the success of non-governmental organizations. Sometimes society can't recognize the very successful activities since the media doesn't recognize them themselves. Even still, activities may sometimes be negatively portrayed, or exaggerated in the media, or may even be ignored (Ataseven, 1997: 32). At this point, the Internet has been an important instrument of connection and communication in efforts of transforming the disinterest of the media and society into interest and the unawareness into information. "Thanks to the internet, it was possible to get rid of the media under the patronage of the editors and thus the communication channels were opened from individual to individual, from individual to the society (blogs), from society to the individual and, most importantly, from society to society. The non-governmental organizations and the non-state organizations which existed previously and the pressure groups gained status which is active and popular than ever before. Those formations consist of one more layer out of the control of the state in the world of relationships even if they aren't threats to the sovereignty authorities of the state" (Karagöz, 2013: 136). In this sense, the Internet provides new possibilities and opportunities to non-governmental organizations which they didn't previously have.

Although the insufficiency of financial resources of non-governmental organizations is known, it is seen that the Internet is the most convenient media in answering the associational marketing applications of non-governmental organizations when the media is evaluated in terms of prices and activities (Başfırıncı, 2014: 8). The research studies that were previously conducted show that Internet users employ the Internet in order to get information rather than to use it for shopping (Cardamone and Rentschler, 2006: 353). For that reason, the use of the web may be special advantages for non-profiting institutions which don't invest in advertisements due to their limited economic resources (Marchand & Lavoie, 1998: 34). Furthermore, it is an easy process to take part in the Internet as a media form which allows for the employment of multimedia technologies rather innovatively. As a media, the Internet is a media with low denials to entering and quitting, has lower rates of using mediators, and consequently has lower prices when compared to other media tools (Hoffman & Novak, 1996: 8). Furthermore, everybody can equally access the Internet independent from the size of the site and the information within it. For that reason, the Internet is the most convenient media form for non-governmental organizations since they deal with ideas

rather than products (for example, turning attitudes into positive ones, collecting donations, and spreading ideas) (Saxton & Game, 2001).

Numerous research studies emphasize that there is a possibility of dialogue and long-term relationships thanks to the use of the Internet (Grunig & Hunt, 1984: 21). The online relationship depends on the interactiveness and individualization of the website (Bruning, Dials, & Shirka, 2008). Kent, Taylor, & White (2003) determined five ways that a website facilitates relationships: the efficacy of information, feedback cycles, convenience of interfaces, protection of guests, and the generation of return visits.

Since it has a structure that allows for interaction between human beings and computers, the Internet opened new horizons thanks to its feature called "the interaction" or "interactivity" and has changed its mono-centered feature into a multi-centered feature in which infomation could be transmitted from various areas. In fact, individuals may interact with environments/devices thanks to the Internet and moreover, they can provide content for this environment (Hoffman & Novak, 1996: 2). Through its structure which allows for interaction, the Internet also enables feedback. As is known, one of the most important stages in the communication process is the feedback system. Because, organizations may understand whether or not their messages were clearly transmitted and how their transmitted messages were given meanings by the target mass thanks to the feedback system (Denney, 1999: 155). The increase in the importance of the feedback system, which enriches the communication system, made the Internet the desired media for non-governmental organizations as well as other organizations. This is because the Internet is the media form which facilitates feedback in terms of the existing communication channels.

A website allows an economically weak non-governmental organization to join discussions when it intends to object to the obligations of a big company or the government (Elliot, 1997; Esrock & Leichty, 1998; Holtz, 1999). The Internet provides non-governmental organizations with an easy way for coming up with a solution for common problems. Furthermore, non-governmental organizations provide scientific assistance to remove the fog around problems and makes them clearer to the public (Kaur, 2014: 312). Through a well-designed website, it is possible that organizations such as non-governmental organizations become stronger and more popular without spending more money, become more visible, and create mutual interactions with potential sponsors (Ryan, 2003). Websites provide organizations with many administrative opportunities such as providing voluntary communication, determining new donors, sharing information, and creating desirousness in the public. The interactive nature of the sites establishes

a unique environment to collect information, observe public opinion, and directly share information (Taylor, Kent & White, 2001). In addition to all of these, the Internet, which shifts power balances in communication channels in its favor, enables an individual to conceal his or her real identity, thus increasing the quality of communication by increasing the freedom of expression. The Internet environment, which enables responses to messages, interacts with the environment, and supports interaction with the opportunities of multimedia, is global in terms of access to it and is open to access 24 hours a day (Başfırıncı, 2014: 9).

As well as Kornegay & Grunig (1998), Schickinger (1998) also stated that the Internet is employed in the public relations of organizations (which researchers refer to as cyber-bridge) in order to increase administrative effectiveness instead of technical ones. This term means that the implementers of public relations use the web in order to maximize the suppressive effect of the organization and increase the organizational effectiveness in the end. Thus, the Internet may be used to overcome the various differences such as differences in information, level, time, and perspectives between the implementers of public relations and dominant groups or organizational groups and the implementers. When the Internet broadens or narrows down the gap of perspectives, it means that the deficiency of the spokesperson in the classical mass communication instruments increases, and that the Internet's mass now has a voice and is able to speak. Some of the activities which may be conducted through the employment of the web in order to achieve cyber-bridging include the following: environmental scanning, following the problems, starting relationships, and electronic surveys (Naude et al., 2004: 89). In this sense, the Internet facilitates the connections between non-governmental organizations and other organizations and helps them to minimize the differences between them.

In this way, Stathopoulou classifies the benefits of the Internet for non-governmental organizations under three topics (Stathopoulou, 1999):

- The Internet provides its customer groups and shareholders with an easier opportunity for communication related to obtaining and accessing information in every topic when compared to all other instruments up to now; furthermore, it also creates opportunities to develop existing relationships and establish new relationships. Through those features, the Internet improves the social presentation of non-governmental organizations, allows shareholders to follow non-governmental organizations closely, and strengthens the institutional identity of non-governmental organizations. Such an occasion both helps to establish the trust for non-governmental organization and facilitates access to non-governmental organizations by the potential customer groups which can

voluntary access and participate in the non-governmental organizations for various purposes. In conclusion, it creates benefits to the donors. and shareholders related to the improvement of management due to the facilitation of time and space, while also decreasing marketing and operating output as a result of all those effects.

- The Internet enables non-governmental organizations to conduct marketing surveys related to their activities and creates a rich resource of information related to the ways of donations and activities of collecting donations. As mentioned previously, non-governmental organizations benefit from professional resources in obtaining information and conducting research studies due to the problems of resources they have to encounter. In this sense, the Internet helps non-governmental organizations to develop their institutional capacities as a cheap and easy resource of information and communication.
- The Internet enables non-governmental organizations to create a communication platform where they can get in touch with institutions and individuals all over the world, share information, and join forces with them. As it is known, non-governmental organizations in our country have very low levels of communication and cooperation with each other. From this point of view, the Internet is a very strong instrument since it provides an opportunity for non-governmental organizations to get in touch with other non-governmental organizations in both Turkey and other parts of the world.

The use of the Internet and websites provides non-governmental organizations a lot of advantages when compared to previous ages and traditional media instruments. However, the technology continues to develop, change, and provide new opportunities for its use by organizations and non-governmental organizations. At this point, the differences between the technologies of Web 1.0 and Web 2.0 and the improvements should be also analyzed.

Web 2.0 and Social Media

Although the definition of Web 2.0 is still open for discussion, some technologies and services such as common blogs (e.g. Blogger), video sharing sites (e.g. Youtube), social-network sites (e.g. Facebook), and wiki's (i.e. Wikipedia) were accepted as typical Web 2.0 technologies (Fine, 2007; Pascu, 2008). O'Reilly defined Web 2.0 as a platform, which consists of all connection devices (2005). Cormode and Krishnamurty preferred the definition of "the web sites which allow connection to the user profiles and links to friends through adding a strong component to its structure, enable sharing and tagging written and visual contents such as

texts, videos and pictures and encourage the contents with quality production are called" (2008: 4). Akar (2011: 14–15) expressed Web 2.0 as "a social computer term or a social media environment with contents established by the user".

Numerous researchers and information technology (IT) implementers claimed that the use of Web 2.0 technologies or services has great significance in terms of different perspectives (O'Reilly, 2005; Fine, 2007; Kaplan and Haenlein, 2010). Kaplan and Haenlein asserted that Web 2.0 is a new way for users to use the Internet. During the period of Web 1.0, the content were provided by content providers such as Online Britannica Encyclopedia. During the period of Web 2.0, the content are frequently established and modified through the participation and cooperation of all users. Kaplan and Haenlein claim that Web 2.0 is a technological and ideological platform for the evolution of social media (2010). When compared to static web pages of Web 1.0, Web 2.0 is regarded as a significant movement which enables creative and cooperative employment of the web through easy-to-use web instruments (O'Reilly, 2005).

In this sense, Web 2.0 technology, which compromises blogs, social sharing, and network sites, enables creativity and participation without requiring specialization. On the contrary, Web 1.0 failed in providing opportunities for users to actively participate. In other words, traditional media instruments don't provide people with the opportunity to participate or provide limited participation while Web 1.0 technologies gave people the opportunity to participate. By its very nature, however, technical information was required to use this opportunity to participate but Web 2.0 technologies don't require technical information to be creative or participate and thus more participants became active thanks to it. O'Reilly explained this occasion as follows; "Web 2.0 is defined with Transparency, Honesty, Trust and Reputation are supported by a simple, convenient, participant, self-service and non-central model. When compared to static web pages of Web 1.0, Web 2.0 seems a meaningful movement which enables a creative and cooperative usage of web through its easy-to-use web instruments. Web 2.0 has a participation architecture which presents data and services coming from various resources including the individual users, updates this information and services, consumes and blends with the others" (O'Reilly, 2005). Creativity and sharing are the basic feature of Web 2.0. Web 2.0 has the potential of mutually maximizing the common information of participants (Karakiza, 2014: 385). The extensive use of Web 2.0 technologies shows that the Internet transformed into a literate web from the absolute reader for the ordinary reader instruments and for those without IT specialization (Richardson, 2006; Cormode & Krishnamurty, 2008: 2–3). During the period before Web 2.0 (or during the period of Web 1.0),

only users having IT specialization such as codification were able to establish the web contents and the Internet was a read-only instrument for the most ordinary users (final users). With the extensive use of Web 2.0 technologies such as blogs, wiki's, and SNS(Social Networking Services), ordinary users had the skills to create (writing) web contents. Thus, the Internet turned into the literate web for ordinary users (Shi, 2012: 347).

To sum up the differences between Web 1.0 and Web 2.0, Web 1.0 complicates individual usage while Web 2.0 facilitates the use of it. Web 2.0 has a dynamic structure and individual choices are in the foreground. It is possible to intervene in the posted topics on Web 2.0 which gives even amateur users the opportunity to comment and make practical reactions to the topics. Web 1.0 has a static structure and it has the feature of accessing information. Web 2.0 has the features of a platform where human beings can interact with each other, not only through reading but also through participation. Web 1.0 was the biggest data store in the world while Web 2.0 is regarded as the biggest activity field of the world. The effect field of Web 1.0 was narrow while Web 2.0 has a larger effect field and appeals to more people. Since Web 2.0 has the interactive feature and allows feedback, it has a ring to it (Lincoln, 2009: 9; Koçyiğit, 2015: 21–22).

Web 2.0 technologies which provide those opportunities to the users are called "social media" in general terms. This new environment to produce and share information may be considered to be the environment for web based services where individuals meet in the virtual space as an Internet based structure (Toprak et al., 2009: 29). Smith (2010: 330) defines social media as the virtual platforms where the problems related to interactivity and shopping were discussed and defined. In a broader definition, social media, generally, may be defined as the Internet based application which comprises "the media visuals which are formed by the consumers, informed and archived by the convenient experiences or shared by the sensible consumers for easy access and established by the consumers" (Blackshaw, 2006). Seltzer and Mitrook have claimed that social media sites such as blogs became the most convenient instrument for relationships (2007). Kim defines social media as the virtual societies which users establish and share (2010: 216). Social media is a realm where information, different ideas, and experiences are shared throughout community-oriented websites and where the Internet is rapidly embedded in our lives (Weinberg, 2009: 1).

Since continuous innovation and change occurs in social media, it isn't easy to clearly classify the social media platforms. In this context, Mayfield defines social media instruments in six sub-categories, which include: social network sites, blogs, wiki's, podcasts, forums, and content sharing sites (2008: 6–8). On

the contrary, other researchers (Constantinides & Fountain, 2008: 233, Levy, 2009: 124–125) turned this classification into nine sub-groups, including: social network sites, vocational network sites, content sharing sites, blogs, micro-blogs, social bookmarking sites, wiki's, podcasts, and forums.

According to Kaplan & Haenlein, social media can be classified using two major key measurements: social presence/media richness and self-presentation/self disclosure (2010); however, social media may be classified into two groups in terms of its main purposes (Kotler, Kartajaya & Setiawan, 2010):

a) The meaningful social media where users express themselves through sharing texts, videos, pictures, and music
b) The cooperative social media where users share information and content and, generally, work together to achieve a common objective
c) The employees who exchange text messages within a local network established in an institution. The individuals in the e-mail lists and email groups are the first examples of social online networks. Afterwards, the development of technologies such as blogs, wiki's, and social network sites which provide social cooperation caused the incredible increase of online virtual societies where people get in touch, share information, and intercommunicate with each other. Today, WWW is shifted through areas of Web 2.0 and is turned into a socialized web concept (Fu, Liu & Wang, 2007: 675).

The reason for the differences in the categorization efforts is the continuous nonstop technological innovation and development in social media, as stated above. Continuously, new applications and innovations are added to social media. This occasion complicates a fixed classification in the categorization.

The Use of Media in Non-Governmental Organizations

Organizations employ social media to increase the constant interaction of input-output with people (Sundar, 2007). Individuals may establish social societies, get organized, and take action through virtual environments (Binark, 2007: 6).

Activist groups rapidly accepted the use of blogs, Facebook, and Twitter as their communication strategy and communication instrument (Kaur, 2014: 312). Through social media applications, people created real and natural dialogue environments. Moreover, it enabled the most effective formation of ideas through the sharing of different content (Evans, 2008; 5). The digital public formed by social media was created and united by activists who desired to mobilize people towards social movements which aimed to conduct social changes and influence public opinions and policies of the governments. The rapid increase in the

exchange of information and opinions in the cyber space facilitated the solution of the problems related to the bigger civil participation and the interaction for bigger participation (Kaur, 2014: 311).

Social media turned into a necessity for governments, institutions, and non-governmental organization as a communication strategy. Moreover, it is again a more important instrument to analyze the effects of social media technologies, requires making agreements with shareholders to and supporting the effective social interaction (Kaur, 2014: 314).

In recent years, one of the major factors, which accelerated the development of civil society, is social media instruments. In relation to it, "Social media instruments promisingly strengthen the civil society and public arena in the long term" (Shirky, 2011). In Western countries, liberalism existed prior to the popularization of social media instruments for a strong civil organization depending on the long-term existence of a freely speaking environment. The totalitarian authorities in Eastern states, however, complicate mutual interaction and the sharing of information between human beings. This is an obstacle standing in front of the formation of civil societies and their civilization. For that reason, civil societies in Eastern countries failed to make progress. However, social media sites turned this tide backwards and enabled the achievement of consciousness among individuals to establish civil societies. The difficulties in the prevention and control of those instruments play a significant role in this occasion. In Western counties, meanwhile, social networks reduced the cost of organization for existing civil societies and accelerated it, to support their ideologies. When considered from this point of view, the benefits of social media include the following:

- It facilitates getting organized.
- It helps in easily learning the truth.
- It increases communication between people.
- It spread ideas rapidly.
- It reduces the cost of organization and communication.
- It allows more people to react to political and social events in a short time.

Social media, in terms of its capacity to continuously update, multithread, and allow for virtual sharing (Koçyiğit, 2015: 19) seems to be an ideal environment for non-governmental organizations. Social media is an instrument that allows non-governmental organizations to reach their target groups, easily interact with the masses which are difficult to access, and popularize ideas. In order to cope with disinterest in the media, non-governmental organizations create their own profiles on social websites and directly get in touch with the members of media. Social media instruments provide rapid and interactive in-house communication.

In websites and interactive websites, members get in touch with each other, share their opinions and suggestions, and transmit the messages of non-governmental organizations (Solmaz & Görkemli, 2012: 187).

The problems of non-governmental organizations related to public relations can be listed as follows; the negative perceptions towards non-governmental organizations, the legal obstacles in front of civil organizations, the disinterest in society and the media towards the activities of non-governmental organizations, the uncertainty of institutional objectives, the uncertainty of general administrative policies, the insufficiency of in-house communication channels in the organizations, and the insufficiency of administrative participation (Biber, 2006). The technological opportunities provided by social media channels have the capacity to sort out some of the problems related to public relations and in-house communication in the organization (Onat, 2010: 107).

Non-governmental organizations use public relations to announce activities, summon, transfer activity development, and mold public opinion related to the issues of non-governmental organizations (Onat, 2010: 107).

In the research study which was internationally conducted under the name of "Global Activism and New Media" in February 2009, the functions of new media were listed as follows; announcing the image of the organization, increasing the resources of donation, providing the flow of information to journalists, interacting with the public, and providing connections with other non-governmental organizations (Seo, Kim & Yang, 2009). The disadvantage obtained at the end of the research study is the security and control of the messages and the width of online masses. In the research study, they stated that they find that attaching stories into mass communication instruments is rather important since their target groups still find new media programs to be unreliable. They also stated that they are worried that texts written on social media and blogs could be exploited by easily changing their contents (Onat, 2010: 108–109).

In the formation of stakeholder relationships, non-governmental organizations (the voluntary institutions with limited resources) should be considered as a valuable communication instrument which touches all of the important issues. The most important feature of the established relationships is the dialogical communication which allows for the mutual formation and sharing of messages between the organization and the public (Uzunoğlu & Kip, 2013: 113).

Non-governmental organizations use public relations to announce activities, summon, transfer activity development, and mold public opinion related to the issues of non-governmental organizations. For that reason, it can be said from this perspective that social media environments reflect their feature of constituting a

new public arena as well as individual communication tool (Solmaz & Görkemli, 2012: 187). In this sense, social media environments provide non-governmental organizations with new opportunities that they never had before to get the attention of society regarding their actions. In addition to traditional mass communication channels, non-governmental organizations use social media channels in their communication with their internal and external target groups in order to draw the attention of society. Social media instruments are effective communication channels not only in the relationships between non-governmental organizations and the public, but also in the organization of civil initiatives and activities which weren't gathered under any legal structures and in the discussion of social facts (Onat, 2010: 104). The institutions not only provide important practical information through the Internet, but they also provide an environment which continuously supplies bi-directional communication with target groups (Breakenridge, 2008: 14). According to Grunig and Hunt's four public relations model (Grunig and Hunt, 1984: 6), the communication environment of the Internet is an environment where the symmetrical communication model leads to the emergence of social media opportunities. Opportunities such as participation, openness, and conversation which social media provides to users without limitation of time and space shifted communication between institutions and target groups into a bi-directional symmetrical communication where the bi-directional balanced effect was obtained. The networks which spontaneously emerged on the Internet without discrimination of time and space turned into communication channels where the methods of molding public opinion, obtaining trust, consent, and prestige were employed effectively, productively, and measurably (Onat, 2010: 105).

The contemporary applications of public relations show the bi-directional symmetrical communication model as an ideal model. Social media environments are communication environments that are open to sharing and participation where organizations get into one-to-one communications with individuals in their target groups and where bi-directional communication flow is possible. Social media environments are the latest communication channels where institutional communication messages are spread in conformity with tactics of public relations. They support application fields such as crisis management, activity management, molding public opinion, and cooperation with stakeholders. The features of social media such as measurability, observability, and rapid sharing and dissemination of information are important characteristics of communication channels required in the communication with organizational target groups in public relations (Onat, 2010: 104).

The use of social media in non-governmental organizations can include: announcing organizational news, expressing and sharing opinions related to various

issues, molding public opinion, directing people towards the website, creating one-to-one communication with the public during crisis, obtaining new members, obtaining visibility, establishing communication networks with other non-governmental organizations, petition, and providing support to the campaigns of activity or aid (Onat, 2010: 117–118).

Conclusions

Civil society consists of activities which serve to the mass public who have difficulty in making themselves heard by the state related to answering such needs. When considered from this point of view, it is clear that those masses who think similarly under the same conditions need to be organized and act as a whole. In order to make this "voice" stronger, a bigger participation is necessary. Until the early 1990's, it was only possible when the interest and support of the media was obtained. Despite numerous advantages that they own, traditional media instruments and techniques were only able to limitedly present those opportunities as a result of their status. For that reason, civil society and non-governmental organizations had difficulties in accessing some masses, expressing themselves correctly, and acting more broadly and in a more organized way.

The technological developments which gained speed especially after the second half of the 20th century reached an unprecedented pace at the end of the century. Within this framework, communication got its share of those developments and underwent radical structural changes. The web-based services which are briefly called "the Internet" exercised control all around the world. By this means, fundamental changes were seen in terms of both interpersonal and social relations. Correspondingly, all the institutions, either private or public ones, had to comply with the web-based activities and conducted their activities accordingly. They transferred their services and activities into the web, and in particular, they established their websites. Technology which continued developing in the course of time also continued to change web-based technologies. Within this scope, a transition from Web 1.0 to Web 2.0 occurred and, by means of this, the effectiveness provided through the Internet increased and a completely interactive environment was achieved. Web-based services abolished the concepts of time and space.

Naturally, non-governmental institutions were impressed by those developments. The Internet and, afterward, social media provided non-governmental organizations with giant opportunities that they have never had. Civil organizations and non-governmental organizations which needed the interest and support of the media in order to grow and get organized in the past thoroughly benefited from the emerging technological changes and developments. They were able to

make themselves heard and access broader masses in a very short time. During the activities of Arab Spring, the Occupation of Wall Street, and Gezi Park Resistance, large groups of people were informed about events in a short time and they were able to quickly get organized with the support of social media. At this point, we need to lay the emphasis on the fact that the aforementioned movements didn't occur thanks to social media, but that they were enlarged and spread through the use of social media.

As was seen in the whole of society, civil society was influenced by Internet based services and employed them in order to sort out problems. Assuming that technological development will never stop, it is not a fanciful approach to expect much bigger changes in the structure of organizations and the methods of using activities.

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Digital Health

Introduction

One of the most important developments of modern life is the right of individuals to obtain information. Technological developments serve as an important auxiliary function to meet this requirement. Similarly, access to healthcare services is an indispensable, irrecusable, and inalienable right, which is extremely important for any individual. Developing digital technologies play a major role in all provisions of healthcare including informing patients, sharing information among healthcare professionals, enlightening the community, and storing information.

The investment and implementation of information technology (IT) has made an amazing contribution to the healthcare sector in recent decades. Especially in minimizing the distance and time, it provided many improvements for the benefit of patients. Beyond communication simplicities, it offers significant advantages to physicians in the diagnosis and treatment stages. Hospital Information Management Systems (HIMS) also significantly contribute to healthcare managers in management, strategic planning, coordinating, and auditing of their organizations. It helps managers to decrease costs and increase efficiency in hospitals. Despite the abundance of these positive developments, of course, it also brings along some non-negligible problems. The confidentiality of patient information and other privacy violation issues are among these problems. When it comes to the sanctity of human life, it is sometimes more important to respect human dignity than to obtain healthcare. The protection of human dignity is an unequivocal top priority in healthcare services compared to many other parameters.

Previous research (Sert, 2008: 19) addressed the right of privacy in healthcare under the following main topics: "confidentiality of the information related to the patient" and "respect for the physical privacy". The professional secrecy which requires the individual responsibility of healthcare professionals and the privacy of archives and records that require the liability of institutions and organizations are segregated in terms of ensuring the privacy of patients. According to patients' rights regulations, the main duty of healthcare professionals is to serve "in a sensitive way to human dignity" (HHY, 1998).

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Developing communication technologies and easy access to related applications result in high levels of information exposure for people. To be informed is a basic human right but it also brings some significant problems. People of the information world are also ready to provide inaccurate information sometimes to confuse people's minds. Taking advantage of the information asymmetry, they create health behaviors as they wish. The information asymmetry in healthcare is enormous and most of the time people are not in a position to make assessments about their own health conditions. Moreover, they are in a struggle to correctly understand and interpret the messages and recommendations of providers. In addition, people are exposed to confusing health information by hidden advertising and behaviors stemming from sales concerns.

The unauthorized disclosure of patient information in Turkey which we occasionally see in the media is another problem in terms of the breach of patient confidentiality. Sometimes, while the information is disclosed to irrelevant people just because of simple personal mistakes, its disclosure by institutions is a separate serious issue. Significant legal regulations are expected to reduce the violations made in this regard. Protecting privacy cannot be brought to desired levels by law enforcement because it needs to be transformed into a culture. Therefore, a lot of efforts should be made to create this awareness, especially for people who are authorized to access patient information.

On the other hand, the increasing use of technology in healthcare sometimes causes problems between healthcare professionals and patients with respect to data privacy. The technological tools and equipment, which intervene between patients and the healthcare professionals, unintentionally block humanitarian communication, the most important element of the healthcare relationship. This may cause a decrease in patient satisfaction negatively affecting the relationship between patients and healthcare professionals. In fact, this situation is an undesirable, unexpected side effect.

The target is actually the whole healthcare services community. To be successful, especially in preventive healthcare and reach all segments of society, it is necessary to prepare communication strategies and provide the public with appropriate communication channels. Therefore, those who plan and manage the healthcare system should make mass briefings for target groups using the opportunities offered by IT.

This section addresses topics such as the advantages and disadvantages of the use of digital information technologies in the healthcare sector and the opportunities it provides for healthcare managers, other healthcare professionals, and patients. In this sense, the advanced digital information systems often used in the

healthcare sector and their pros and cons are discussed. Different opinions in this regard are provided in terms of social and legal perspectives.

Hospital Information Management Systems (HIMS)

The HIMS is an integrated service of electronic applications needed for any kind of healthcare function. In particular, seven information based innovations in healthcare are considered to offer large potential benefits to providers and patients. These are: electronic communication between patients and providers, electronic prescribing, electronic records with computerized physician order entry, medical data sharing, laboratory management systems, picture archiving and communication systems, and disease management systems (First Consulting Group, 2003).

IT investment in healthcare is regarded as the driving force behind the reduction of continuously soaring costs and the enhancement of service quality, particularly in developing countries (Dey et al., 2007: 48). By better understanding the key IT issues, managers of healthcare institutions can make better decisions about healthcare IT investments and adopt effective technologies for their organizations. Information and communication technologies have the potential to reduce these barriers by eliminating physical distances, enabling the sharing of limited health resources, and making healthcare affordable and widely available to much of the deprived population (Turan & Palvia, 2014: 58).

The healthcare industry is an information-intensive industry with considerable information requirements. Hospitals have considered various information technologies as possible solutions to provide timely and accurate information in fulfilling managerial needs and improving operational effectiveness and efficiency (Chen & Hsiao, 2012: 811). IT is used to support a wide range of highly specified healthcare tasks and services. But, before implementing IT/IS, hospitals must use a comprehensive assessment method to examine the effectiveness of implementing IT/IS in order to ensure that they make the most efficient investment with their limited resources (Lin et al., 2005: 235). Because, implementing IT in the health sector is very expensive, and each IT investment has potential risks.

A comprehensive HIMS should have the ability to integrate and streamline the healthcare delivery process, improve the quality of care, increase efficiency and reduce the cost of healthcare delivery, and support research (Hillestad et al., 2005: 1105; Jha et al., 2010: 1953). Moreover, these systems have various benefits including decreased wait times for patients, reduced error in prescriptions, a reduction in the ordering of unnecessary lab tests, better monitoring of chronic illnesses, more flexible monitoring of intensive care unit patients, reduced hospitalizations resulting from improved disease management, and improved billing

(Shekelle et al., 2006). HIMSs enable more immediate and convenient clinician access to patient and medical information, which can reduce the amount of time that is required searching for or collecting medical data. The use of electronic medical records (EMR) reduces duplicate treatments and resources needed for medical transcription and increases the time available for collecting patient history information.

All over the world, healthcare systems are threatened by continuously soaring costs and demand, inconsistent and low-quality care, and poorly coordinated healthcare services (Lluch, 2011: 850). In this respect, IT is regarded as a savior by healthcare providers promising to reduce costs and enhance service quality (Turan & Palvia, 2014: 57). The most frequently used information systems are integrated HIMSs in healthcare institutions. An integrated HIMS can have many different modules but the basic modules are listed in Table 1.

Table 1: List of modules in an integrated Hospital Information Management System

Key Modules in HIMS	
Patient Administration	User Management and Authorization Module
Human Resources Module	Preventive Maintenance Module
Pharmacy Module	Nursing Module
Blood Bank Module	Housekeeping Module
LIS, RIS, HIS Modules	Quality Management and Monitoring Module
Radiology and Imaging (PACS)	File Archiving and Management Module
Dieting Module	Medical Devices Calibration Module
Statistics Module	Patient Complaints Module
Circulating Capital Distribution	Blood Bank Module
Performance Module	Infection Control Module
Financials Module (Billing, purchasing, insurance processing, materials management, accounting and payroll)	Support Modules (Monitoring, Digital Security, Third party labs device integration, barcode and pharmacy device integration and compatibility)

Source: (Ileri, 2016: 5)

Healthcare funding restrictions necessitate healthcare institutions to find more effective ways to utilize resources. Although introducing HIMSs decrease costs and increase efficiency in hospitals, implementing it requires substantial financial funds. Managers face technical barriers to ensure the ease of use of HIS, a user-friendly interface, a satisfactory system speed, the privacy and security of managerial and medical data, interoperability, integration, and a flexible system design. In this respect, we can identify four fundamental categories of barriers of

implementing HIMS. These categories are: organizational barriers, human barriers, technical barriers, and financial barriers.

If healthcare professionals believe in the usefulness of hospital information systems, they will try to learn and integrate the system into their daily work. According to studies (Chau and Hu, 2001; Karsh & Holden, 2007; Venkatesh & Davis, 2000; Zhang et al., 2010), perceived usefulness is affected by perceived ease of use, compatibility, skills, self-efficacy, prior experience, and training. When users perceive that the system's usefulness is satisfactorily high, they become more positive toward the system and are more willing to use it. Then, they believe that using such an information system enhances work performance and they adopt a positive attitude toward the system (Holden & Karsh, 2010; Yu et al., 2009).

Surely, top management is responsible for each and every activity (e.g. development of organizational structure, technological infrastructure, and giving various decisions) at all the levels of the organizations. Besides maintaining a high-quality of care; making good decisions dealing with the pressure of cost control is one of the basic problems of healthcare managers. Preferring one strategy instead of another is a difficult task for healthcare managers to overcome (Aktas et al., 2007: 143). Researchers claim that organizational characteristics intensely affect the success of IT implementation and organizations with higher IT experience have a higher possibility of undertaking complex assessments (Tsao et al., 2004; Thong, 1999; Galliers & Sutherland, 1991).

For a friendly and understandable HIMS interface design, composing such systems that are less complicated and more convenient for the daily use of standard users is critical (Khalifa, 2013: 340). Meeting this design challenge is the most important factor that will influence future success (Walsh, 2004: 1184–1187). Because of the ease of access and data transfer, electronic documents raise tremendous privacy and security risks. Sensitive personal information of patients, such as contingency diseases, drug abuse, or psychological problems may be accessed from personal health records, so, healthcare organizations should provide security against threats and violations of patient data (Turan & Palvia, 2014: 57). Using electronic systems may lead to information loss or corruption confidentiality of health information. So, access control, data encryption, or managing printing and deletion privileges should be used in hospitals to enforce patient privacy, confidentiality, and security of medical and managerial data security. HIMS should satisfy the needs of different departments by performing requirement analysis (Khalifa, 2013: 340) such as program modifications or additions such as adding alerts, reminders, patient-safety reports, changes specific to the requesting department, the rearrangement of the user-interface layout, improving response

times, increasing the speed of data searches and exporting, device interfacing, and the application of standard medical codes. Meeting these needs could facilitate clinical and administrative activities specific to the unique workflow and data management of that department (Yoo et al., 2013: 389–395).

The implementation of hospital information systems requires high operation and maintenance costs and the shortage of financial resources to invest in EMRs (Khalifa, 2013: 339) which causes trouble for healthcare institutions. The effective utilization of limited resources is a vital problem for healthcare managers (DeAngelis et al., 2003: 102–113). The cost of changing old paper systems to paperless electronic systems, insufficient healthcare financing to cover the costs of implementing HIS, and the costs of training (Amatayakul, 2010: 104–106) may lead to financial defects in the budgets. In this respect, financial issues should also be considered carefully when implementing large and complex information systems.

Finally, implementing HIMSs bring several advantages for healthcare institutions. Major benefits of HIMSs include the following:

- Much easier and faster patient admission discharges and transfer functions.
- Improved billing, contract management, and accounts receivables.
- Detailed information of the consumption of any material and service.
- Better material management and pharmacy system.
- Advanced management reporting and statistics.
- Efficient work lists, processing, and reporting of any services.
- Self-quality control.
- Barcode generation, barcode printing, and reading systems.
- Working with standards like HL7 and DICOM.
- Reorder quantity and minimum and maximum levels for each store.
- Inquiries and quotations for drugs, consumables, assets, and general items.
- Electronic scheduling and online patient registration using mobile devices.
- Electronic comparison of quotations and preferred vendor for each item.
- Electronic purchase request orders creation and approval process.
- Expired stock and quarantine systems.
- Automated drugs and consumable issues and returns to patients.
- Multiple electronic views to see the patient medical record.
- Graphical representation of the lab results and vitals.

Telemedicine Systems in Digital Health

Telemedicine is defined as "the use of medical information exchanged from one site to another via electronic communications for the health and education of the

patient or healthcare provider and for the purpose of patient care" by the American Telemedicine Association (www.americantelemed.org). A willingness and ability of clinicians to develop new ways of interacting and communicating with patients are required, as well as an adjustment of roles and identities among clinicians and professionals. At this point, telemedicine seems to be the best solution. Telemedicine is video and audio traveling as a high definition digital signal from one computer to another for the purposes of direct patient care. Telemedicine is supported by the wide availability of wireless internet infrastructure to transport digital data quickly and easily from device to device (Brooks, 2016: 2–4).

Telemedicine was developed as a solution to provide healthcare to underprivileged inaccessible regions and aims to provide equal access to medical care irrespective of geographic location (Sood et al., 2007: 574). The functions of telemedicine include: remote physician consultations, intensive care services, mental health monitoring, chronic disease management, and serving as a supplement or an alternative to traditional physician office visits. Telemedicine increases the level of choice available to patients to choose between service providers in a wide range of locations (MacFarlane et al., 2006: 246).

Telemedicine technology can be used on the basis of two concepts: synchronous and asynchronous methods. The synchronous method requires a real time communication link between groups allowing for live interaction. Remote communication devices or video conference equipment are widely used for the synchronous telemedicine concept. Both groups can see each other, access related electronic medical data, share opinions on diagnosis, and write reports together. The asynchronous telemedicine method does not require the presence of both groups at the same time. They can share electronic medical data or images but the assessment is done offline. Telemedical services may be divided into primary and premium services. When considering interactive premium services, only teleconsultation and remote diagnosis in radiology have officially been accepted by health insurances in some countries for reimbursement. Other premium services such as remote image processing, remote image fusion, or remote three-dimensional surgery need more time to become widespread all over the world (Ricke & Bartelink, 2000: 827).

The use of telemedicine systems reduces the high-cost of patient transfers for emergencies. Similarly, home monitoring telemedicine systems can decrease high-cost hospital visits. Telemedicine enhances doctor-patient communication and helps to create a better network of healthcare providers, allowing doctors around the world to exchange opinions and patient information. Telemedicine can also reduce the need for hospital readmissions, which can be an inconvenience for

patients and are a significant expense to healthcare facilities. It provides greater and faster access to a patient's medical history, reducing the risk of negative drug interactions or a poor response to treatment, while also improving administrative efficiency and coordination. Telemedicine adds a dimension of clinical protection for users by eliminating the possibility of transmitting infectious diseases between healthcare professionals and patients.

Healthcare organizations providing telemedicine services should have systematic performance management and quality improvement processes. They should ensure compliance with legislation and regulations including the protection of patient health records and telemedicine services should be integrated with HIMSs.

Finally, telemedicine increases access to healthcare; improves health outcomes; reduces healthcare, management, and transportation costs; assists in addressing shortages; and supports clinical education programs. It decreases costs by reducing long travel times and uses idle times of specialist effectively, increasing the availability of healthcare services and the overall quality of care especially in rural areas. It also reduces waiting lists and speeds up referral processes.

E-Prescribing Mechanism in Digital Health

E-prescribing is a technology framework that allows physicians to write and send prescriptions to pharmacies electronically instead of using handwritten prescriptions. E-prescriptions are computer generated prescriptions created by physicians using a HIMS and are sent directly to an e-pharmacy network by the healthcare provider. Instead of writing the prescription on paper, physicians enter the prescription directly into his/her computer. The e-prescribing systems work as follows: At first, physicians sign into the system through a verification process authenticating their identity. Standard authentication requires a username and password, although other technologies such as random-number cards, digital certificates, or fingerprint readers are available. Once authenticated, the system provides functionality specific to a user's role and authorization level. Different user types (e.g. clinicians and office staff) have different legal permissions to enter, review, or modify prescriptions. Digitally written prescriptions travel from the healthcare providers' HIMS to the electronic pharmacy network. E-prescriptions are usually sent electronically through a private and secure network. It is suggested that the basic documentation functions of e-prescribing systems that allow physicians to enter and store patient prescriptions have the potential to increase patient safety and reduce costs through improved legibility and practice efficiency (Teich et al., 2005: 366).

Beneficial features of e-prescribing include: (1) the ability to maintain a complete medication list and a recent medication history for each patient; (2) clinical

decision-support tools, including alerts and reminders which can incorporate patient-specific medical information such as patients' chronic conditions or medication allergies; (3) access to patient-specific formulary data; and (4) capacity for two-way electronic communication between the computer systems of the medical practice and the pharmacy for sending prescriptions, clarifications, and renewal requests. Together, these advanced features have the potential to improve patient safety and reduce costs by providing better patient information and clinical advice at the point of care and remove additional sources of human error in communication between practices and pharmacies (Grossman et al., 2007: 394).

Medical errors have a number of subcategories; one of these is medication errors, which are considered to be the main reason for approximately 7000 deaths annually. The occurrence of some unintended e-prescribing errors is inevitable; however, evidence shows that 9% of e-prescriptions contain medication errors (www.surescripts.com). E-prescribing enables direct communication between physicians and pharmacies over an electronic pharmacy network to increase efficiency and reduce errors (Lawrence, 2010: 24–26).

The risks and disadvantages of using e-prescribing include: failure to properly implement e-prescribing, cost of e-prescribing implementation and maintenance, emergence of e-prescribing errors (such as wrong strength, wrong quantity, dose and drug selection, direction, duplicate e-prescriptions), lack of standardized e-prescribing software, threats to patient safety due to inappropriate drug therapy, increased medication costs, increased work responsibilities and imposing an excessive burden for pharmacy personnel (such as performing additional checks involved in error recovery), reduced pharmacy workflow efficiency due to additional transaction costs, extra time required to integrate e-prescribing into workflow, possible lack of computer support services, distracting e-prescribing system design features (such as poor drop-down menus, screen design, and inaccurate patient medication), heterogeneous e-prescribing database management systems, unclaimed e-prescriptions, complicated electronic health record systems with robust clinical decision support (CDS) for e-prescribing systems, the cost of training for medical staff, and the restrictions placed on prescribing controlled substances electronically (Zadeh and Tremblay, 2016: 6).

E-prescribing offers clinicians a powerful tool to safely and efficiently manage their patient's medications. Compared to paper-based prescribing, e-prescribing can enhance patient safety and medication compliance, improve prescribing accuracy and efficiency, and reduce healthcare costs through averted adverse drug events and the substitution of less expensive drug alternatives (AMA, 2011). More sophisticated e-prescribing systems can function as automated prescription

systems. They can create and refill prescriptions for individual patients, manage medications, connect to a pharmacy, and integrate with a HIMS.

Clinical Decision Support Systems

CDS is a health IT which provides physicians, patients, and other health professionals with knowledge and person-specific information, that is intelligently filtered and retrieved at appropriate times, to enhance patient health and healthcare (Osheroff et al., 2007: 141–145). Previous research studies show that clinical decision system support can improve guideline adherence by healthcare practitioners and support healthcare practitioners in effective and efficient medical decision-making (Lau et al., 2010: 640; Bright et al., 2012: 32).

There are a growing number of CDS functions that are built into hospital information systems. Before purchasing a standalone CDS, healthcare managers should have a plan to adopt these systems with present HIMSs because CDS systems encompass a variety of complicated tools to enhance decision-making in the clinical workflow. These tools include automated alerts and reminders to healthcare providers and patients, clinical guidelines, order sets for specific conditions, focused patient data reports and summaries, documentation templates, diagnostic support, and relevant medical information. In fact, electronic reminder systems, e-prescribing systems, computerized physician order entries, and medication reconciliation systems are all strengthened by some form of CDS. Examples of clinical CDS are given in Table 2.

Table 2: Examples of CDS interventions by target area of care

Target Area of Care	Example
Preventive Care	Immunization, screening, disease management guidelines for secondary prevention
Diagnosis	Suggestions for possible diagnoses that match a patient's signs and symptoms
Planning or Implementing Treatment	Treatment guidelines for specific diagnoses, drug dosage recommendations, alerts for drug-drug interactions
Follow up Management	Corollary orders, reminders for drug adverse event monitoring
Healthcare Provider Efficiency	Care plans to minimize length of stay, order sets
Cost Reductions and Improved Patient Convenience	Duplicate testing alerts, drug formulary guidelines

Source: (Berner, 2009: 6)

CDS is not only for doctors or nurses, but also for support staff, patients, and other healthcare professionals. For instance, some practices have used 'return to clinic' reminders available in their hospital information systems to remind front desk staff to proactively call patients that are due for routine screenings to remind them of upcoming appointments or explain pre-visit preparations such as fasting, outside lab work, etc. CDS delivered to patients could take the form of detailed medication instructions, home management tips, or dietary guidelines (www.cms.gov).

Systems that provided decision support at the time and location of decision-making were substantially more likely to succeed than systems that did not provide advice at the point of care. On a practical level, findings imply that clinicians and other healthcare stakeholders should implement CDS systems that (a) provide decision support automatically as part of clinician workflow, (b) deliver decision support at the time and location of decision-making, (c) provide actionable recommendations, and (d) use a computer to generate the decision support (Kawamoto et al., 2005: 5–8).

Unnecessary or inappropriate care accounts for a significant amount of overall healthcare spending. More than 80% of overall healthcare costs are directly linked to decisions made by physicians. Studies show that physicians are enthusiastic about reducing unnecessary care and overwhelmingly endorse the use of clinical guidelines. Delivering the right decision support at the right time at the point of care is the key to reducing costs. Integrating decision support seamlessly and automatically into the provider workflow is much more likely to have an impact (www.stansonhealth.com).

Finally, in order for CDS to be effective, it must fit into the practice's workflow. Not every reminder, alert, or other intervention has to be presented to the provider during the visit. Using reminder systems, front office staff can be alerted to make sure that important laboratory work is done prior to the visit. Documentation of key elements of a patient's exam can be obtained before the provider even sees the patient. Principal shortcomings of CDS systems include: (a) decision support systems are often stand-alone applications poorly integrated into the clinician's workflow, (b) reminders generated by many decision support systems are often interruptive in nature, (c) decision support interventions may not be tightly coupled to actions (e.g. the ability to immediately order the medication triggered by the reminder), (d) the end user may not believe the decision support is relevant to their decision-making at hand, and (e) there may not always be sufficient coded data to drive decision support (www.pcpcc.org).

Information Security Management of Electronic Health Records

The protection of information assets from complex and evolving security threats is a significant challenge to the modern organization, especially for healthcare institutions. Therefore, healthcare organizations should adapt to information security systems. An information security management system is a systematic approach to managing sensitive information so that medical and managerial data of hospitals remain secure. It includes people, processes, and IT systems by applying a risk management process (www.iso.org).

Information security is classically defined as the preservation of confidentiality (ensuring that information is accessible only to authorized people), integrity (safeguarding the accuracy and completeness of information and processing methods), and availability (ensuring that authorized users have access to information systems when required) (Cavalli et al., 2004: 298).

Patient healthcare records are very confidential and should not be exposed to unauthorized people in any condition. So, healthcare managers have to identify confidentiality, integrity, and availability requirements in their organization. In order to install an effective information security management system in a hospital, the security needs of each information asset must be analyzed and appropriate controls should be applied to keep information assets safe.

There are several threats to information assets of healthcare organizations but the five main groups are described in Table 3.

Table 3: Type of threats to information assets

Type of Threat	Examples
Disclosure	Interception, improper maintenance, and hackers
Interruption	Malicious code and power failure
Modification	Data entry errors, hackers, and malicious code
Destruction	Earthquake, fire, flood, and power spikes
Removal	Theft of data and theft of systems

Source: (Cavalli et al., 2004: 300)

One of the weakest links in the information security change in hospitals is healthcare professionals who access or control critical information every day. A proper information security management system must include policies and processes that protect hospitals from data misuse by hundreds of healthcare professionals. Human characteristics behavior impacts information security and associated risks.

So, in addition to formal policy and process changes, hospital management should also try to change the culture of an organization to reflect the value it places on information security. It is critical to effectively secure the information assets of healthcare organizations.

Information security issues are usually studied in a technological context, but growing security needs have extended researchers' attention to exploring the management role in information security management. It is suggested that information security should be comprehended as high managements' priority, so, its responsibility should not be limited to IT officers only (Singh et al., 2013: 226). Information security is primarily a management and business issue, so top managers should be aware of the importance of information security policy development and implementation and should pay the required attention to it (Chang and Ho, 2006: 347). Development of information security policies in healthcare organizations is critical, but management support is also significant for effective implementation of these information security policies (Ma et al., 2009: 60). If security decisions are implemented at all levels in hospitals, a secure information architecture will be in place to exchange confidential patient information in healthcare organizations.

Solely trusting technology to provide a reliable solution to organizational information security is not enough (Singh et al., 2013: 230). Thus, a balanced approach to technical, human, and organizational factors will be more effective (Werlinger et al., 2009: 6).

Information security management can be divided into two major parts: technical and managerial aspects. Thus, integration of these two aspects will ensure the effectiveness of information security (Kayworth and Whitten, 2010: 165). Similarly, the safeguarding of information assets and data security can be ensured through the integration of technical and managerial activities (Young and Windsor, 2010: 248).

Information security policy compliance is dependent on awareness and training. Awareness creation is more effective than other measures for information security (Hagen et al., 2008: 380) and compliance training has a critical role in the development of awareness and understanding (Ma et al., 2009: 60). Thus, it is important to train healthcare staff regularly on information security management systems.

Finally, the most important factor in ensuring information security is human resources, because, in every information security system, there is a complex interplay between humans and technology (Trcek et al. 2007: 114). The reasons behind employees being a major cause of data breaches may be a lack of awareness, a lack of compliance with information security policy, an access policy violation, or a

lack of training (Rubenstein, 2008: 2–5). Effective information security management must consider human aspects along with technological dimensions (Rhee et al. 2012: 224).

The Boundaries of Technology and Privacy

The use of technology in the healthcare field should always be limited. The limit here means protecting the patients' privacy and using the technology in a way that will not cause violations. A healthcare service that does not care about human dignity will remain far from being humanitarian. Therefore, the main determinant should be the development of technology and its use in the healthcare system where it does not collide with the limits of privacy.

Patient autonomy is an indispensable element in the provision of healthcare services, which should be prioritized. Patient autonomy is only possible if the privacy of individuals can be secured. For individual privacy, autonomy associates with many factors such as confidentiality, ownership, private life, body, and sexuality. However, this does not mean that it replaces the privacy concept (Izgi, 2014: 26). The secrecy of private life is expressed in different ways such as private life, privacy zones, protection of privacy, and immunity of private life. In terms of content, each of these statements actually aims to protect the factors related to a person's private life. The purpose of the expression 'right of privacy' is to protect the area that a person wants to be confidential and inviolable (Sert, 2008: 40).

How to manage electronic patient records should not be left to the mercy of healthcare professionals, healthcare controllers, or technical system employees. If technical conditions such as electronic storage and access control rules are identified clearly, nonstandard applications and regulations will be defeated. In such a case, probably the cheapest solution would be preferred. Consequently, in order to reduce the problems, various parties such as the World Health Organization, governments, and professional organizations must agree on electronic patient records and determine standards (Bakker, 2007: 441).

In healthcare service delivery, it is not taken into consideration whether individuals are aware of how their information will be stored, used, or disclosed, or how long it will be stored and accessed in the future. As well, the information component of informed consent is ignored. In addition, even if it is considered that an individual's disclosure of information is based on his or her permission, it is quite clear that the use of this information for other purposes is not based on his or her consent (Izgi, 2014: 30).

Healthcare is both an important and a risky sector. Thus, when preparing e-health applications, the content must be prepared carefully; it must contain

accurate information and must be constantly kept up to date. In the application design stage and in the process of preparing content, information and assistance should be obtained from professionals (doctors, nurses, etc.) who are experts in their fields (Güler & Eby, 2015: 50). Otherwise, it is quite possible to encounter complicated problems.

In order to provide better services in healthcare, e-health, which is one of the components of health transformation, has been brought to the agenda. In this scope, digital applications such as the identity sharing system, core resource management system, central hospital appointment system, teleradiology, telemedicine, virtual autopsy and surgery, e-pharmacy, and e-material tracking were introduced. The "legal framework", which will be developed to minimize security concerns considered as one of the most important risks in cloud computing applications, to protect privacy, and to ensure patient security, is of great importance (Bayın et. al., 2016: 248).

'Law on the Protection of Personal Data' was adopted in 2016 in Turkey, after long discussions on information security. The law includes many regulations related to personal data, data recording, and storing. The law identifies personal data as "Any kind of information related to the natural person whose identity is identified or identifiable" (Article 3 (1) d). Article 5 (1), which states that "Personal data cannot be processed without the consent of the related person" brought some exceptions for processing information related to health without seeking the consent of the patient: "Personal data related to health and sexual life can only be processed by the individuals or the institutions and organizations obliged to keep confidential information without seeking consent of the related person, just to protect public health, to carry out preventive medicine, medical diagnosis, treatment and care services, to plan and manage health services and its financing" (Law on the Protection of Personal Data). Although legal texts on the protection of personal data existed previously, this law both provided a clearer definition of the personal data concept and increased deterrence on sanctions.

New (Social) Media in Health

Corporate communication activities based on traditional media works was a common method. With the development of communication technologies, new media (social media) has become quite popular all over the world. Institutions have also been affected by this new trend. Healthcare institutions in Turkey also use social media in their work. The Ministry of Health, in exercising the planning, execution, and supervisory functions of healthcare, uses various communication strategies to improve public health. Considering the scientific studies about the use of social media by the Ministry of Health, it is clear that its use is not yet at desired levels.

In using new media technologies in the field of health, participatory communication strategies must be developed. Given the interactive nature of new media technologies, these technologies can be used to create more participatory platforms for those communities in underdeveloped regions. It is more likely to activate the underdeveloped society in this way (Bodie & Dutta, 2008: 196). This is possible through interactive and dialogue-based communication.

A study on the use of Twitter by the Ministry of Health shows that the ministry uses the Twitter channel based on one-way communication (Yıldırım, 2014: 251). It was determined that the ministry did not respond to messages from followers and that communication was usually maintained as a one-way message transmission. As a result, the research concluded that the Ministry of Health was not effective enough in the technical use of Twitter. This inefficient use of Twitter, of course, leads to insufficient interest for its tweets which offer useful information. In another study, the social media practices (Facebook & Twitter) of the Ministry of Health were examined. The results of studies on the use of social media by the ministry are summarized below (Erkek, 2016: 149):

The events and shares of the Ministry of Health in social media did not reach a high number of likes and followers. However, acting in accordance with the strategic goals and objectives, the ministry actively used social media tools in the provision of healthcare services, and especially supported preventive healthcare services, by awareness campaigns conducted using social media accounts.

- Positive and negative comments are all presented in a clear manner on the social media account of the Ministry of Health. However, it is observed that the ministry did not respond directly to negative criticism and questions posed to the Ministry by other social media accounts. This behavior prevented discussions and crisis to occur in social media; however, sharing the answers to questions on social media would increase confidence to the institution's social media accounts.
- The model practice of the Ministry of Health has shown that public institutions do not have the required technical equipment for social media management. The social media accounts that are managed by people working in media consultancies should be used in a more efficient way for the training of public institutions staff.

Conclusions and Recommendations

People live a faster and easier life in some manners day by day as a result of developments in technology and its reflections to the daily flow of life. This simplicity,

of course, does not affect all people or organizations at the same level. Still, technological products play a facilitator role for the life of every human being. Health is undoubtedly one of the areas where technology bursts into sight. Being healthy is one of the most basic human rights. In order to achieve this goal, governments make many regulations for investments to establish and operate systems. Although healthcare is based on human labor, the use of technology is at significant levels.

The health sector plays a critical role in the digital world as it leads the development of IT because of the continuous need and request for higher quality healthcare services, faster diagnosis, and more effective treatments. In this respect, the digital health issue, especially with respect to health management information systems, has been heavily discussed in recent decades. Information systems are used broadly in healthcare organizations in various contexts and recent investments are usually done on decision support systems, resource and people management applications, project management, and database applications.

Despite its many advantages, the unintended or harmful effects of digital technology based on its operating principles should be taken into consideration, and the damage to people should be minimized as much as possible. Having the technology and the ability to use it for desired objectives and improving efficiency are not always parallel to each other. According to a study in a healthcare organization (Cakırlar & Mendi, 2016: 38), the majority of nurses expressed that the computer lessons learned in nursing education were insufficient and that they required programs enhancing the effectiveness of the use of technology in in-service training programs. Investing in IT and implementing it technically to increase organizational abilities, especially in the healthcare sector, necessitate taking care of employee's social issues as well.

Humans are social beings; they have some social aspects, rights, and values that need to be considered before the solution of their medical problems. While healing patients with the help of technology, violations undermining their values and breaking their dignity should be avoided. In addition to many significant benefits of the use of digital technologies in healthcare, there are also some features that violate people's privacy of information and the body. Besides the legal regulations with deterrent provisions to prevent abuses, awareness training should be done to raise awareness for those who use this technology. The priority of ensuring the privacy of patients must be highlighted in administrative arrangements and healthcare managers should ensure confidentiality of any type of medical data in their organizations.

Any kind of development and innovation in the healthcare field should be planned to address the well-being of people. A development that prioritizes only the medical needs of people and ignores the rest will cause insufficient delivery of

healthcare services. It must be remembered that "humanistic" progress of medicine is only possible through an approach that takes care of the entire human. The individual's health information is confidential to anyone except those directly connected with the health relationship. Perhaps, this is one the most common points where problems occur in digital health applications and future studies should focus on how to protect the privacy of patients, besides the benefits of digital health applications in the healthcare sector.

Finally, healthcare managers should try to find the best IT solutions for their organizations for better and efficient management. They should continually add new IT applications and services to keep patient and staff attention, build organizational value, and increase healthcare service quality while diminishing required service time and errors. Once patients and employees are familiar with the general idea of digitalized healthcare services, organizations can begin offering more complex, high-value services. Surely, these services must continue while maintaining patient safety. Trusts also need to be mindful of how they will manage security and access to clinical information while providing transparency and consistency and minimizing clinical and information management risk. In summary, the healthcare industry and healthcare managers must adapt and implement health management information systems for any administrative and medical process. We recommend a slogan for the new healthcare age: "solutions with digital at the core of health".

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Historical Development of Games and Digital Games as a Product of the Culture Industry[1]

Games do not stimulate the mind
but children grow wiser by playing them.
Mevlana

Man reveals himself by the games
he plays.
Christian G. Salzmann

Introduction

Although it is unknown how and in what circumstances games came into being, they are considered a part of the cultural existence of man. It is possible to trace the first instances on record of games, which have made a great contribution to the development of social culture, to around 3000 BC. Physical and mental activity, and even violence-based games, are commonly seen throughout history, sometimes in a political context and sometimes as part of the cultural life of the community. Used for the consolidation of power in Europe, games were seen as a mental and physical (sporting) event in Asian societies. While games requiring strength are seen as part of the struggle for existence against slavery, sports competitions are perceived as an indication of the struggle of humans with nature. However, community life began to experience dramatic changes with the onset of industrialization. Inventions that have made life easier have affected human behavior, which led to changes in everyday practices. While the human-nature relationship was in the foreground until recently, modernization constructed a human-screen relationship. The masses therefore have tended to move from real spaces toward virtual spaces. In this sense, it is possible to say that the games industry has increased in parallel with developments in computer technology. Companies which were active in the 19th century producing game equipment tended to digitalize in the

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1960s. From this date, games became part of mass production on digital platforms and from the millennium, became a huge industry serving over a billion people.

The purpose of this study is to highlight significant developments in games in the digital age and shed light on the transformation of games into a product of the culture industry, focusing on major milestones in the historical development of games. Accordingly, the primary focus will be on the place of games in cultural life, its features, and its functions. Later, games as a leisure activity, changes in attitude towards games throughout history, and finally, the dominance of the digital industry over games and the future of digital games will be examined.

The Concept of Games

The "game" is a concept older than the history of mankind. In the first stages of social organization, games are known to have existed even in times when cultural values and civilization had not yet been produced. Therefore, the idea that the game is older than culture actually refers to a time much earlier than humankind since games are not only an activity peculiar to humans, but also the kind of action produced by creatures other than humans. To a certain extent, animals play games, just like people. Since games are evaluated not only by their physical but also their mental and spiritual dimensions, it is difficult to examine animal games in a systematic manner. In order to reveal the nature of games, scientists perform observations and examinations on different ages and genders in humans and animals. These studies particularly focus on mammal and bird species (Bateson & Martin, 2013: 16). When these studies are considered as a whole, whether or not all animal species exhibit human-like game behavior is still debated. The emergence of game-like actions in animals, the forms of action and results, makes it difficult to understand whether this behavior is evoked by game-like motives or by other factors. But a common point in these actions is that animals are enjoying themselves. This aspect also applies to humans. As a result, the main feature of games as a historical form of activity is that they are fun.

While people and animals that enjoy themselves and experience pleasure is something that is understandable at first, it is difficult to explain the nature of what exactly constitutes pleasure and the concrete revelation of pleasure. One known fact is that games require players to be in good condition, because to actually be able to play a game, to some extent, is an indication of mental, psychological, or physical fitness. Experiments and observations made on both human beings and animals (Bateson & Martin, 2013: 19) showed that subjects exposed to hunger, stress, and physical challenges had difficulty playing or continuing with the actions of the game and some completely gave up playing. In cases of anxiety, priorities

need to change both in humans and animals, and actions need to be reconstructed until their condition returns to normal. In this process, priorities show themselves as measures to eliminate the problem. It only becomes possible to play the game when the stress and anxiety are eliminated. A proverb frequently used in Turkish culture that "the hungry bear doesn't dance" best describes this situation.

Seemingly, although a game is perceived as a set of physical and mental activities, different forms of behavior invalidate this perception. Hence, a game carries a meaning beyond mere physical and/or mental activity (Huizinga, 1980: 1). The difficulty in determining the basic components and borders in the conceptualization of games has motivated researchers to make a conceptualization. Some examples of conceptualization efforts are given below.

Despite the fact that it is stated that play is an element of culture, Huizinga (1980: 47) suggests in his work "Homo Ludens", which has become a classic, that in taking into account behaviors such as competitions, exhibitions, amusements, and challenges, play precedes culture, rather than originating from it. While presenting the nature and significance of play, Huizinga (1980: 1–27) pointed out the following points: above all, play is an activity that reflects independence and freedom and involves the animal kingdom as well as humanity. For this reason, play is voluntary. However, play is by no means an idle activity; in fact, it has rules and these rules determine what will have the force of law in the provisional world drawn by the game. Therefore, play has a unique structure standing outside of "ordinary" and actual life. This is because the play is distinct from the "ordinary" practices and it is fictional.

Bateson & Martin (2013: 11, 12, 27) define play by highlighting the five essential features of play. These features are intrinsic motivation, protected context, novel combinations, repetition, and sensitivity to conditions. According to them, intrinsic motivation acts as a goal in the play. The main objective of play is to have fun. Due to this main objective, play "appears to have no immediate practical goal or benefit". Thus, "play is the antithesis of 'work' or 'serious' behavior". The play is preserved from the normal consequences of serious behavior to some extent. From the perspective of the people, play can be said to cause temporary changes in social roles. This is because play generates novelty. Likewise, actions and thoughts are carried out repeatedly. Finally, play is "sensitive to prevailing conditions" and so it is an indicator of well-being.

According to Suits (1978: 34), "to play a game is to engage in activity directed toward bringing about a specific state of affairs, using only means permitted by specific rules, where the means permitted by the rules are more limited in scope than they would be in the absence of the rules, and where the sole reason for accepting such limitation is to make possible such activity". However, as long and complicated

that this definition by Suits may seem, its essence reveals the purpose and means of playing a game. According to Suits, games are conscious and goal-directed activities. Rules have a crucial role in the systematization of these activities. According to him, the last and most important element of game is the nature-attitude of the player. The nature-attitude of the player is a set of behaviors that determine the fate of playing the game. The result of games with a specific purpose is mostly determined by the methods followed by players. Consequently, one needs to know the player and the player's features in order to understand the game. For example, children's games are clearly quite different from those of older age groups in terms of their features. On the other hand, games based on physical strength and hand skills have a clearer distinction compared to intellectual-intensive games.

Caillois (2006: 128) conceptualized game based on its features. According to him, an activity must bear the following six features to be considered a game: Play is free. That is to say, it is not obligatory; it would lose all its attractive quality if it were obligatory. Here, freedom should not be considered as the opposite of captivity. What is meant is not the freedom of the person in social life, but his or her ability to act freely in the game. The game is referred to as separate-isolated. It is circumscribed within the boundaries of space and time. The game involves uncertainty; it is not possible to predict the outcome beforehand. The game is unproductive. No actual production takes place except for the exchange among players. The game is governed by rules. There are conventions in the game apart from general ordinary rules. The game is make-believe. Here, a second reality is created against real life.

Taking into account the endeavors of four prominent researchers to define the game, it is understood that the game is within the field of interest of many disciplines, especially narratology and ludology. As far as these definitions are concerned, it is obvious that the game possesses various forms and contents. This variety is taken as reference in the categorization of the game as well. For instance, Bateson and Martin (2013: 13) refer to nine categories in which play can manifest itself. These are solitary, social, pretend, imaginary, symbolic, socio-dramatic, constructional, rough-and-tumble, or manipulative plays. The nature of the player mentioned by Suits is manifested as demographic features and directly affects the result of the game.

Apart from the efforts of definition, studies regarding the functions of game also exist in game literature. The idea that game provides many gains for humans or animals from infancy is based on two main approaches. The first one tries to explain the relationship between game and mental processes, while the second one focuses on the physical dimension. Preferring to lay emphasis on the mental

dimension, Huizinga (1980: 46) argues that as it is concretely definable and objectively recognizable, play emerged in the form of culture. In the early phases, the influence of play is evident, whereas culture started to become the determiner later on. Thus, the play element of actions is hidden by cultural phenomena in time. Examining the relationship between human activities and cultural processes, anthropologist Edward Hall explained these activities using 10 primary message systems. Play has an important place in human life as one of the primary message systems. This is because play has a determinant role in human relations from childhood. Therefore, one can make inferences on the communication behaviors of the members of various cultures by examining the general features of play in those cultures. For example, while play takes form on the basis of rivalry and competition in Western culture, it is seen as a tool of adaptation to real life in Eastern culture. In brief, play is a reflection of individualism in some societies, whereas it is a reflection of collectivity in other societies (Kartarı, 2006: 52–53). The prominent aspect in terms of the physical functions of play is that play contributes to the development of physical skills. For instance, play is thought to assist in the development of the muscular system since certain types of play require movement. The gains acquired by play reveal themselves in activities such as reproduction, escape, and fighting later in life (Bateson & Martin, 2013: 30). The individual shaped with play from the moment he or she was born will feel the reflections of these behaviors on his or her social life in one way or another.

When all these definitions, as well as the operational functions of games, are considered together, games can be described as an activity of idleness. However, it is clear that this idleness also has an effect on the individual's social role. Accordingly, the game is the conversion of an individual's free time into an activity. The question at this point is what free time is and how this is converted into an activity.

Games as a Leisure Time Activity

Even if games are mostly considered as an activity peculiar to childhood, in fact, they are part of the daily routine of people of all ages. These everyday habits show themselves in the way that people organize their lives. The game is an activity developed in parallel with obligations incorporated in the concept of needs, at the same time occupying a place in people's lives as a supplementary part of their obligations. An indication of this is that since ancient times, games have been used to utilize a portion of the time when people did not work.

In ancient times, the hours in which recreational activities took place were called otium (leisure). Otium was described as the effective utilization of hours remaining outside of working time, and recreation and leisure helped eliminate the fatigue

induced by official time. While trade and a working life were viewed as an obligation in the Roman period, this corresponded to the time zone where otium-type games and entertainment were held. In this period, in otium for ludus (recreational) purposes, violent theatrical events attended by thousands of people, such as gladiatorial combat, were organized and these activities were in high demand by the Roman public. In the Middle Ages, by contrast, otium acquired a bad reputation. Since it encouraged idleness, otium was regarded as the source of bad habits, and was preached as being evil and the cause of misery by clergymen (Rizzi, 2014: 327). For this reason, in the Middle Ages, the church was especially involved in youth entertainment; they considered idleness equal to not abiding by religious edicts.

In the industrial era, leisure time was used to describe the time period other than labor time, as in Rome. This definition continues to be a core concept, despite changes and developments occurring due to technology. Accordingly, despite the transformation of leisure time in our own day, it was used with traces of the Middle Ages and a new identity in the industrial era. From a sociological perspective, leisure (free) time involves enjoyable activities and activities to please oneself instead of the routine activities experienced during working time. These activities may comprise productive or non-productive activities. Productive activities may be described as hobbies and technical pursuits. Even if perceived as a leisure activity, the most obvious example of a leisure activity is playing a game (Marshall, 2005: 682). Games specific to the industrial era are played according to certain rules, usually determined by the culture industry. Competitions and sporting events cannot be seen only as leisure-time entertainment. Because of their purpose, rules, and, most importantly, increased competition and market conditions, games have become a new kind of economic activity.

In the Marxist perspective, leisure time is part of the capitalist reproduction process. Movies, jazz, pop music, television, radio, and magazines, which are considered to allow people to have a good time, are tools that make up the entertainment industry. In fact, the culture industry represents a new stage in the development of the global market. Although it is thought that the masses freely participate in activities in their non-working time, in fact, according to the Marxist view, the masses are merely being kept in the system by subliminal messages and guidance. In other words, popular culture products not only entertain individuals but also ensure the continuity of the system (Rojek, 1995: 17). According to this perspective, leisure time is a living space required only for the reproduction of work (Aytaç, 2005: 7). Thus, the workforce ensures the continuation of the status quo and will take its place in the economy as a reserve army of labor, always ready to produce via leisure time activities.

In the industrial society, the production models set by global capital aim to use free time by producing the highest possible profit. Developing accordingly, digital capitalism keeps the masses under control by allowing the production and distribution of content through transnational capital centers. (Digital) games designed as free time activities asymmetrically reconstruct producer and consumer relations. Technological and cultural production that feeds the game industry nowadays is always in pursuit of new markets, customers, and target audiences. For this reason, consumer society has developed thanks to mass production after the two world wars of the 20th century. Designed needs and masses ready for consumption desired by the capitalist system constitute the basis of this social structure. Thus, the system can always renew itself (Baudrillard, 2008: 83). Just as in media products, the situation is not so different in the global game market. Game developers articulated by transnational capital have integrated the concept of traditional games with the global system. The production and marketing of games is performed not only by targeting children, but also by adult individuals (Çavuş et al., 2015: 2). Being just one type of leisure time activity, games have become part of the production concept of digital capitalism. For this reason, determining how traditional games turned into a product of the culture industry will make it easier to understand the nature of games.

The Historical Development of Games

From the earliest times, communities made games part of their lives according to their cultural characteristics. For example, the Romans demonstrated their fighting spirit with gladiatorial games, despite their goriness, all throughout the empire's long glory years. During the first and second centuries AD, encompassing every city in the country, people from all social classes filled the arenas for entertainment, and warriors, the majority of them slaves and criminals, were forced into deadly combat (Meijer, 2008: 21). In this period, the brutality of the games in Rome encompassed all aspects of Roman life. Aside from Greek theatre and the Olympic Games, former battles and human sacrifice became part of everyday life as a game and entertainment tool, and the arena and gladiators became popular. The public became regular spectators of this amusement (!) presented to them in a short time and they converted arenas into Rome's national playgrounds. The unemployed went to the arena to pass time, to make up for the misery they lived in, to share the same environment as the rich and noble, and perhaps to earn a little money (www.dunyatarihi.com). The Roman Empire gave so much importance to games of blood and violence that public officials called Aedilis were appointed to organize the games. The Aedilis were responsible for organizing the public as

well as other aspects and urban services (Eutropius, 2007: 282). With the games, emperors had the opportunity to establish unlimited sovereignty over man and animals, giving the public an image of unity at official events. Thus, from ancient times, games had the function of allowing for the consolidation of power in the public sphere (Meijer, 2008: 21).

Besides the violence-themed games in Greek cities, there were also various children's games enriched with music, dance, and songs. These children's games were mostly organized in the form of festivals. Through festivals, the urban nobility had the opportunity to present their children's skills, the ones that had a good education, to other sections of society. On the other hand, hints of competition between social classes can be found at festivals held for different purposes. At such festivals, the rich and the poor, coming together from every social strata of society regardless of status, fearlessly participated in competitions, and in the process, lost money, suffered, and injured each other. Just as in Rome, even in Greek cities, intense violence manifested itself in games (Çavuş et al., 2015: 7).

From the early days of human history, games were seen as being closely related to entertainment, violence, and sports. This idea underwent a change in the Middle Ages. With the increasing diffusion and influence of Christianity in Europe, attempts were made for people's leisure time to be free of "useless" activities. In this period, even if young people were forced to be suspended from school plays, circuses that were thought to be dangerous, the public entertainment continued. Besides shows reminiscent of the resplendent events of the Roman Empire, new types of mind games brought from the East (polo, etc.) became widespread in the Byzantine period (Rizzi, 2014: 328). In Europe after the Roman Empire, entertainment gained a new look when blended with power struggles. Games that had evolved under the Roman Empire were a hallmark of these centuries. For example, duels displaying pain and pleasure were combined and public executions were used as a tool of violence and power consolidation (Meijer, 2008: 16). In Europe under Barbarian rule, a wide range of games became part of everyday life from board games to musical and poetic entertainments and even dice games (Rizzi, 2014: 331). In this period, weapons drills, weight lifting, shows of strength, and suchlike were constructed in the form of a game.

It is possible to trace the origin of Asiatic musical plays for entertainment, which seem very far from the violence and brutality-based game understanding of Europe, to Sumeria and even Ancient Egypt. It is understood from drawings and hieroglyphs found in excavations, that in 3100 BC, the Egyptians played a game

called note[2]. About 100 years later, the first version of backgammon was found in Persian civilization (Sezen & Sezen, 2011: 251). In the Ur dynasty period from the Sumer generation, game-like items were found from battles of the bards to the first literary texts (Kramer, 2002: 168). Even if the evaluation of literary texts and the battle of the bards from that period might sound dubious as a game, it has been suggested that games that were played had an important role in the structure of Sumerian society. The foresight that saw the value of sporting activities, as well as literature and music, was based on the king. For example, the King of Ur Şulgi, regarded as one of the most prominent rulers of the ancient world, was interested in sports in addition to his interest in literature and music, and he was even a long-distance running champion (Kramer, 2002: 340), all of which are reflected in texts.

Another ancient oriental culture is China. As in other contemporary oriental civilizations, in China, free poetry and drama were leisure time activities demanded by the public as well as administrators. The Chinese, who were affected by Northern and Southern cultures, mainly Turks, presented poetry and stage plays with dancing as a game form. For example, sword and sacrifice games, bull fighting, wrestling, and military stage plays occupied an important place in Chinese games and entertainment as a means of acculturation (Eberhard, 2007: 221). When Turkish culture of that period is examined, the game of "tepük", mentioned in the famous work of Mahmud of Kashgari called the Diwan ul Lughat al-Turk, is noteworthy. Although debatable, it has been claimed that the game of tepük was one of the first examples of modern football. Tepük, which was known in various versions such as tepküç, langa, çipolik, and para in different Turkish states, is understood by the preparation of materials to have been systematic in form.

Games in the Industrial Age

With developing technology, community life also experiences major changes in politics and the economy. As long as technology penetrates to the center of life, dramatic breaks occur in cultural life. This period can be expressed as follows in terms of showing the changing dimensions of the human-environment relationship (Çavuş et al., 2015: 10).

Industrial progress has brought a new dimension to the human-nature relationship. Thanks to scientific advances, mankind has declared sovereignty in the face of nature and has built cities, skyscrapers, and open spaces. With advancing

2 "Note" is the oldest known board game in history. This 5,000-year-old game was invented in Egypt. Examples of note have been found in the tomb of the pharaoh and its workers (www.astralcastle.com).

civilization and the consequent cultural heritage, people have adopted a new relationship with the environment. Whatever is said in the name of the millennium (space, knowledge, or information), the human-screen relationship has existed in a different size since the second half of the 20th century. Humankind first overcame nature, then became trapped in the spaces they created. On the one hand, they have narrowed their living space. On the other hand, they have created virtual worlds through digital technology. These worlds promise an assumed eternity, infinity in parallel with the loneliness of modern man.

Technology used in daily life reveals the point reached in the human-screen relationship. Perhaps the most important of these technologies is the computer, being used after the second half of the 20th century immediately after the radio and television experience. Fundamentally, computer and Internet technology was first developed in accordance with military needs, then used for corporate purposes, followed by individuals, and finally for commercial purposes. The most popular tool from the computer's commercial period was digital games. Digital development, dating from the first computer games to today's games on smartphones, is the product of inventions that are connected with each other. Indeed, digital games did not emerge suddenly and spontaneously. Today, some of the world's most respected manufacturers of digital games (Nintendo[3], Sony, etc.) are companies that were producing traditional games and entertainment tools in previous centuries (Kirriemiur, 2006: 22). This demonstrates that the ancestors of digital games had their origin in cultural activities.

What the first digital game was, how it emerged, and who played it is still debated. The types, emergence, and usage pattern of examples of the first digital games are the underlying factors in these debates. For instance, Alexander Douglas, who was studying human-computer interaction at Cambridge University, designed the Personal Computer (PC) version of the Tic-Tac-Toe game in 1952. This is considered the first digital game by some (Sezen & Sezen, 2011: 256). On the other hand, in 1958, William Higginbotham invented tennis simulation in the laboratory. Another group of researchers argued that this acclaimed simulation game, which spread rapidly in a short time, needs to be considered as the first computer game. However, today, when the first digital game comes to mind, people consider "Space War", developed by Steve Russell in 1962, as the real precursor

3 Nintendo was established in Japan in 1889 as Nintendo Koppai. Producing playing cards for many years, the company took a step into the electronic gaming industry in 1974. Starting to produce gaming platforms under its own name, the company takes a privileged place in the digital game industry, particularly after the year 2000 (Sezen & Sezen, 2011: 252).

(Kirriemiur, 2006: 22). Like the tennis simulation, the Space War game also made a great impact. The game was developed with additions made in a short time and was a prime example of the digital game culture of that period with the most common use. This early success of digital games can be evaluated according to their structural features and the level of attention they received.

In the initial stages of the development of digital games, game manufacturers like Digital Equipment contributed to the process with a limited range of products, according to scholars studying computers and companies related to this field. Later, Konami was established, which occupied a considerable place in the digital game world of this period. While the 1970s were the trial stage of the console and game machines of companies having an important place in the sector such as Atari, Exidy, and Magnavox, the 1980s were years when the console was dominant, literally the digital game for the world. Traditional game tools manufacturers who had developed a close relationship with computer technologies in the 1950s began to compete with each other regarding detached game console production in the 1980s. On the one hand, private and commercial use of the computer was becoming more popular; on the other hand, the utilization rates of games in independent devices such as televisions and consoles experienced significant increases. In addition to being a game, the Commodore 64 with major computer features became famous in this period. Sold at astronomical prices in 1982, the price of the Commodore 64 fell rapidly soon after and it went down in history as the best-selling computer-gaming console up to then (Yılmaz & Çağıltay, 2005: 2).

In the 1990s, Atari, SEGA, and Nintendo were the most important companies in the digital gaming market, which began to evolve into an industry. In those years, the realization of global sales, publishing and distribution processes, as well as production (game development), were components that sustained its dynamic nature (Binark & Bayraktutan-Sütçü, 2008: 68). Transportation of the game developed with budgets in excess of millions of dollars as the target audience rose. The first step of the tripartite structure is game development. For this reason, companies aimed to bring themes/stories, graphics, and the playing of games to their highest level and the manufacturing process was carried out by professional teams. Finally, in 1992, a war game called Wolfenstein, developed by id Software, made a breakthrough in the field. The main feature of the game was it having a new type of control mechanism, called First Person Shooter (FPS). Enjoying a huge following today, FSP type games enable the player to control the world which they occupy in the way they want. FSP not only brought a new dimension to the relationship between games and players, but also became a concrete indicator of freedom and immensity promised by the digital world by

raising the player's degree of engagement to the highest level. What makes digital games different from movies is that they allow the target group (players, users) to be active participants.

Although multiple sensory organs are active in movie-watching, this mass media tool is hot and due to the nature of the vehicle, participation is low[4]. As for computer games, although the process was already fully under control, operation is now much more complex. Furthermore, digital games offer an atmosphere which appears to be a twice the size and gives a relative sense of activeness to the player.

The millennium is the age of the digital game industry giants doing business on almost every platform. Since the Xbox developed by Microsoft and the PlayStation[5] developed by Sony secured their place as the original platforms, there has been a record increase in the production of computer-based games. What makes PlayStation and Xbox so special is that game developers were in a situation to produce original games for these platforms. As Grand Theft Auto (GTA), FIFA (football game), Gran Turismo, and many game series began to provide support for these platforms, production increased with each passing day (Kirriemiur, 2006: 30). While these developments were being experienced in the digital games industry, a new technology entered the life of society, offering a combination of the most important inventions of the digital era. The name of this technology is the smartphone. Previously, conventional phones evolved over time towards wireless technology. Soon after, mobile phones articulated with computer technology became the second and then third generation multifunction device. The most important feature of smartphones is that they are equipped with hardware and software that is able to process data like a computer. Thanks to experience gained working with computers, this technology was soon transferred to smartphones.

According to a report published in 2016, the digital game industry has reached a volume of 100 billion USD worldwide. If growth continues at this rate, the digital game market is estimated to reach 118 billion dollars in size within three years. Today, the volume of smartphone games corresponds to 37 percent of digital games. This means a sector of approximately 37 billion dollars. According to the report,

4 McLuhan divided means of communication into two types: cold and hot. Hot tools appeal to a single sense and a low level of participation among the audience. For example, radio, newspapers, and photos are hot tools. Cold tools give little to the audience but are considerably added to by the audience. The level of participation by the audience in a cold tool is high. For example, looking at television as a cold tool, the audiences must complete the message using high participation (Erdoğan & Alemdar, 2005: 155).

5 Despite the launch of PlayStation in 1994, it experienced its golden age with the millennium.

smartphone games have overtaken the share of computer and console games for the first time (www.newzoo.com). These indicators point to the future of digital games in mobile games. Furthermore, it could be argued that platforms such as personal computers, consoles, and tablets will experience stagnation and decline in later years and that smartphone games will show rapid growth. Also, the latest statistics show that the digital game industry has now reached proportions to enable it to compete with the movie industry. However, this situation has brought new controversies. With the spread of the Internet, the harmful effects of technology, the misuse of the Internet, virtual addiction, and cyber-bullying concepts have drawn the attention of researchers. These aspects will occupy center stage of the screen-human relations debate which future researchers will evaluate and discuss.

Virtual Reality and the Future of Digital Games

New media, which it is thought to provide relative activeness to the viewer in the production of the media content, represents a new dimension of the virtual world that is unlimited and allows for interaction at the highest level. New media discussed since the 1970s became the most important tool of transition from city-spaces to virtual-spaces with the millennium. For this reason, constituted by the reproduction of social reality by means of the computer, virtual spaces are considered to be simulated reality. In this sense, virtual reality is the restructuring of the real or a simulation of it (Tosun, 2013: 115). Individuals in virtual reality check computer-generated three-dimensional simulations through various devices. This actually represents a step forward in human-machine interaction. In machine-machine interaction, considered as the next stage of human-machine interaction, the existence of artificial intelligence machines expected to act independently of people has been emphasized.

Even though the virtual reality debate goes back to the 1980s, the results of this new technology indicate a point that digitalization has reached which has never been so exciting. Virtual reality has already become a more integral part of everyday life in the form of entertainment, creativity, or applications (Cawkell, 1993: 325). It is believed that virtual reality will lead to major changes in our personal life, business life, and professional life. In addition to this, it is believed that the educational and health effects of virtual reality will be seen in the not too distant future. Games are the most popular tool of entertainment and the creative fields of virtual reality. Therefore, virtual reality technology brings improvements in coordination with the game industry. Game developers and console manufacturers, directing their attention toward virtual reality applications, open the door to a world of interactivity offering the highest level of interaction for the audience.

Digital games have passed to a new level in parallel with the development of virtual reality technology. Benefitting from interface technology, body motion control has been engaged in playing digital games and has moved game-user interaction to higher levels than ever. The most important representatives of virtual reality applications in the present generation are Nintendo Wii, Microsoft Xbox, and Sony PlayStation. Nintendo Wii occupies a unique place in high-level intuitive player interaction. In 2006, the company started to produce tools that provide intuitive control, which has provided users with the opportunity to play any popular sports games (football, basketball, etc.) as if it was real thanks to its camera-based motion control feature. Following the success of Nintendo, Microsoft "Project's Natal" and Sony's "PlayStation Move" became partners in the competition driving intuitive motion tracking accessories to the market (Choi, Yang, & Yuen, 2012: 53). From smartphone manufacturers such as HTC, Apple, and Samsung, to companies developing Internet-based products and services, many technology manufacturers have accelerated their investment in this field. International companies aimed at proving their existence not only in the game sector, but also in the movie and advertising world have entered into product development and the search for partnerships.

Trials on digital technology continue with augmented reality[6], three dimensional (3D) sound and images, intuitive communication technologies, and "smart" technologies. While smartphones, smart televisions, smart watches, smart homes and smart clothes bring artificial intelligence to life in the millennium, the idea that "robots that can make their own decisions", fictionalized in movies, is one of the essential components of the digital game industry. Marked in the 1980s by the "Terminator" and "Robocop" movies, and then by "Artificial Intelligence", written and directed by Steven Spielberg in 2001, the subject is fictionalized readily through digital games. The death struggle of people fighting machines that reproduce their own is often presented in a dystopian style to the audience-player. These games push the limits of the imagination, creating an infrastructure of ideas that appear at first to be impossible.

Criticism

Games have had an undeniable place and importance in the thousands of years of cultural accumulation of humanity. The development of games throughout history

6 Augmented reality is combining electronic systems with the physical world (Mackay, 1998). A new physical environment is created by combining applications such as audio, video, and global positioning system (GPS) generated by computers and the real world.

cannot be considered independent from political, economic, technological, and other social processes. Shaped as a reflection of the individual's relationship with the environment and nature, the game has had a variety of functions, such as education, competition, physical and mental development, and especially entertainment. Used as a power device in ancient times, the game maintains the same function today of being part of the culture industry's changing format. While festivals, the Olympics, gladiator combats, and similar sporting events were performed for power control throughout history, games and entertainment tools serve a new kind of power under the control of transnational capital and industrial giants in the modern era. On the other hand, due to advances in computer technology, emerging digital games have also been considered as the premise of technological developments from the millennium onwards. The imagined science fiction universe in movies and games in the digital world are transformed a little more into reality with each new invention. Furthermore, the perceptions of traditional players in this process have changed, becoming technology-dependent and an extension of the digital industry.

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Digitalization and Law

Introduction

Law can be defined briefly as a set of rules governing the relationships between people. When it is considered from this point of view, it will be seen that law existed just before the emergence of government. With the emergence of government, rules of law entered into a different process in terms of their scope, sanctions they contain, and their source. As in this period, the effect of government on the creation and development of rules of law started to come into prominence. If it is especially looked at from the viewpoint of Continental Europe, well established codification works were performed once in about a 1,000 years and law was reshaped. It is seen that law was influenced by important social and political events during this development process. These can be defined as migrations, wars, and economic and technological developments. The effect of the industrial revolution also has an important place in development and change processes of law in the last two centuries. In this context, the freedom movement beginning with the French Revolution became influential in the field of public law, especially in the formation of constitutional, administrative, and tax laws. On the other hand, economic and technological effects of the industrial revolution became influential in the fields of commercial law, law of obligations, and labor law. Many concepts such as trademarks, patents, and intellectual property emerged, and new contract types started to be created. This led law to tend towards these areas.

One of the important features of the law is also to follow developments in society. In other words, phenomenon emerging in society is first regulated by the law. In this sense, there is no need for new regulations in resolution of emerging events and problems if old and established rules are enough. However, old regulations fall short, and the law creation mechanism becomes active and solves the problem by introducing a new regulation. If the law doesn't act quickly to solve this new problem, emerging problems grow and become more complicated. On the other hand, law's delay in finding solutions both makes it difficult to solve the problem and reduces the effect of the solution.

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A similar situation has arisen in the digitalization of the law. Fast communication processes beginning with the telegraph and telephone communications have gained a new aspect with the emergence of the computer since the 1950s.

After the satellite Sputnik I was launched by the Soviet Union in 1957, an institution established in the USA known as the Advanced Research Programs Agency (ARPA) initiated a study in 1962 in order to forward computer data to other computers by breaking them into pieces. In 1969, the institution known as ARPANET continued to work in the field of defense in 1970 and was known as DARPA. In 1990, this system was demilitarized by becoming widespread and was known as the Internet (Sözer, 2002: 8–10).

As a result of the fact that communication among computers acquired a new dimension with the widespread use of cable televisions and satellite broadcasting and the emergence of the Internet in the late 1970s, the information society emerged (Webster, 2014: 11). As Daniel Bell stated, there are information production and consumption processes at the heart of the post-industrial society and after that, the information society emerged accordingly (Bell, 1976: 46).

The information society, as a process in itself, can be divided into three periods. The period from the late 1970s to 1995 forms the basis of the information society. The period from 1995 to 2005 is the period when electronic mail and text communication among computers were intense. The period beginning from 2005 is the information superhighway period when smartphones and tablets were intense and wireless communication became widespread (Webster, 2014: 11–12). This triple separation accords with the definition of Toffler who separated history of mankind into three parts as follows: the agricultural society between the 8000s BC and the 1750s, the industrial society between the 1750s and the 1950s, and the information society since the second half of the 1950s (Toffler, 1981: 28–30). With similar logic, just a six-stage separation wave is performed also in terms of regulations in the field of information technology law. It is stated that the first wave comes in the form of crimes committed against the confidentiality of data. The second wave takes place as economic crimes, while the third wave takes place through the violation of copyrights, trademarks, and patents in the context of intellectual property law. These are followed by illegal contents such as pornography and ethnic discrimination with the fourth wave, digital evidence and procedure in terms of criminal justice acts with the fifth wave, and regulations for encrypted personal data and the preservation of them within the scope of privacy phenomena with the sixth wave (Smith, Grabosky & Urbas, 2004: 91–96). In the area of the information society in general, and in the area of information technology law in particular, the periods when human history lived in itself happen again.

As an inevitable result of these developments in society, the law has also been affected by the digitalization process. As this effect wasn't experienced in all of the fields of law at the same time, it was not at the same level. Therefore, the digitalization process of law should be examined separately in terms of each field of law.

Digitalization of Law

Terminology

The term 'digitalization of law' is not widely used in law. The area in which law is used together with the word 'digital' most frequently, is the digital signature. This, as described below, is limited to a very narrow area of law. The term 'electronic' is used rather than the term 'digital' in the field of law. In this sense, concepts such as electronic commerce (e-commerce), electronic signature (e-signature), e-bill of lading, e-bill, e-state, and e-democracy actually refer to the digitalization of law. Even the Law on Electronic Signature number 5070 introduced in 2004 in Turkey is called digital signature law although it regulates digital signature (Savaş, 2005: 276–277; Topaloğlu, 2005: 127).

Digitalization Process

The digitalization of law occurred in the form of the emergence of the information society and the transfer of legal processes and applications into the electronic environment in parallel with the development process. This process first began with the use of one-way and two-way electronic communication devices such as faxes, telefaxes, and television, and developed rapidly with the emergence and demilitarization of the Internet. Electronization occurred together with the Internet, which actually refers to digitalization (Savaş, 2005: 71 et al.).

Upon the emergence of the Internet, communication became both widespread and cheaper. As a result of processes and actions carried out through this new digital communication platform, some legal issues began to emerge and the digitalization process of law accelerated.

With the expansion of the communication and marketing network, electronic commerce began to spread rapidly and contract negotiations and then contracts began to be transferred into the electronic environment. In order to ensure that formal contracts were established in the electronic environment, the electronic signature emerged and countries, one by one, began to make legal arrangements for this purpose. Besides this, violations of rights in electronic media emerged and some crimes were carried to the electronic environment. Moreover, certain

types of crimes that can be only committed in the electronic environment were involved in criminal law under the name of cyber crimes.

As a result of the widespread use of electronic commerce, governments began to make arrangements to receive tax from transactions carried out electronically.

As a result of the widespread use of electronic commerce, consumers constituting the weak side of the contracts established in the electronic environment began to suffer from these and arrangements protecting consumers were brought to these contracts called distance contracts.

With the rise of digitalization, the private data of people began to be collected by both governments and private people or firms. This situation brought privacy and security facts to the agenda. Accordingly, it became obligatory to make regulations related to the storage, transfer, and security of the collected data.

While the digitalization process of law provides numerous benefits, it has also brought many drawbacks. Before examining digitalization in the fields of law, it will be useful to take a look at the benefits and drawbacks of the digitalization of law.

Benefits and Drawbacks of Digitalization of Law

Benefits of Digitalization of Law

It became easy to carry out legal transactions and actions upon the digitalization of law. Electronic commerce can be performed in any place to which communication can reach without any cost and time limit. By delivering digital products and executing some contracts over the Internet, the loss of time is prevented.

Numerous transactions are carried out on the Internet with the e-state project, preventing backlogs in government offices. As the number of transactions resulting from government bureaucracy decreased, the number of the structures established in order to overcome these bureaucratic processes decreased. In addition, stationery expenses decreased significantly with digitalization (Metin, 2012: 105–106). Previous transactions can be monitored due to electronic databases and mistakes are minimized.

The benefits of digitalization are felt in the area of rights and freedoms. The petition right, which is one of the most important elements of the social state principle, can be used more widely and effectively (Zengin, 2013: 283). E-democracy activities such as e-elections and e-referendums are able to be performed more effectively due to the speed of information flow. In addition to this, it is controversial whether the performance of actions such as referendums and plebiscites over the Internet positively affect participation rates (Zengin, 2013: 283–284).

Within the scope of the National Judiciary Informatics System (UYAP) project during the digitalization process of law, cases could be opened over the Internet. Actions of courts and the prosecutor's office accelerated, and more efficient access to information and documents was provided. This means the faster and more accurate functioning of justice. The adjustment of parameters in data entry prevents incomplete data entry and minimizes the error rate (Gürsul & Bayrakdar, 2009: 27).

Drawbacks of Digitalization of Law

Digitalization in both private law and public law accompanies some drawbacks. Although measures are taken in order to eliminate drawbacks of the process, advances in information systems may accompany new drawbacks.

Many institutions under the e-state system such as hospitals, schools, municipalities, civil registry and tax offices, and UYAP may become disabled because of faults in digital infrastructure. The works which are done very fast when the system runs, are completely interrupted if the system does not run. It is impossible for works to continue manually because all data are kept in digital form.

One of the biggest drawbacks of the digitalization of law is system and data security problems (Çelen et al., 2011: 64). Cyber attacks carried out, especially against the e-state system, threaten the operation of the system and the security of data (Efendioğlu & Sezgin, 2007: 221). Besides this, security holes may occur because of software bugs and personnel mistakes. Failure in the widespread use of e-signatures also increases these security holes. In addition, it is seen that some private information related to individuals is presented in some queries even if it is not requested. By combining these data with other data in e-state applications, it may possible to reach more confidential data (Efendioğlu & Sezgin, 2007: 230).

Anonymity increases together with digitalization and there are some problems in revealing who carried out some of the operations and actions. With the establishment of the digital global world, borders were removed and it became difficult to fight against crime and criminals. Actions and operations that are unlawful in some countries may be considered lawful in other countries because of legislation differences of countries, which causes a problem. With copyright infringements, violations of personality rights were moved across borders, cross-border attacks against banks and other institutions increased, and criminals started to continue their activities by going to countries where legislations were appropriate. As a result of this, it became difficult to fight against crime and criminals.

Concrete Digitalization Applications in the Subfields of Law

The effects and outlooks of the digitalization of law on subfields of law are not at the same level. While digitalization in some areas may happen earlier and more effectively, digitalization in some areas may occur limitedly and later. This situation occurs because of differences between subfields of law arising from law's processes of formation and development. Also, reasons such as economic and cultural infrastructures of countries, societies' habits, level of development, and level of education affect the process of digitalization.

Digitization of the law is analyzed under two main titles in accordance with the approach to analysis and implementation of law existing in Continental European countries and Turkey in two main sections, public law and private law. However, it is not same in the Anglo-Saxon legal system.

Digitalization in the Field of Public Law

Constitutional Law

The digitalization of law emerges mostly in the form of e-democracy applications in the field of constitutional law. Although there are many definitions of it, in the simplest term, e-democracy can be defined as the use of electronic connections in order to ensure the participation of citizens in the public decision-making process (Maraş, 2011: 130–133).

As this may be one-way information sharing made by the government for the knowledge of citizens, this may also occur as two-way information sharing in the form of elections and conducting another vote (Zengin, 2013: 274).

E-democracy applications provide opportunities for the referendum, voting, or online discussions. Accordingly, pluralism also takes place at an advanced level. This is because democracy is more than the representation of the majority. According to this, the presence of pluralism in social and political areas and the media is important in this regard. This representation approach pointing out the participation of social organizations refers to a mixture of direct and representative democracies (Zengin, 2013: 275–276).

E-democracy indicates processes and structures consisting of all types of electronic communication between the government and citizens such as information, voting, and discussions, not only together with speed and scope in reaching information provided by the government in connection with Internet access, but also by means of ensuring the participation of citizens in the government's policy making process (Maraş, 2011: 131).

In the United States of America (USA) where competitive democracy is implemented and the public broadcasting system is not available, digital media is considered significant as an area in which communication between representatives and voters is enabled. Despite this, digital democracy is discussed and supported in England in terms of the centralization of the political system, the establishment of more independent regional parliaments, and in improving services offered by the administration. However, Germany remains more distant to this issue (Zengin, 2013: 276–279).

As for Turkey, e-democracy is limited to the digitalization of services offered to citizens by the government, which occur mostly as one-way communication. It can be said that digitalization is not enough in areas such as elections, consultations, and participation.

The digitalization of elections, voting, and other democratic activities does not increase participation in these practices contrary to popular belief. Security problems experienced besides this arise as a separate problem. The complete digitalization of the system will cause the prevention of political participation rights of people to whom the Internet and other information and communication technologies do not reach because of infrastructure or those who do not (cannot) use this system.

Criminal Law

In parallel with the adventure historical development process of law, the first concrete legal events related to digitalization and arrangements that were made accordingly took place in the field of criminal law. In this sense, criminal law is one of the areas where the first concrete examples of the digitalization of law occurred. As these examples may occur in the form of the transfer of some crimes to digital media, these also arise in the form of new types of crimes that may occur in this area, specifically to the structure and operation of digital media. The prerequisite for the punishment of unlawful acts occurring in digital media is the principle of legality. This principle means defining an action as a crime with a law in order to call it a crime. In terms of digitalization, if crimes that are committed on a standard basis are committed in the digital environment, these are regulated as aggravating circumstances and new types of law emerging only specific to digital media are considered as cyber crimes and new arrangements are made specifically for these.

The first of the crimes which are expressed as pure cyber crimes that emerged together with digitalization is unlawfully logging into an information system and staying there. The unauthorized access to an information system is considered

as a crime in many countries such as Australia, Belgium, Chile, China, France, Switzerland, Britain, Ireland, and the USA. However, regulations in Turkish law do not consider unauthorized access to an information system as a crime by itself, as they also require the user to stay there for a while (Taşkın, 2008: 21–22).

Apart from this crime, actions such as preventing and disturbing the operation of the information system, deleting data, or inserting data are also considered crimes. For example, as the process of breaking the password of someone's e-mail account and logging into it and staying there for a while is a crime, actions such as hacking someone's Facebook or Twitter account, sharing posts in there, or deleting shares also constitute a crime in this context. The abuse of others' credit cards and debit cards by hijacking them is also regulated as a cyber crime.

Other than these crimes that are considered as pure cyber crimes, some other crimes can be committed in the digital environment. For example, one of them is to violate the confidentiality of communication between people. Recording other people's conversations with mobile phones that are used as the audio recorder is a crime; likewise, disclosing these conversations is also a crime. If this disclosing action is performed via the press, the punishment is increased. For example, the spread of conversation contents that are exactly as recorded or similar to what is recorded without permission in social media platforms such as Youtube or Facebook is considered as a cyber crime. Saving other people's data unlawfully or saving people's data related to their details such as religion, ethnicity, sex life, or health as personal data are considered as a crime (Taşkın, 2008: 96–97).

Child pornography is another crime which is followed by international agreements and became widespread with digitalization (Taylor & Quayle, 2003: 28 et al.). The nature of child pornography has also changed since the mid-1990s. Together with the Internet, there has been an increase in actions of reaching, collecting, and spreading child pornography images. (Taylor, Quayle, 2003: 1 et al.). In the first article of the Convention on the Rights of the Child adopted by the General Assembly of the United Nations in 1989, the child is defined in accordance with the law applicable to the child pursuant to this convention as follows: each human is deemed a minor until they are eighteen years old except in instances where they reach the lawful age earlier. The same definition is adopted with this regulation in Article 6/b of Turkish Criminal Law: "Minor means any person who has not attained the age of eighteen. In Article 226 of Turkish Criminal Law arranged under the title of impudent acts, severe sanctions are imposed for child pornography crimes."

Another image of digitalization in criminal law appears in criminal justice law. This area, which is also referred to as computer forensics, means the process of

collecting digital evidence related to committed crimes. How search, copy, and seizure operations will be performed in computers, computer programs, and logs is arranged in Article 134 of the Turkish Code of Criminal Procedure search. The procedure for monitoring communications made through telecommunications and the types of crimes that make it possible to do this are arranged in Article 135. In this context, all communications traffic of a person, especially his/her digital communication paths such as on his/her mobile phone and e-mail can be monitored and if necessary, all digital devices that he/she uses can be seized and digital data in them can be examined by being copied (Keser & Berber, 2004: 67 et al.; Henkoğlu, 2011: 17 et al.).

After the Internet became widespread, the information society became almost a digital society. In the case of committing some crimes based on Internet access, concerning this digital society and written in law on the regulation of publications on the Internet and the suppression of crimes committed by means of such publications number 5651 as a list, Internet access to websites containing this content can be blocked in order to fight related crime (Taşkın, 2008: 147–148). Besides the blockage of Internet access with Law number 5651, the responsibilities of the digital world's unseen actors are brought to the agenda. If access providers who provide Internet access and infrastructure, hosting service providers who host digital data on the Internet, and content providers who create these digital data do not fulfill their obligations, they face criminal sanctions (See Taşkın, 2008: 149 et al.; Kaya, 2010: 127 et al.).

Administrative Law

One of the concepts emerging with digitalization is the concept of the e-state. Administrative organizations of the government started to electronically perform many operations. Administrative procedures and services were transferred to the electronic environment; moreover, some operations can only be performed in an electronic environment. The address www.turkiye.gov.tr is the government's window to the world. Many operations can be performed on this web page. The term e-state, which is used for expressing the services offered and not the technology used, can be defined as the system aiming to provide faster, cheaper, non-stop, and quality service for citizens and foreigners, even if to a certain degree, using Internet-based information systems (for other definitions, see Maraş, 2011: 122 et al.).

With e-state applications, people can reach governmental services and make applications and petitions through both web addresses with the extension gov.tr and the e-state portal www.turkiye.gov.tr.

KAYSİS is one of the main systems within the scope of the e-state project. KAYSİS, which is the abbreviation of the Electronic Public Information Management System, is a basic information system in which elements listed in public administration from the organizational structure of public institutions to services offered and from documents used in services to the information written in documents are defined electronically. Furthermore, it is a basic information system which will enable a-state (Smart State) to start to be used by integrating all e-state applications developed into a single center (https://www.kaysis.gov.tr/Kaysis_Hakkinda).

Along with the digitalization of administrative processes and services, it will be possible to open cases because of damages given by administration due to service defects while carrying out illegal operations and Internet services. The opening periods of these cases will begin as of the date of the wrongful act and the operation made in the electronic environment, and materials and evidence to be used in the cases will mostly consist of digital data. Especially, a log record (digital records of IP addresses that are used by users to log into the information system, log in and log out hours, and operations made in the system) that should be kept carefully will play an important role in many cases.

The E-signature, which is one of the most important applications used in the e-state, is discussed below under another title.

Tax Law

The relationship between digitalization and tax law emerges from two different angles. As discussed above, the first of these is to perform operations related to taxes such as a declaration, imposition, and even a payment. This application, which can be called electronic taxation, can be defined as a way of offering public service and an e-state application which enables taxes to be assessed and collected with the help of computers connected to the Internet, online communication tools, or other communication tools that don't require people to go to the tax office (Turan & Özgen, 2010: 135; Öz & Bozdoğan, 2012: 76). The issue is related to administrative law in one aspect and with the broader meaning, it is related to the e-state application. When it is considered from this point of view, if people who don't want to go to the tax office for tax treatment for which the declaration system is implemented and who abstain from transactions made in there carry out these operations in an electronic environment, and if they also pay their taxes using electronic payment methods such as credit cards, the informal economy will decrease and the amount of tax collected will increase (Öz & Bozdoğan, 2012: 76).

After the pilot scheme which was started in 1995 under the name Tax Office Full Automation Project (VEDOP) became successful, the VEDOP-I project was started in 1998 and with the help of this project, 80% of tax revenues collected and 85% of assessment and collection processes became traceable throughout Turkey (Öz & Bozdoğan, 2012: 77–78).

With the VEDOP-II project that started in 2004, practices such as increasing the number of Automated Tax Offices, receiving statements through the Internet, creating the Turkey Tax Office, control automation, data warehouse, and creating infrastructure that enabled the exchange of data with other institutions and organizations began to be carried out (Öz & Bozdoğan, 2012: 78). Due to this system, the workload of 14.000 employees will be reduced and about 55 million dollars in savings will be made each year.

In the third stage of the system, VEDOP-III, with which full automation is targeted, is a web-based system that operates online. Within the framework of VEDOP-III, which is Turkey's most comprehensive e-state project, tax office automation applications have been convered into a web-based structure by restructuring the income services of 448 tax offices and 585 revenue departments in Turkey. Thus, taxpayers get service not only from the tax office in which they are registered, but also from all tax offices (Öz & Bozdoğan, 2012: 79).

Another relationship between digitalization and tax law appears in the taxation of electronic commerce. Globalization of electronic commerce provides an opportunity to remove customs borders, making it easy for small and medium-sized companies, which can be established in a virtual environment rather than in a physical environment, to get into the global market. Accordingly, companies may deal with complex tax laws that they have never seen in other countries (Organ & Çavdar, 2012: 68; Coşkun, 2005: 154). The opportunity for remote access to a server hosting website used in electronic commerce brings forward many problems related to taxation. Electronic commerce, which is a system enabling sellers and buyers to hide their true identities and residence addresses, negatively affects the tax system which was prepared to assume that the identities and residence addresses of parties are completely known (Organ & Çavdar, 2012: 69). This uncertainty in the identity and residence address increased the informal economy by also causing uncertainty in taxation (Coşkun, 2005: 155).

On the one hand, uncertainty in the legal nature of digital products and services offered on the Internet, which is discussed in electronic contacts, causes problems in the characterization of contracts (sales-work-service-lease or license contract) mentioning these with one aspect. On the other hand, this situation accompanies problems about whether these products will be taxed as a good or

service (Organ & Çavdar, 2012: 70; Coşkun, 2005: 155). Some methods which are used in the taxation of incomes of companies, which are nonphysical but engage in electronic commerce all around the world such as depreciation, require the calculation of expenses and the deduction of taxes. Physical costs of nonphysical companies are much less than their virtual presence. One of the major problems is to determine how to deduct expenses spent on virtual presence from taxes and to determine how much will be deducted (Coşkun, 2005: 155).

Digitalization in the Field of Private Law

Law of Obligations and Commercial Law

The law of obligations and commercial law are two inseparable fields just like two peas in a pod. Many issues which look like they are about commercial law in general, are actually about the law of obligations in spite of their appearance. These two fields, which are nested in many respects, experience the digitalization process together. Digitalization which started as electronic commerce continued with electronic contracts and then the digital signature. Many issues such as copyright infringements, deceptive advertisings, and distance contracts were included and digitalization in both fields has continued. While (electronic) contracts executed through the Internet are included on the law of debt (loan), the domain name and design of such commercial websites are included in commercial law. Therefore, these two fields should be examined together in the digitalization process.

The law of obligations is among the major fields of private law in which digitalization occurs. Digitalization in the law of obligations started with the electronic contract and continued with a digital signature.

An electronic contract is a term used to define a contract established electronically. According to some authors, the term electronic contract means contracts that are established and executed in the digital environment (for discussions about this issue, see Savaş, 2005: 57 et al.).

With the widespread use of web-based electronic commerce, electronic contracts intensified to contracts established through websites. This means that people make a contract with digital acceptors designed in the form of websites. These applications caused a problem about whether the declaration made through the websites should be considered as a recommendation or an invitation to recommendation. Before the law of obligations number 6098, declarations made through websites were mostly considered as an invitation to recommendation (Altınışık, 2000: 43; Topaloğlu, 2005: 32). The consideration that these declarations were a recommendation and that they were defended by us as an opinion of

minority (Savaş, 2005: 181–182) was included in Article 8/II of the Turkish Code of Obligations number 6098.

The spread of electronic contracts executed on the web accompanied some problems in terms of parties. One of these problems is the protection of consumers against web-based contracts whose conditions are determined by sellers or providers that are economically strong. For this purpose, the European Union Directive on Distance Contracts was published in 1997. According to this, sellers or providers must inform the consumer about issues such as price and payment terms of goods or services which are sold or provided, delivery time and conditions, and a period during which the proposal remains valid (Möngü & Örkün, 2016: 86). England made a regulation for consumer protection according to this directive in 2000. In this regulation, the right to withdraw from the contract within seven days without any reason was given to the customer in addition to the information which should be presented in accordance with the directive.

In terms of Turkish law, the distance contracts concept entered into their legal system with Article 9/A which was added in 2003 with the amendment made in the Law on Protection of Consumers number 4077 dated 1995. The Regulation on Distance Contract, which was made in accordance with this law, entered into force in the same year. Contracts made through the Internet were considered under this regulation. In this regulation, the right to withdraw from the contract within seven days was given to the customer as it is in England. The new Law on the Protection of Consumers was made in 2013 with law number 6502. The old law was abolished and on the basis of this law, a new Regulation on Distance Contract was made and entered into force in 2015. With this regulation, the consumer's withdrawal period was extended to 14 days (Möngü & Örkün: 2016, 89). In this regulation, terms such as digital content, a permanent data register, and a remote communication tool were defined and these terms began to be applied to electronic contracts where one of the parties is a consumer.

The digital signature is the most important phase of digitalization in our law in general and specifically in the Law of Obligations (for detailed information, see Keser Berber, 2002: 119 et al.; Erturgut, 2004: 54 et al.). In Article 3/b of the Electronic Signature Law (EİK) number 5070 which came into force in 2004, the digital signature was defined as "Data in electronic form that are attached to other electronic data or linked logically to that electronic data and used for authentication". The electronic signature concept is a broader concept that contains a biometric signature (voice scan, iris scan, face scan, fingerprint, and handprint scan) and a smart card application besides the digital signature (Savaş, 2005: 271). Although the name of law number 5070 is the Electronic Signature Law, it discusses only

electronic signatures and leaves out other types of biometric signatures that have some relations with electronic signatures.

The digital signature is a system based on the cryptography technique with a pair of keys known as the public key and the private key. While the private key is used in order to create the signature in this system, the public key is used for verification (Erol, 2003: 58).

The digital signature is appended after the hash value of a datum is obtained with the private key and is summarized and then, this summary is encrypted by the electronic signature creation device called the private key which is kept by the signatory. Encryption in here aims to determine whether or not the text or digital data has been changed. It does not aim to make the text or digital data impossible to be read by others. Digitally signed data are sent together with the text which is sent to one person who is spoken to. That person decrypts the encrypted text which is sent to him by obtaining the public key which is the private key's pair. If the obtained hash value matches with the hash value of the data sent, it means that the data have been sent by the key holder and have not been changed by others (Erol, 2003: 57; Erturgut, 2004: 67–71).

The digital signature, which is applicable in law and has legal consequences, is a secure electronic signature. According to Article 4 of the Electronic Signature Law, the electronic signature: a) is exclusively assigned to the signature owner, b) is generated by the secure electronic signature creation device which is kept under the sole control of the signature owner, c) enables the identification of the signature owner based on the qualified electronic certificate, and d) enables detection as to whether the signed electronic data has or has not been altered subsequent to the signature being applied. According to Article 5 of the Electronic Signature Law, a secure electronic signature has the same legal effect to that of a handwritten signature.

Newly established companies that are subject to auditing pursuant to Article 397 of the Turkish Commercial Code (TTK) are obliged to create a website within three months following the date of their registration of incorporation at the relevant trade registry and to allocate a specific section of the website for the publication of announcements which the company is legally obliged to make. Failure to make these announcements on the website leads to the cancellation of relevant decisions. The section of the website allocated to information society services is open to public access. As it cannot be limited to provisions such as being relevant or taking advantage of it, the use of access rights cannot be bound to any condition. In the case of violation of this principle, anyone can open a case about the removal of the obstacle (Turkish Commercial Code, Article 1524). With

this arrangement, as required by the digital information society, everyone was allowed to reach these announcements and information whether or not they are interested in the company.

Another innovation about companies brought by digitalization is an opportunity to carry out general meetings in the electronic environment. Provided that it should be arranged in articles of incorporation or main contracts, equity companies' meetings of the board of directors and the board of managers should be carried out in an electronic environment. Likewise, it can also be carried out in a way that some members participate in a meeting through the electronic environment, while some of them appear physically (Turkish Commercial Code, Article 1527).

Because digital communication is widespread, cheap, and effective, undesired advertisings became one of the major problems of electronic commerce. These messages containing advertising are called spam, and can be sent as text messages or multimedia messages through GSM operators and can also be sent to e-mail addresses on the Internet. Messages sent by commercial firms to customers giving their contact addresses in order to be contacted in case of necessity in a disturbing manner and number necessitated legal arrangement in this field. With the Law on the Regulation of Electronic Commerce number 6563 which came into force in May 2015, commercial firms will be able to send messages to consumers after obtaining their prior approvals and they won't be able to send advertising messages if consumers don't give approval or remain silent. In the law, heavy sanctions are laid down for companies that do not comply with these obligations.

The frequency of advertising and promotional messages sent to consumers even if they do not want them annoys consumers and this situation is called cyber bullying (Aktürk & Talan, 2016: 153–154). With the proliferation of smart mobile devices, threats to these phones have increased. Over 500.000 mobile banking trojans and over 100.000 malwares for mobile devices were detected in 2015. The malware spreads via unlicensed programs downloaded to mobile devices or through Internet links attached to SMS or e-mails that are sent even if they aren't desired (Aktürk & Talan, 2016: 145–146). People are defrauded with messages sent with tempting titles such as "you won a gift" or "cheap holiday". Furthermore, bank accounts are emptied via the Internet and mobile banking by using usernames and passwords obtained by Trojans loaded in devices. In order to prevent such disappointing results, firms and especially banks, as well as consumers, should perform specific tasks (Savaş, 2011: 148 et al.).

One of the other negative consequences of undesired messages is a failure to receive official information and warnings in some messages that are deleted by

the recipient who thinks that it is advertising because he or she is tired of reading them. So, these messages do not achieve their goals.

Intellectual Property Law

Together with digitalization, works such as books, films, photographs, vinyl records, and cassettes can be kept and transmitted in the digital environment. At the same time, this allows works to be reproduced in the same quality as the original. Thus, digitalized works can be reproduced easily and cost-effectively and transmitted to the other side of the world. As a result of this, authors' financial rights such as copyright and distribution are violated (Başpınar & Kocabey, 2007: 38).

Ease and cheapness in production and communication of information in the digital information society have facilitated and also increased intellectual property rights. Digital works such as pictures, books, and movies can be easily reproduced and distributed over the Internet. It became difficult to fight against such violations because the digital world is also the world that has become global and intellectual property rights are local. Despite that, the Internet has libertarian character and a global nature and the struggle carried out just by law became insufficient (Başpınar & Kocabey, 2007: 39; For more information about this issue, see Erdoğan & Özcan, 2016: 27 et al.).

Law of Persons

Digitalization's relationship with the law of persons is about violations of personal rights in the Internet environment that occur frequently and easily. Illegal broadcast, slanders, and insults about real and legal persons may occur easily through both social media and other Internet platforms. Dealing especially with broadcasts via fake accounts is very difficult. Problems occur if IP numbers, which represents Internet users' identities, cannot always be reached or if an IP number which is reached belongs to a person who owns public access providers such as Internet cafes.

Law of Civil Procedure

One of the major problems that emerged in the law of civil procedure with digitalization is the evidential value of electronic documents. Article 199/I of the Code of Civil Procedure number 6100 and dated 2011 considered data in the electronic environment and similar data carriers as a document in addition to written or printed texts, bonds, drawings, plans, sketches, photographs, films, video, or audio records suitable for proving matters of the dispute. Because almost all stages of electronic commerce are performed in the digital environment, adoption of electronic

data as a document and their evidentiary values are inevitable. However, disputes arising in electronic commerce are not the only place where electronic evidence is needed. Because a lot of information is produced and stored in computers and similar electronic devices in both daily life and business life today, electronic evidence might be seen in all kinds of disputes. Especially in United States (US) law, the emergence of electronic evidence and their use in courts as an evidence for the first time occurred in this way (Göksu, 2011: 41). Electronic records of private sector companies and other institutions, any kind of electronic data established and stored within the scope of the e-state, city surveillance cameras, electronic banking transactions, and electronic payment methods are among the most commonly used electronic evidence (Göksu, 2011: 41 et al., 45 et al.).

In accordance with Article 205/II of the Code of Civil Procedure, electronic data created with a secure electronic signature according to the procedure were considered as having the force of bill.

Another innovation emerging in this field is electronic notification. With the UYAP project, the intention was to speed up proceedings and people were allowed to make notification electronically by adding Article 7/a to Notification Law. According to this regulation, notification can be made electronically to a person who gives a convenient electronic address for notification and wants them to be made to this address. Despite that, it is obligatory to make electronic notification to anonymous, limited, and commanding companies whose capitals are divided into shares. The law has decreed that notification made by electronic means will be deemed to be made at the end of the fifth day following the date on which it reaches the electronic address of the recipient. With this regulation, delays resulting from failures of digital infrastructure and difficulties in reaching the electronic environment were attempted to be prevented (Acar, 2016: 163).

In order to perform electronic notification, the Registered Electronic Mail (KEP) system was created and a regulation was issued for this purpose (See Acar, 2016: 164 et al.).

Inheritance Law

One of the effects of digitalization on private law started to emerge in the field of inheritance law regarding wills. A will is a unilateral legal action taken by a person in order to explain his or her testamentary decision without having to ask anyone (Antalya & Sağlam, 2015: 118). Due to this opportunity, a person can direct his or her assets under certain conditions after he or she dies. A will can be left in three ways: official will, holographic will, and oral will (İmre & Erman, 2013: 70). Procedures of an official will and an oral will be slightly different because they

require the involvement of some authorities. However, a holographic will can be left without requiring the involvement of any authority. But, date, signature, and content must completely be written only by a person who leaves the will.

Digital data carriers started to take paper's and pen's place in the digitalization process. Accordingly, digital texts started to be written on tablets using special pens and they started to be kept as digital data. It is suggested that wills left in this way should be valid (Akkanat, 2001: 808). Another type of digital will that started to be discussed recently is a will with the digital signature. A groundbreaking development was experienced related to this issue in 2001 and the Electronic Will Law was adopted in Nevada State of the USA (Grant, 2008: 108). The purpose of the adoption of this law is to facilitate testators' willingness to leave a will and to provide the opportunity to leave a will appropriate to digitalized lives in parallel with changing social structure (Grant, 2008: 124). It is stated that the same result should be achieved in terms of Florida State of the USA and the electronic will can be left in accordance with Florida law 732.502 (Martin, 2009: 61 et al.). Even if Indiana State's Statute of Wills does not completely allow for an electronic will, it considers electronic evidence that proves a testator's will and mental health status as valid. Law tradition was moved to written generation from oral generation and it has moved to digital generation from there (Grant, 2008: 112). Regulations are also bound to be appropriate to the social reality.

The effect of digitalization in US society in the field of law of wills on law is more clearly felt, while Turkish law of wills does not lean towards the digital will in a digitalized society. The Turkish legal doctrine mostly asserts that a digital will cannot be left because of very narrow and strict interpretation of regulations, especially in the Turkish Civil Code relating to hand written wills in terms of grammatical interpretation. However, in our opinion, if regulations in the Turkish Civil Code and Electronic Signature Law are interpreted according to the purpose in front of a digitalized society and the world, it does not prevent someone from leaving a digital will (Savaş, 2007, 69 et al.).

Conclusion

Mankind who lived as an agricultural society for thousands of years was not exposed to fundamental changes within this process. Even transitions between stone and metal ages did not occur very fast. Together with industrialization from 1750 AD, society stepped into an industrial society very fast, and the influence of the industrial society continued until about the 1950s. During this period lasting 200 years, changes occurring in societies were much faster than in previous periods. The change in the information society emerging from the 1950s occurred

at an unprecedented pace. Changes in the information society accelerated much more especially with the widespread use of computers and the emergence of the Internet. The change process beginning with tablets and smartphones since the mid-2000s has transformed the information society into a digital society.

It cannot be thought that law does not change in this change adventure. Law, follows changes in society and its change is affected by the society itself, has undergone profound changes together with the industrial society. Approximately 1000 years after codification works were performed in 530 AD during the Roman Empire period in Europe, the law was subjected to recodification with the effect of the industrial society. The change of law in line with changes in industrial society has become inevitable. Law became completely different after the transition to the information society and especially in the new digitalized world. While legal issues arising from industrialization have not yet been completely solved, many new problems have been laid in front of the law with digitalization.

Digitalization of the law provides many advantages in terms of time, stationery, bureaucracy, and communication costs. Despite that, digitalized law's biggest problems are the failure to include all generations in the widespread use of the Internet, system problems, and data security.

Although society's digitalization process was very fast, digitalization of the law and legal experts was not that fast. Law's classical distant and hesitant approach to change causes delays in some areas with the effect of legal experts who are unfamiliar with the digital world.

Upon the transfer of commerce into the electronic environment, regulations related to legal transactions conducted over the Internet gained speed, and the digital signature started to be used by having the same legal power as a hand written signature. The digital signature, which began to be used widely in the public area, does not have the same extent in the private sector.

The removal of borders between countries in the digital world makes it difficult to fight against cyber crimes. Also, difficulties in determining identity in the digital world increase problems related to confidentiality and privacy.

Digitalization of the tax system increased tax revenues by facilitating such operations such as tax imposition, assessment, and collection. Despite that, informality increased in terms of electronic commerce taxation.

While digitalization facilitated the establishment of contracts and the performance of digital actions, it caused many problems in consumer law and several amendments were made in consumer law as a result. In addition to physical notifications made to residential or workplace addresses, digital notifications made to electronic e-mail addresses are a result of digitalized law.

As one of the most important arguments of inheritance law, wills started to be digitalized. For this purpose, laws allowing for digital wills were accepted in some states of the USA, and some of them started to find it favorable. Despite that, Europe and Turkey still remain distant to digital wills.

Digitalization of the law is not occurring just by making laws that allow for digital operations. Individuals and institutions engaging in law enforcement should approach digitalization positively. The acceleration of changes in the digital society and the increase in the number of legal experts who grow up in this society will accelerate the digitalization of law. Besides this, the emergence of new problems will be inevitable.

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Changing Face of Economic System: Digital Economy and its Effects on Employment

Introduction

As a natural result of globalization, the removal of both economic and sociocultural borders between countries brought together innovation processes in economic systems and economic course. Production processes, in which an innovativeness culture is attempted to be placed, made the national innovation system inevitable for all counties around the world. Certainly, the existence of economic systems based on information and learning underlies innovativeness. In this meaning, world economies initiated the revolution of the digital economy as a result of data processing; technology based planning, and production in terms of efforts to realize growth targets in the world economy. Although the concept "digital economy" is often confused with phenomena such as the information economy and the network economy, primarily, in the form covering these, it is a broader concept expressing the common use of technology in every area.

Globalization tendencies gaining acceleration every passing day, apart from removing borders between countries, appear as an element increasing the transformation of the world into a single market and mobility of production factor in the world economy. Hence, information and data processing systems have become the final result and locomotive of globalization. The transformations and changes occurring in Information and Communication Technologies (ICTS) in recent years, which are defined as a revolution by many authors, together with it, have again made production and consumption patterns meaningful. The armed war of the old era between world countries was replaced with technology wars and technology, among production factors, and has become an element for bringing strength to the economy where it is rich in terms of equipment. Despite this advantage, it is obvious that the digital revolution led to many problems from the socioeconomic point of view. As a matter of fact, the digital activity has transformed people's activities into a more simple and time saving manner with positive impacts in

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both labor and money investment that even distinguishes the difference between developed and underdeveloped countries.

The digital economy, based on developments in information and communication technologies, which emerged based on information, includes the processes of obtaining, processing, transforming, and distributing information. Thanks to this, the existing processes of production, consumption, capital accumulation, and apportionment in the economy undergo change and the share and effect of the new product and services increase. Hence, it is possible to mention many effects of digitalization tendencies at the micro- and macro-level.

On the other hand, digitalization of economic course includes many positive effects such as productivity increases, economic growth, gaining a competitive advantage, and experiencing time benefits.

In this section, although the dimensions of the digitalization process experienced in world economies and its possible effect on macro variables are generally dealt with, the effects of the process concerned with the employment of the labor factor are discussed.

New Period in Economic Course and Digital Economy

The process of transnational integration emerging especially in the late 80s, in terms of its effects on the economy, is called the new economy. Besides the advantages of the new economy to the traditional or, in another word, old economy, the disadvantages it also brings with it are also a subject of the discussion. Even though most of the studies taking place in the literature emphasize the innovative viewpoint that the new economy brings to the economic system, some parts of the studies deal with disadvantages, especially the effects of increasing employment and creating developedness differences.

The term 'new economy' expresses an innovation process which also incorporates the phenomenon of digitalization. The most important aspect of the new economy is that it reveals the changes and transformations in the economic structure and systems. The contributions made by these changes and the transformations to the system emerge, depending on the sustainability of macroeconomic policies. The contributions of interest are summarized by Bernard L. Weinstein as follows (Cited by Norton, 2000: 2):

- An economy that grows without the apparent threat of recession.
- An economy that continues to expand without a pick up in inflation.
- An economy constantly restructuring itself for greater efficiency and productivity.

- An economy replenishing and revitalizing itself through new technology and capital investment.
- An economy that functions without excessive debt, either public or private.
- An economy that maintains a balanced budget.
- An economy that is increasingly globalized and export driven.

Another important element of the new economy is digitalization and, depending on this, the gradual deepening of digital division (Akyazı & Kalça, 2009: 9). Digitalization expresses that in the social, cultural, political, and especially economic areas, data processing technologies are adapted to systematic processes and a transformation. Between the concept of progression in information and communications technologies and digitalization, there are some differences in terms of the depth of concepts. From this aspect, the information economy and the digital economy do not have the same meaning and the information economy forms the main cornerstone of the tendencies of the digital economy. As a matter of fact, economic digitalization actualizes through information and communication technologies.

On the other hand, digitalization tendencies, together with it, trigger a much higher increase in the developedness difference between societies or different sections in terms of technology, called digital division. While some parts of the world produce technology, an important part of it consumes technology. The sector consuming technology is divided into those adapting the technology they buy for their own production processes without producing it and those only using technology. Without making any contribution or without using technology as an input, between the consuming sector and others, a serious difference is naturally revealed. Thus, from the social, cultural, and, of course, economic point of view, countries that can follow technological developments become considerably advantageous compared to those that are not able to follow these developments.

As a natural result of the Internet and information age, it is possible to put the features of this new economic order in order as follows: digitalization as information, virtuality, becoming molecular, integration, merging, innovativeness, removal of borders, globalization, the utility of speed and time, and incompliance. Digitalization gradually becoming widespread underlies the features differentiating the new economic system from the old economy.

In particular, economy policies, under the name of the new economy, that emerged in the economic course made many positive changes obligatory. The most basic focus of these changes emerged in the roles of economic decision units. That is, the new economic process resulted in the roles of many actors such as

non-governmental organizations, especially the triad of government, individuals, and firms, to change. In the new economy, there are a number of features such as that markets are very dynamic, that competition is at a global level, that firm organizations turn into a sort of network, that production is flexible, that innovation and information is a main element in growth, that there is lifelong learning, and that arrangements are carried out by market instruments and in more flexible way (Akyazı & Kalça, 2009: 10).

The countries proceeding and wanting to proceed along the way of economic development are first of all obliged to integrate into the new global system in terms of the development stage. The most basic requirement and the role of the integration concerned are undertaken by the government. Economic policies that are to be followed by governments in the direction of the targets of welfare maximization moved away from the approach of the intervening or entrepreneur state and the approach of the adjudicator state and the national state only regulating the game rule in economy policy, and the limited and international state undertaking of some missions in the market economy has stood out (Karaçor, 2012: 35). On the other hand, government policies giving direction to other actors focus on removing regional unbalances and turning the national innovation system into a culture. Digitalization, in other words, innovative culture in the development area, is the most important determinant of the competitive power of countries in the global plane. On other hand, digitalization also creates a gap in terms of the developedness level. Economies, which cannot adapt to the innovation process of global world, cannot complete their stages in terms of their welfare level and must import technology. In the globalizing world, the role and effects of government also make it necessary for firms to change. Firms, for the sake of being able to increase their competitive power, adopt to implement the new production and governance systems as their main strategy and, thus, place targets on increasing their profit shares. On the other hand, the process concerned also modifies the role of the individual actor. Together with the new economy, the demand for a qualified labor force and, thus, for the potential and actual labor supply to become qualified and included in the employment process.

Macroeconomic results of the new economy emerge with the productivity increase observed at the level of productivity in the economy. Together with productivity increase, an increase in total product occurs and, using the same amount of production factors, more output can be obtained. When it is dealt with from this viewpoint, it is obvious that in the economic system, digitalization affects productivity and growth in a positive direction. In addition, the new economy also affects many macro variables such as foreign trade, income distribution, cyclical

fluctuations, competitive advantage, etc. The subject that will be discussed here is its effect on employment.

The Effects of Digitalization on Labor Employment in New Economic System

Digitalization of countries and the power to be able to supply innovation in both production technologies and national dimension, accepted as a developedness indicator by many international organizations, became one of the interest areas of a new type of economic literature. This new economic system, in which information and, in turn, technology have become the cornerstone of the economic system makes important effects and contributions on/to country economies. Apart from its undeniable contribution to productivity increase, the effects of digitalization on economic relationships and activity on the labor structure of countries and employment should be separately discussed. That is, in the production process of countries, to what degree the labor factor as its obligatory input can integrate into the digitalization process forms the most important leg of the successes of countries in becoming a digital economy. On the other hand, the fact that the information process becomes so integrated into each stage of production grants it the ability to differentiate the qualification degree of a certain labor. When it is dealt with from this aspect, digitalization in economic life, in other words, the effects of the digital economic system on employment, is an important study area that needs to be dealt with.

The digitalization process has stamped its effects in both negative and positive aspects on the development of the economy and employment. In terms of SMSEs, when it is put forward that they can face a danger of disappearance in the digital economic environment, the integration of the transformation process is importantly emphasized. The Report on Appearance of Digital Economy (2015), published by the Organization for Economic Cooperation and Development (OECD), attracts attention in terms of some points it deals with. In the report, the deep effect of the digital economy on key sectors such as banking, energy, education, health, and transformation in the world economy and its reflections increasing global trade are emphasized. In the report, in which it is emphasized that the digital economy has yet to range below its potential, it is revealed that OECD countries and economic partners believe that it is important to catch the potentials of people in order to get tangible growth. In addition, according to reports great potentials were recorded on the ict and digital aspects. In addition, in the report, governments in OECD countries attract attention to the fact that the digital economy increases awareness toward the requirement of responding to

main difficulties such as strategically developing the digital economy, increasing its benefits, reducing unemployment and inequalities, and rescuing people from poverty. The national digital strategies of the present day include a variety of issues such as opening work areas to productivity increase, public administration, employment, education, health, aging, and development. According to the abstract of the report (http://www.oecd-ilibrary.org) it is necessary for infrastructure, which provides the basis for new business models, e-trade, and new cooperative scientific and social networks to be of high quality, to be accessible by everybody, and to be reachable at competitive prices. On the other hand, governments, although they remain in a difficult position in the face of some changes including the integration of job models around competition in the digital economy, telecommunications suppliers, and new Internet players have to participate in efforts to keep artificial barriers in front of the access points and strengthen legislation consistency. Strengthening mobile markets should not lead to regression in innovation and the competitive ability of other actors.

In the report of the World Bank titled "World Development Report 2016: Digital Benefits", for the expected development return of the digital age to be able to be revealed, two main actions are recommended. According to the report, besides closing the digital gap by making the Internet universal, cost-effective, clear, and reliable; digitalization strengthens the arrangements providing competition between businesses, making the skills of employees suitable to the demands of the new economy, and should provide the accountability of organizations. In addition, in the report, which states that digital development strategies should be more comprehensive than the strategies of information and communication technologies, strategies for making the businesses of countries more productive and effective are discussed, including: investing in the main infrastructure, lowering the cost of conducting business, reducing barriers in front of trade, facilitating the access of new businesses to enter the market, strengthening the competitiveness of organizations, and providing competition on digital platforms (www.tobb.org.tr).

Together with the new economy, important changes occurred in business life and economic course. With the above given information, traditional work flow has also undergone a change. The traditional work structure in the tangible structure based on material and physical skill leaves its place on the information process, which is based on information and mental working and constitutes an intangible structure. However, while there is a physical transfer in the traditional business structure, there is information transfer in the new structure (Nickols, 2003: 3). As a result of these changes regarding business life, under the effect of information and technology, the quality of the traditional labor force also underwent a

change. In this new order, in which the traditional labor force was not enough, workers were needed who had the ability to be able to solve the problem and provide analysis and coordination using information, and who were qualified, creative, open to innovation, and open to learning. In other words, as a result of the digital economy, learning economies, and learning individuals and firms can provide the advantage in competition.

When it is dealt with from this aspect, although digitalization creates economic income, competitiveness, an innovative culture, and most importantly, employment, there are some views that it increases unemployment, in a general sense, especially in some sectors. Especially in the manufacturing sector, the development in digital technologies is creating huge unemployment. As a result of robots and machines, large companies move toward the limitation of personnel. For using this kind of technological method, in fact, since there is a need for personnel trained at a certain level, workers making physical efforts in the traditional economy, together with the development of new production systems, are replaced with educated workers and, in turn, non-educated workers remain unemployed. However, in developed countries, since the employment level is high, in the dismissals resulting from technological development, with the formation of another work area, the temporary unbalance in employment establishes its own balances in the short term. In these countries, those remaining unemployed can be continuously recruited by service sectors. Thus, in contrast to the view that technology increases unemployment, technological developments are evaluated as factors leading to unemployment for a long time (Yücel, 1997: 91, Cited by Yumuşak & Özgür, 2007: 34). One of the effects of the new economy on unemployment is also that it forms new employment forms. Lifelong employment under single employers and forms of standard traditional employment having protection features against unfair abolition enter under the press of atypical employment forms and also qualify as flexible business relationships. Atypical employment is based on an atypical service contract prepared to meet the needs of employees and make the labor force flexible. In some cases, various sorts of atypical contracts can be applied together or intertwined (Yumuşak & Özgür, 2007: 34). When the features of atypical employment are considered such as that it leads to labor force polarization, the forming of environmental effects in businesses, and that it does not have job and social insurance security, it is possible to say that it leads to some problems. These problems, which arise from the traditional employment model, are not compatible with the dynamics that the new formation brings after digitalization and reduce homogeneity of the labor force (Benli & Gümüş, 2002: 592).

Turning digitalization into strategy and being able to reach the desired level in terms of operational competences is the key point in terms of the competitive power of firms. As is given place in the Report of the Results of Accenture Digitalization Index Turkey (2015), the digital transformation of in–company competences, enabling companies to become more efficient, more simple, more flexible, and more agile, develops their competitive positions. What makes digital technologies attractive is that they change the working styles of companies and any activity or process has the ability to make improvement related to the distance of time and cost. In the digital age, in order to create a jump in productivity and effectivity and improve efficiency at the institutional level, making in-company operations and processes parallel with work flows and organizational structure are the most important points. On the other hand, according to the report, digitalization incorporates opportunities and risks together. Together with the burning effect of digitalization, companies may lose their competitive passions that they obtain in the long term. In the meaning of growth, effectiveness, and competitive power, every company, and every sector can internalize digitalization. In the last 10 years, digitalization caused a portion of the traditional company to disappear and this situation appears as a result of the business model of the traditional sector being demolished by digital business models. On the other hand, the probability of companies catching the opportunities that digitalization brings to change the way that they do work and strengthen their competitive position are very high.

These qualitative and quantitative changes occurring on a global scale force the production sector to innovate in a competitive meaning. Economic structures that make an effort to be able to sustain their activities in the economic system and increase their market share in markets undergoing continuous change are obliged to make effort, especially in increasing their effectivity, to become a part of the innovation economy. From constituting production to realizing sale and post-sale services, including the phenomenon in their processes, for businesses is no longer needed to create a luxurious thing or difference, but is a complete requirement. Ambiguity competition faces as a result of innovative processes makes it obligatory for the integration to an information based economic system for sustainable competition. In this meaning, businesses begin to search for new ways to increase their effectivities and profit margins.

When it is considered that the economic system passes beyond the Keynesian, Classic, Monetarist, etc. analyses, the importance of understanding, predicting, and implementing information also increases. It is obvious that traditional views remain inadequate to describe economic relationships. In this meaning, new movements shake orthodox principles and many new interdisciplinary

movements, especially the neuroeconomy. The radically changing new economic system generates, in terms of the meaning charged on the production function and production factors, increases in effectivity but leads the labor force, which is unskilled or does not have enough knowledge, to be pushed out of the system. When the digital economy becomes widespread, the cultural models are all replaced with the digital models. The most basic reason for this situation is the target of minimum cost and maximum effectivity; in turn, profit maximization. The features of the learning firm present the advantages of competitive power to businesses in both sectorial and global dimensions. There are some remarkable differences between traditional firms and the firms which learn, and thus, are innovative and adopt the approach of information and quality oriented effectivity. Together with the new economic system, the homogenous structures of businesses into a heterogeneous structure, in which multiple production styles based on a differentiation strategy is adopted. The basis of this transformation process naturally comes together with learning, information, innovative production, and specialization. The fact that businesses are concentrating on flexibility as the ability to be able to adapt effectivity as well as changing global conditions and technological production systems is remarkable. And all of these changes are related to being able to supply an information based economic system and mechanism in business. In other words, providing digitalization in all stages of production.

The effects of the digitalization process on employment occur, depending on the changes concerned. In the environment, in which increasing competition, and information and continuous innovation become the most important element, the share of the "information worker" gradually increases in terms of employment. The feature of the information worker is that he/she is creative. Therefore, it is necessary to arrange economic policy so that it can increase the skilled labor force that can use information processes. The increase of employment depends on that economic growth being growth creating employment. In other words, it depends on it being effective growth. The output of growth is employment. This output also makes the structure of the factor labor force dominant, while active policies (in–public placing and mediation services, occupational education, policies toward young people, and policies toward disabled people) defined by the OECD and passive policies (early retiring, severance pay) are applied. Economic policy, especially applying policies, which increase the information accumulation of labor and create skilled labors, will both actualize the growth process and increase employment (Karaçor, 2012: 37).

Apart from the social and cultural effects of the digital age, its effect on effectivity is of course at an undeniable degree. Besides it enabling some employment

possibilities to be created, digitalization, which leads some business lines, especially those based on manpower, to completely disappear, causes many changes in both a national and global meaning. Many new digital media types, especially electronic trade, which present the opportunity for product and service diversity, make the strategies of businesses in the way of competition difficult. More shares make it necessary to be well, different, and flexible, and thus, to be able to integrate into the digital world. This situation is certainly possible with the qualified labor force. When the case is dealt with from this aspect, even some productions are becoming digitized which creates a large amount of unemployment. The sectorial effects of becoming widespread of ICTs are remarkable. For example, the effect of digital content services on the printing house, paper, and ink sectors was destructive and, as a result of profits decreasing in these sectors, remarkable work losses were experienced. This effect of decreasing employment, which may be evaluated as a sort of creative destruction in terms of some sectors, when the whole economy is taken into consideration, runs oppositely. The most important cause of this situation is that profit, which forms as a result of the improvement of business models and increasing effectivities, turns into investment and creates new employment areas.

In the world, with the development of ICTs, a process has emerged, in which work becomes independent form physical spaces by means of technologies such as the Internet. At this point, albeit the information economy increases the employment of new jobs and new occupations, there are two points that are necessary to be ignored. In the first of them, together with the development of the information economy, industrial production accepting large employment levels lost power and, instead of this, mostly technology based production developed and, with this development, the demand for the labor force increased. The second point is that the information economy incorporates the tendency that new unemployed people form. The information economy restricts some businesses from havin traditional structures and employment. In this scope, together with the information economy, for the works repeated in the production and service sector, the view that work demand will decrease and that there is a future for skilled technicians at an advanced level and managers is put forward. For significant sections of the population, the work in today's meaning will completely disappear (Doğuç, 2006: 28).

Besides technology, the information bunch that comes from digital places could be again solved in the digital system that would again be the reason for unemployment. The intensive competition in the information economy, reasons such as labor productivity based on muscle force being low, problems emerging in management activity, and the shifting of investments to areas of advanced

technology to provide labor force savings are explained as the other factors reducing employment (Kutlu, 2005: 101, Cited by Doğuç, 2006: 28).

It is necessary to shortly express, that albeit the digital economy enables new employment areas and new activity areas to emerge, it also brings some drawbacks with it. In particular, industrial production, which incorporates large employment numbers, lost its power and, instead of this, a production model mostly based on technology developed and caused the need for the labor force to decrease. Another point is that the digital economy incorporates the tendency that new unemployed people form. It is possible to say that this system that is experiencing rapid technological development especially has an extreme structure.

Epilogue: What to Do?

In the conversion process of societies, the most affected part is labor in terms of the economic situation. In the direction of changing conditions, the structure of the labor force also undergoes a change. Together with transformations of world countries into information societies and global integration processes, a similar requirement emerged. As a matter of fact, in economic relationships, as a natural result of internationalism, data processing, developing technology, and digitalization in production processes have become dominant. Although this state modifies the form and structure of employment in terms of quality scales of the labor force, it also becomes effective for the level of use as an input. On the one hand, while the world is globalized and rapidly digitalized, remaining out of this process will push foreign dependent and backward countries' economies and firms out of the competitive circle. Thus, what is there to do? What should be done in order to keep in the competitively digitalizing world and what should the governments and firms undertake?

In the process concerned, the adaptation of the actor firm, whose objective function is profit maximization, becomes easier to process compared to other economic actors. The reason for this is that firms already know that they have to keep in step with the renewing systems in order to make higher profits and survive. Certainly, this consciousness level should be supported by firm strategies and many efforts such as in-service training follow up of the digital world in operational meaning, and its integration into production processes should be supported.

On the other hand, in the digitalizing world, being able to catch the desired developedness level is especially possible with economic policies that governments will follow. As long as only firm (private sector) enterprises are devoid of government policies, success at the desired level cannot be obtained. Thus, to

eliminate the destructive part of digitalization and to catch the advantage of the competitive country, a primary role is required with managerial mechanisms having an innovative government. For this, firstly, in the private and public sector, actions will be taken to encourage labor force employment in suitable quality for the criteria of the information economy, and the development of new job areas forming the information economy will be encouraged. In addition, there is a need for arrangements to support new working modes. Toward this, for compliance to digitalization given place in the text B-20 Digital Economy Policy, the necessary actions and policies are put in order as follows (www.b20coalition.org):

1. Develop alternative policies to data localization.
2. Improve the global trade system for the emerging digital economy with direct focus on e-commerce and digital trade.
3. Improve access of enterprises to the digital economy and infrastructure.
4. Develop and finance programs aimed at reducing skills mismatches in an era of rapid changes in technology and innovation.
5. Assure legislative and regulatory support for alternative forms of funding.
6. Improve digitization of government processes.
7. Establish a G20 governance mechanism to implement measures to improve the digital economy.

All of these suggestions are possible by including the qualified labor factor, as the most basic component of digitalization, in the process. The strong relationship that is present between human capital and effectivity in the literature (OECD, 2001c: 55, Akt. Kelleci, 2003: 26) is accepted as the indicator showing that there is a complementary relationship between new and human capital. One of the main factors underlying a high growth performance is accepted as the pool of the high skilled labor force in many countries (Kelleci, 2003: 26). When it is considered from this point of view, it is necessary to deal with the individual in order to know what to undertake. That is, keeping in step with the digital world and perceiving the Internet and communication technologies in the quality of the obligatory labor force other than using them in social areas is the mission of individuals. Especially in developing countries like Turkey, human capital becoming qualified in terms of quality and effectivity are the most important steps for development. In countries similar to Turkey, unemployment still becomes dominant as a serious problem and adequate actions cannot be taken in this area. But, the struggle with the problem of unemployment is possible not only by the policies of government, but by the actions of conscious, raised, and qualified young generations. Especially in universities, in order for individuals to reach the effective and creative level, it is necessary to create a set of arrangements and awareness.

Besides having an authorized institutional arrangement to form information strategies, following, coordinating applications, intervening and solving problems, and having awareness are obligatory for young generations. Researching and creating individuals can also drive dynamics in the development of countries. All of these are possible through innovative government policies. It is obligatory that the government provides the necessary infrastructure for education, training, and developing skills in citizens in the form supporting entrepreneurship, employment, and e-transformation processes. In this way, managing the risks of digitalization on employment will help to turn risks into opportunities and transform the labor force into new types of digital jobs.

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Digital Photography from Different Aspects

"Digital photography simply does not exist."

Lev Manovich

Introduction

After digitalizing, many parts of daily life have changed considerably. Everything from the language we speak to the conversations we have with other people have been reconstructed. This reconstruction process sometimes makes innovations from the old system, while it sometimes produces completely new models too. The transformation in photography influences human life, giving a new meaning both formally and spiritually. The improvement in the number of visions and the change happening in human life have put photography into a central position. This new and central position of photography obliges it to restate photography, photographers, photographs, the relationship between photographers and their photographic apparatus, and the act of taking photos. The photograph was the most significant, in terms of cultural and social weight, of the 'new area of serially produced objects' characterized by modernity (Gere, 2008: 36–37). This modernity also covers a part of technology attached to digital photography and the new digital concepts in social life. The camera, as an eye, free from limitations of time and space, also has the idea that the images are free from depending on time that has developed (Berger, 2010: 17–18). Digital photography also hugely promotes this concept because the new technologies afford the digital photography cycle in the world. New media changed the idea of time and space and created new forms of time and space referred to as "Internet time" and "electronic spaces" (Tsatso, 2009: 11). The ease to share digital photos instantly and rapidly in new media as a gigantic atmosphere acquired a new pattern of interactivity to digital photography. The fact that social media allows people to share digital photos instantly causes a great circulation and production of digital photos.

These photos are continuously shared in the Internet time and electronic space both timelessly and spatially with mobile devices. Mobile devices such as cell phones and tablets also promote digital photography. These two devices are the

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sources of production of digital photography and are also the tools of sharing and interactivity as social media connectors. Social media is the most considerable agent of the cause of production and consumption of digital photography.

Given the nature of social media, the interaction of people mostly depends on photography.

The aim of this study is to examine the basics that differ between analog photography in terms of the properties of digital photography. In the study, the in-depth interview method was used.

What Digital Has Changed in Photography in Terms of the Production Process

The most fundamental change to digital in photography is the rise in its production. Obviously, under the skin of this rise, the improvement in production conditions of photography has come into play. The process that began with Camera Obscura still continues with Camera Obscura under electronic conditions. These different conditions have seriously influenced and eased the production process of photography and have thus raised its production. Since the day that Nicephore Niepce took the first photograph in eight hours in 1826, many factors from exposure time to changes in optical elements and the improvement in sensor-ISO context that affect the decrease in time of production have already been scrutinized.

The speed of taking a photo with a digital camera increases breathtakingly and this speed is stated as a shot per second. This allows us to make a retrospective comparison and indicates that this speed is going to be higher in the future with the help of digital technologies. As a result, the first thing that comes up after any possible change in the number of photos shot is technologic improvements. "In comparison with digital ones, film cameras are too slow. Even preparing and ready-to-shot analog cameras take much time. At least putting the film in takes some time. For installing an analog camera, we need more time than we need for digital ones" (Ö. Yurdalan, oral interview, July 13, 2016).

The speed in digital technology also originates from the ISO performance of cameras. ISO performance indicates the light sensitiveness of the film. The advantages of digital cameras in taking a clear photograph and shortening the photographing time under low or bad light conditions cannot be underestimated. Technology improves some means while it limits others. "One of the epitomes of this is that digital cameras reduce the sensor quality and transfer from CCD sensor to CMOS sensor in order to increase ISO performance. It is possible to get from a camera that was bought ten years ago a record tone which does not exist in a newly bought one. At this point, we can see that camera

producers begin using high ISO performance devices changing the sensor type" (E. Güneysu, oral interview, July 12, 2016). Digital technology might compensate for sensor quality in order to increase the speed as a result of significantly increasing the speed.

"Less photograph would be taken after a long consideration in analog photography. But now, more photograph can be taken after a little consideration. The speed in digital photography encourages photographers to shot more. It can be concluded that digital photography is based on speed while analog photography is based on slowness" (H. Kasapoğlu, oral interview, May 7, 2016). "The speed, provided by the opportunity digital photography gives us doesn't provide quality. Photographs should be taken slowly and deeply" (Ö. Yurdalan, oral interview, July 13, 2016). However, the speed of digital photography causes the relationship between speed and theme to be superficial.

It is obvious that production type in digital photography provides numerical production. Another reason for producing so many photographs is about the production costs of a digital photograph. "For instance, we can get a production range equal to 100.000 analog photographs with a camera that costs 1000 USD. This is a great opportunity. In analog age, the fact that production depended on film made it difficult to shot for the photographers due to financial abilities. However, the fact that digital cameras do not depend on film provides a great freedom of production to photographers once they have the camera" (S. Yaman, oral interview, May 28, 2016). While the financial situation needed for providing photograph production conditions in the analog age should be continuous, this trouble is completely managed in the digital age once a camera is bought.

"Because analog photography is costly while digital photography is not, many can be taken. This causes two things: Firstly; build-up in photograph archives. People think they get a good result from producing a photograph. This, in fact, is a contradiction. A photographer might have hundreds, thousands or millions of photographs. Many of these photographs are wasted in archives. Secondly, among all these photos the ones which have real quality are also wasted in those archives. This kind of photographers makes a product that he can not manage" (H. Kasapoğlu, oral interview, May 7, 2016). "What adopted as a production process in digital photography is a confrontational manner. Photographers keep a large number of images due to some reasons such as mass photo taking, confrontational manner and taking the picture of the same theme all the time. A need of checking this pile occurs. Because photographers take too many photos in the shooting period, neither can he check all these photos, nor completely manage the theme. This shooting process makes the photographers miss the theme" (E. Güneysu, oral interview, July 12, 2016).

"Together with the fact that there are many reasons for vagary in image production, we here by face with a pile of images as a result more than these reasons" (H. Yılmaz, oral interview, May 12, 2016). "The best way of getting away from this pile is to archive photographs in the correct way. Archiving them in a correct way is based on classifying photographs and coding them with letters. Otherwise, it is going to be a pile not an archive" (Ö. Yurdalan, oral interview, July 13, 2016).

Both analog and digital archiving have some difficulties. The greatest risk in analog archiving systems is the deterioration of the film. It can go bad in time. So, we may keep some copies of that film. "There are two more risks in digital archives: Firstly, irremediable loses which happen as a result of permanent damages in digital record atmosphere, including the archives. A virus called ransom locks the photographs so that passwords cannot open it and this makes it impossible to reach them. This fact shows that it is not possible to trust digital archives" (S. Yaman, oral interview, May 28, 2016). Because of this, printing photographs is getting more and more important. While we can easily reach old photographs that were taken many years ago, it is not so easy to be able to reach the ones that were produced a short while ago.

The main image is affected less by other things in a digital photograph. "In analog photography, the fact that chemical bathing solution is not good and the film is not good or too good affects the results directly" (S. Yaman, oral interview, May 28, 2016). The fact that such chemical things do not happen in digital photography puts photography in the same conditions and results. "However, the sensor which indicates different light positions and light sources in a different way poses varied results in digital photography. In analog photography, 10 frames can be placed on one film and the same results might be achieved bathing this film in the same chemical bath" (Güneysu, oral interview, July 12, 2016). In this respect, in terms of recording, analog photography could give the same results for all the photographers. However, in digital photography, variation in terms of recording is much higher. The programmes in the camera produce the photographs in accordance with the conditions given.

Güneysu (oral interview, May 7, 2016) says that digital photography comes up with a good result in black-and-white photography as analog does. In digital photography, even the best camera cannot provide a good enough black-and-white photograph. Kasapoğlu discusses the issue that digital cameras use a system of zeros and ones so it cannot include semitones (oral interview, May 7, 2016). According to William Mitchell (1992): "There is an indefinite amount of information in a continuous- tone photograph usually reveals more details. A digital image consists of a finite number of pixels, each having a distinct color or a tonal

value, and this number determines the amount of detail an image can represent" (Manovich, 1995: 8).

"Photography belonging is more in digital. A photographer can reach the result directly in digital photography. This lets people see the photograph without a need of anyone else. In the age of analog photography production, many – especially amateurs – did not use to prepare and print their own photographs. They had to continue this process in need of a third person's help. This third person could both see the photographs and copy them for his/herself too. In this respect, digital photography provides freedom. Homes are like labs and private photographs should be printed only as the owner could see them" (S. Yaman, oral interview, May 28, 2016).

The system in which print is not needed as in digital photography has caused it to become ordinary. Güneysu says, "Everything of which workmanship part of itself disappeared will be a slave to be enslaved". Digital photography has ended crafts. Yaman says, "Easiness, comes with digital has ended craft and eased photography. So the respect to photographers was gone. Analog's difficult printing makes it not so easy". This fact prevents easiness and provides quality work. Digital, in this respect, both ended the learned master-apprentice relationship and made photography easy. Where photography is used affects where it will be taken and where it will be used. Photography can be classified into types according to varied media. This also changes the production types of photographs (H. Kasapoğlu, oral interview, May 7, 2016). Digital photography has increased the number of photographs and changed the way of sharing them. Digital photographs would be taken so that one can share it all over the world. Social media tools and those pages which are only for sharing photography have increased photograph sharing. "Social media supports photography. What makes photography so famous is social media itself" (Güneysu, oral interview, July 12, 2016). In this respect, we are faced with two consistent concepts. In digitally produced photographs, the principle of social media, which enables people to show their photos and share them, feed each other. Both concepts integrate their presences with one another.

Another concept that has become as easy as sharing is transfer. Digitally produced photographs can be transferred in different ways. Digital photographs can be transferred digitally so it does not cost much and is easy while an analog photograph can be sent only as itself because it cannot be copied as the same with its original.

Digital photography should effect the editorship period in such ways: Mass production has increased the need for people who will decide the principles of how to choose the proper photograph. The need to choose the correct photograph

has increased. "In analog age, if photographers wanted to hold an exhibition, they would have to consult many people in order to get permission. Today, a photographer might hold an online exhibition. So the need of an editor is less than ever and even this need can be met in two ways: photographs should be checked to someone else or everyone should be good at editing his own photographs" (H. Yılmaz, oral interview, July 14, 2016).

"In analog photography age, photographers set light to specific events. For example, in the famous photo called "Vulture and the Child", concepts like Africa and hunger were included and one would envisage this picture when he thought of those concepts. This legendary photography term ended with the rise of digital. The number of iconic photography has increased and because this flow is too fast, people can keep fewer photographers in their memories" (H. Yılmaz, oral interview, July 14, 2016).

The Effects of Digital Photography on the Behaviors of Photographers

The improvements in digital photography revolutionized the behavioral pattern of photographer behavior. One of these is the increase in the number of photos. Because they can be produced at no cost and in an easy way, photographers increased the number of photos that were taken by them.

When we evaluated photographers in terms of production processes, analog, and digital term behaviors, we can observe the photographer's performance more effectively on the analog camera. Having a grasp of a machine process which is a requisite of an analog system is a fundamental factor that emerges for the formation of the photograph. The contact person in the production of the photograph in analog cameras is the photographer. In digital production, the whole process or a part of it is carried out by the machine itself. Therefore, this process allows the photographer to not have dominance on the machine as has happened in the analog term. "In the analog photograph, the photographer is totally the master of the technique and also digitizing eliminated this mastery process" (H. Yılmaz, oral interview, May 12, 2016). In photos taken in the analog period, the photographer managed the production process by himself or herself. Photographers who work with film do not leave the shooting settings to the machine and this process is vice versa in the digital works of photographers. The whole or part of shooting settings are transferred to the machine in this process" (E. Güneysu, oral interview, May 7, 2016). "In the early photos both the camera and the photographer are intertwined. The image is the creation of photographer and nowadays, this connection is gradually reduced. For example, the photographer is a stranger to

the production process taken by mobile phones" (Ö. Yurdalan, oral interview, July 13, 2016).

The necessity of being consistently successful in digital photography, compared to analog, is less and the emotional connection with the subject almost does not occur. This period can be described as a mechanic term for the digital photographer and an inclination period for favoring each other exists. Therefore, this brings superficiality to the context relation of the photographer and the subject matter (H. Yılmaz, oral interview, July 14, 2016).

In the production process of the analog photo, it is necessary to have a print to attain the formed image. By the help of having a print format of the image, the opportunity to use it in the right place could be provided. The possibility of seeing the results in digital photography provides facilities for photographers. It may result in reshooting the image after shooting where necessary. "The photographer doesn't take into consideration the dimension of printing paper and the print as happened in analog. The results obtained already make it possible to share the photo in many places and be in a visible shape" (Kasapoğlu, oral interview, May 7, 2016).

"Photos became hiper-democratic as a result of them being taken by everybody and it had a status of passing the spoken language in the future. While people speak with 3.000 words, they can see 30.000 images daily. This makes humans thinking beings by the virtue of seeing. Many images are subconsciously sent to humans. We can do things with photos now as we formerly did with reading. Any time we see and produce an image. In the past, there was an oral culture and the magic of words. Oral communication was very important and after that, the written culture improved. Now, we are in a period of visual culture and this creates a breaking point. Visual culture weakened the other cultures. Images covered both the audio and literary and made them hybridize. Visuals cover other cultures in the cluster community. Humans evolve from Homo sapiens to Homo videns (H. Yılmaz, oral interview, July 14, 2016).

Effects of Digitalizing Photography on Photography Subjects and the Photographed One

There are some views that argue that there are increases in photography subjects with increases in production in digital displays. On the other hand, we counter some views that argue that there are no increases on photography subjects, but that there is some deepening on photograph subjects. "Subjects on photography expanded with digitalizing. We get the opportunity of shooting subjects which we could not before. Here, downscale on cameras with digitalizing takes an important

place" (H. Yılmaz, oral interview, May 12, 2016). "It is obvious that there is a spread on the subject of photography. For instance, there are increases in subjects in photographic competitions. A lot of subjects, which weren't taken into consideration, now remain on the agenda." (E. Güneysu, oral interview, July 12, 2016). One of them who argues that there is no spread on the photograph with digitalizing is Yurdalan. According to Yurdalan, because bases and conflicts of the world and stories are definite, there is depth in the subjects, which is not expanding (Ö. Yurdalan, oral interview, July 13, 2016).

Firstly, photographers started to shoot remote cultures, and then the process shifted towards shooting surrounding cultures. The next phase for photographers was to start shooting their surroundings by isolating themselves in a sense that photographers started to look at their own world with digitalizing (Ö. Yurdalan, oral interview, July 13, 2016). Thus, photography enabled people to meet with different cultures and form a new life with a new way of the act (Kılıç, 2012: 120).

Choosing the subject is an act by itself for photographers. It is obligatory for photographers to read and research the subject not with visual interest, but with intensive curiosity while choosing the subjects (Hurn and Jay, 2012: 46). "In the past, the photographer found the subject and shot it by himself. The subject he shot would have an impact on all around the world and campaigns were launched about this subject. Now it seems it has changed. The NGO's (Non-governmental Organization) which work in difficult fields try to find supports across the world by photographing their works and using them thereby employing their own photographers" (H. Yılmaz, oral interview, May 12, 2016).

If the subject is about documentary photography whose reality and diversity sides have a strong influence on it, it has a different side of affecting the photographers' behaviors which developed differently from the analog period. "Today, photographers working on documentary photography differ from the analog period, they tell the subject more deeply and their stylistic methods have more creativity. It is digital photography itself which enables the subject to be discussed in this manner" (Ö. Yurdalan, oral interview, July 13, 2016).

Digital photography, downscaled cameras, and mobile devices with cameras similar to cell phones caused doubt on whether or not to display photographed pictures. This results in suspicion about this situation. "In this situation called 'get paranoid effect', the uncertainty of when the cameras of digital cameras and especially mobile phones activate and cause people to suspicion and discomfort" (S. Yaman, oral interview, May 28, 2016). As completely working silently digital cameras are replaced with the size and shutter button sound of analog cameras, it causes people to not be aware of whether or not their photograph was taken.

Digital photography has relaxing effects on photographed people. Contrary to analog cameras, digital cameras' instant display of images has great importance on the occurrence of this effect. The photographed person can see the photograph on the digital camera screen or another screen. It is clear that the printing-developing process of analog photography can take too much time. For example, in a wedding organization, the situation of digital camera's instant displays of the photograph, after being shot, causes the photographed person to relax. But this is not possible for analog cameras.

What Digital Photography Has Changed

"In terms of cameras and the human body, and the relationship between a camera and its user; people, the type of this relationship has changed by time. Due to the hugeness of the first camera, they used to be placed centrally. Photographers used to move around the camera like the satellite. There were two different object relationship between photographers and camera. In the second stage, after the production of upper view finder cameras, cameras have become a part of the human chest. In the third stage, Kodak's 36 film cameras hold a part of the human head. Cameras had begun moving with human head since then. In the fourth stage, digital cameras work connected to both human face and chest. In the fifth stage, the mobile phone was produced. In this stage, mobile phones and photographers act like they are satellites of each other. Here, cameras become independent from photographers' bodies" (Ö. Yurdalan, oral interview, July 13, 2016). In the last stage, a system in which contact lenses that can be placed on human eyes is produced in the light of today's technology. This system works as a part of the human body, too.

- An obvious increase has been observed in the usage areas of photography. Almost all things we can see may be recorded in photographs. This is good for the fact that archives are smaller now and they can be transferred easily.
- It has also increased the use of the photograph in the field of art. This increase happens after photographs are placed in other fields of art due to hybridization in the base of photography.
- In the old ages, famous photograph agencies used to be in the center of photography. Collectives that consist of fewer photographers have become more common since digitalization. Another rival of agencies is citizen journalism applications. Today, anyone can take a photograph of any event and report it to the media.
- Colorization of cameras is a signal for the popularization of photography. In fact, how colored a camera is has no role in producing a photograph. This fact shows that cameras are used for a different purpose from its real one.

– Digital photography minimizes any possible mistake by a photographer in the decisive moment.
– Making a photograph is the process of the reconstruction of photographs, taken in different time zones and places, which changes the meaning they have (Yurdalan, 2012: pg 141). Digitalized photographs consist of pixels. Pixels can be changed one by one or as a whole. One part of a photograph can be erased or pillared. The sizes of images can be changed or images can be added to other images (Barrett, 2012: 199). In this respect, technology is good for making a photograph.

"Digital photography has made it easy to interfere in the photographs. The impossible work of masking pupils in the light room is possible with digital" (S. Yaman, oral interview, May 28, 2016). However, digital photography requires a great deal of experience of using a light room. With such an experience, it is possible to reach the goals of photography. Another aspect in this respect is the connection of analog photography with reality. The record on a film can be visible only after some chemical and physical processes. This fact builds the reality of photography on the chemical and physical basis. In this respect, the fact that a photograph is suitable for being processed brings up the issues of how many processes should be done and where to end the connection with reality. The easiness of doing any manipulation on frames with only one button adversely affects the credibility of the photo (Yurdalan, 2012: 66).

– Interfering with photographs in digital media is a very simple and quick activity but in the dark room stage, a conscious intervention of human hand to an image has always been concerned (Topçuoğlu, 2010: 117). Digital photography includes the reconstruction of modifiable pixels, not the reality (Ritchin, 2012: 18). However, it should be noted that it is possible to see if any operation was made to a photograph, including checking the tracks on it, but it is almost impossible to understand if the digital image was modified or not (Ritchin, 2012: 37).

Now we live in an age of digital image manipulation, and we wonder if that has transformed the role of the photographer and the way we look at photographs. Some critics argue that we are now in a post-photographic age since all the old assumptions about photography somehow capturing the 'truth' have been demolished by digital trickery. Digital images are open to endless manipulation (Bell et al., 2004: 48). The digital camera has definitively legitimized photography as a manipulation of reality through iconic representation (Coronia, 2008: 102). "Manipulations used to be done in the analog age too, but this fact increased with digital. The reason lying behind this increase is that there are too many photographs and photographers. Because rivalry in photography is too much. Photographers who want to

reach the best result in a photograph with manipulation think doing this is a right to them. So, they stand to make even the regulations although they know it is not ethic for them" (H. Yılmaz, oral interview, July 14, 2016).

As a result,

Digital photography has caused the inversion of many concepts but has not completely changed the technique from analog photography. What seems to change with digital photography includes the following:

- As a result of easiness in the production process, the number of prints obviously increased and a pile of archives happened.
- ISO performance, record conditions, and the place of recording that are in connection with cameras' technical properties and come to light under technological improvements changed for the good of photographers.
- The transfer of photography and the capacity of publishing it increased.
- Photography became cost-efficient and easy for anyone to do.
- Reaching the final image has become easier.
- Photographers have had a chance to make mistakes and correct those mistakes.
- Specific expression languages and ways of seeing have occurred.
- The emotional relationship between photographs and photographers has weakened.
- The theme of photography has expanded and become deeper.
- Due to the surplus in production, the editorial institution has become more important.
- The era of famous agencies has come to an end, and collectives and citizen journalism has come to the front.
- The number of iconic photographs has increased, but their memorability has decreased.
- Rivalry and manipulation have increased.
- Craft in photography has decreased, and photographers have begun assigning the cameras wholly for taking a photo.
- The physical relationship between photographers and cameras has evolved.
- Photographers have begun managing less with the production process and more with the theme.
- Photographers have become capable of creating their own media without the help of editors and publication boards.
- The use of photography in arts and the number of photographs based on arts has increased.

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Res. Assist. Tuba Livberber Göçmen*

Digitalized Culture of New Generation

Introduction

The transition from the industrial society to the information society led to many changes in individuals' culture, life conditions, perceptions, and views on life. With technological transformations as the first step of the information society, new communication technologies came into individuals' lives and started the digitalization process in many areas including economic, social, and cultural products. In this process, next generation technologies started to be used instead of traditional ones; economic, social, and cultural products went into reproduction. In the reformation of the cultural products process, many areas which reflect individuals' lifestyles such as business manners, friendship, family and romantic relationships, or consumptions habits are changed. Changes encountered in the globalization process are called "innovations". According to Lessig (2004: 184), the 'innovation' is a controversial issue. This is because the phenomenon of accessing and sharing information is as old as human history and digital technologies only differentiated the process.

This period of today which was composed of digital innovations is generally called the information society or network society. In addition to these concepts, McLuhan's "global village", Bell's "post-industrial society", and Toffler's "third wave" are also frequently used concepts. Manuel Castells' studies have a big role in the development and proliferation of the network society concept. Castells (2013: 621) says that networks constitute the new social morphology of societies and the proliferation of the reason of networking seriously changed the results of operation of production, experience, power, and culture processes. At this point, the network refers to telecommunication networks, highway networks, and municipal service networks getting together with specialized information networks and financial networks infrastructure. The term network is the key point in order to understand cultural change because it is one of the key components of social change (Cheviron, 2014: 59). The reason for this is an argument as the main components of the network approach is that "new communication technologies have changed the classical relation between the time and space".

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In addition to this, the way of change in this relation is qualified as the expressions of Castells' "physical space gives its place to movements place", Mosco's "seizing the time and space by capitalism", Giddens' "decreasing dependency of time-space", Harvey's "narrowing time-space down", and Bauman's "time-space reunited" (Cheviron, 2014: 67). This qualification has a guidance role in making sense of digital culture that occurred from changes in relations between time and space. This is because it is not possible to think of time and space independently from both each other and culture.

The concept of digital (numeric) is the electronic representation of data by transforming them into a binary digit form (Çetin & Özgiden, 2013: 173) and "in technical terms, it is used to refer to data in the form of discrete elements" (Gere, 2008: 15). Digitalization (numeration) is described as transforming "analog" messages into transferrable, processable, and electronically storable signals which include various frequencies (Özçağlayan, 1998: 94). It also provides the opportunity to perform the modification of these transformed digital data (Johnson, 2005: 13). In other words, digitization refers to the process of converting different forms of information, and this might include sounds, images, texts, and so on, into this code (Hand, 2008: 3). By this digitalization process, users are transformed in addition to communication and the media (Çetin & Özgiden, 2013: 173). Because of this, to better understand the change dimension of digitalization, it is necessary to focus on both cultural dimensions which are brought by digitalization and the users of digital culture. In this direction, users of digital culture and then the digitalization of culture are touched upon. Finally, cyber culture as a representation of cultural change is mentioned.

Change in User Identity in the Digital World

In the current digital age, the distance between individuals who internalize the virtual reality and individuals who try to comply with this reality is increasing day by day. According to Mark Prensky (2001a: 1–2), individuals are classified and evaluated on the basis of their technological abilities, skills, and ages according to two groups: "digital natives" and "digital immigrants".

Digital natives are referred to by the following concepts: Millennials, Net Generation, Gamer Generation, Next Generation, N-generation, Cyber Kids, and Homo Zappiens (Pedro, 2006: 1). Digital natives represent the first generations to grow up with this new technology. They have spent their entire lives surrounded by and using digital devices such as computers, videogames, digital music players, video cams, cell phones, and all the other tools of the digital age. Also, computer games, email, social networks, cell phones, and instant messaging are integral

parts of their lives (Prensky, 2001a: 1). In other words, a digital native can be defined as a person who was born after the introduction of digital technology. Digital natives use online services like Facebook, YouTube, Pinterest, Instagram, and Twitter on various digital technologies, such as smartphones, digital readers, or tablet devices. Digital natives have blended their online life with their real life (Sullivan, 2011).

A digital immigrant can be defined as a person who was born before the introduction of digital technology. For digital immigrants, the popular and common technology for them was the radio, television, newspapers, books, and magazines. Digital immigrants are adapting to the digital technology introduced during their life such as online services (Sullivan, 2011).

There are important differences which differentiate digital natives from digital immigrants. For instance, digital natives desire to access information fast, prefer graphics to text, prefer to read any article randomly in a capsule form rather than the linear form, prefer games to serious works, have cognitive structures that are parallel instead of serial, desire to perform more than one task at the same time, and want to engage in explorative learning (Bilgiç et al., 2011: 260). As it can be understood by these examples, digital natives were born in the digital world so their lives were blended with that world. It is possible to qualify these differences between digital natives and digital immigrants as periods where the generation gaps are mostly seen.

Research by social psychologists shows, "that people who grow up in different cultures do not just think about different things, they actually think differently. The environment and culture in which people have raised affects and even determines many of their thought processes" (Prensky, 2001b). It must not be ignored that individuals who were born and lived in different cultures will have different lifestyles and perspectives on life. In this respect, technology has endlessly increased its power thanks to high levels of adoption by users, referred to as digital natives, who lived in different cultures and who spread the technology by redefinition (Castell, 2013: 41). As a result of the rapid spreading of developing technologies, the gap between individuals who have cultural differences is increasing day by day and individuals continue to try to comply with new technology and its culture.

Digitalization of the Culture

According to Johny Ryan (2010: 7), the Internet as one of next generation technologies is the child of the industrial age and in particular, the use of steam power, telegraphs, industrialized commerce, and wars accelerated the transition to the

digital age. Then, the increase in information and communication technologies with the help of the domination of free-market capitalism and globalization showed how technoscience is important and effective. In this direction, the simultaneous development of science, media, and capital in the domination of digital technology accelerated many things and created digital culture as a different culture. Digital technology has a vital importance in terms of being the founder and determiner of these developments.

Gere (2008: 14–18) expressed the digital culture and emergence of digital culture as "Digital culture in its present specific form is a historically contingent phenomenon, the various components of which first emerge as a response to the exigencies of modern capitalism, and then are brought together by the demands of mid-twentieth century warfare". The main components of digital culture are organized as norms, values, and expectations (Deuze, 2005: 63). The main critical points of digital culture are expressed as its features of access, its interactivity, and its authenticity (Hand, 2008: 2).

With these features, the opportunity for merging images and texts offers a wide range of multimedia applications (Özçağlayan, 1998: 94). Today, the concept of new media is frequently used instead of the concept of multimedia which is qualified as a platform which includes various communication components in a network (Özçağlayan, 1998: 146). According to Castells (2013: 495: 496), there are four prominent features in the influence of multimedia/new media on social and cultural change. Multi-media:

- is a common social and cultural differentiation leading to the deterioration of users/ audience/readers;
- is the increase in social stratification among users;
- is the integration of all messages in a common cognitive template; and
- is used to confine a wide part of cultural expressions by protecting all differences into its space.

It can be understood from the expressions above, that it is important to observe cultural change through new social formations as a consequence of new technologies and interactions among these formations. For this reason, new formations and the process of these formations should be focused on (Castells, 2013: 91). The reason for this can be expressed as the fact that new communication systems have been digitalized, networks have been created, and the changes cover and transfer all cultural expressions. Taking cultural expressions in part in a communication system, which is based on digitalized electronic production, distribution, and signal exchange, has serious influences on social formations and processes. In this direction, morals, authority, traditional values, belief systems,

and ideologies must adapt themselves to the new system and increase their power (Castells, 2013: 499–500).

Changes occurred in the culture thanks to digitalization, including not only social changes but also many differences such as changes in interpersonal relations. On this context, the fact that many communication forms such as interpersonal communication follow the way of digital communication instead of traditional communication is seen as a significant example. In a similar manner, it is possible to read cultural change and its digital culture through changes and transformations in value and belief systems of public opinion. For this reason, Manovich (2001: 9–17) entitles everything about the new media created by digital culture in the digitalization direction as media objects. New media objects can be digital stills, digitally composited films, virtual three-dimensional (3-D) environments, computer games, and hypermedia websites. The new media objects that are also formed by taking real world's physical objects as the base represent their cultural meanings. This means that computerization of culture not only created new cultural forms such as computer games and virtual worlds, but also redefined existing structures like photography and cinema.

Like in culture, the redefinition of current culture structures in digital culture is rooted in its spreading power. At this point, memes are very important for cultural production and transfer dimension in terms of spreading digital culture. Memes are infectious patterns of "cultural information" that get passed from mind to mind and directly generate and shape the mindsets and significant forms of attitude and actions of a social group (Knobel ve Lankshear, 2007: 199). On this context, according to Tredinnick (2008: 15), "meme theory has emerged as another way of explaining culture, describing the propagation of culture through the replication of memes". According to Dawkins (2006: 192), examples of memes are tunes, ideas, sentiments, catch-phrases, clothes fashions, and ways of making pots or of building arches. "Just as genes propagate themselves in the gene pool by leaping from body to body via sperms or eggs, so memes propagate themselves in the meme pool by leaping from brain to brain via a process which, in the broad sense, can be called imitation". According to this formulation, imitation includes copying any idea or behavior from one mind to another mind. It is possible to explain the importance of the imitation process as the protection of the core of the transformed thing and its transformation as Dawkins's expression (1999: 43) or its mutation as Blackmore's expression (2006: 193). On this context, to know and understand memes of society has an important place in order to understand and make sense of the cultural dimension of experienced digitalization in the everyday life of society.

On that case, does mentioning cultural change mean a change in communication? Culture is transformed via communication and thus, cultures belief systems and traditions are transformed greatly and continue to transform. An electronic system which has global access, merges all communication media, and has interaction potential continuously changes the culture (Castells, 2013: 441). On this context, changing phenomenon of communication in both content and form terms refers to the transformation of social, political, economic, and cultural structures into a digital structure. Today, traditional structures protect their cores, but they have appeared in a different structure. In other words, all of these structures are produced to be compatible with digital media, to adapt to the digital world, and to take their place in digital media.

A Representation of Cultural Change: Cyber Culture

The concept of cyber culture has been used since the mid-1990s. Cyber culture studies can be seen as ways of thought on how humans and digital technologies interact with each other and how they exist together. On this context, cyber culture includes thinking about the place of representations of changing new technologies in human life and how they changed or will change the images/meanings (Bell, 2007: 5–6). Furthermore, cyber culture is the direct predecessor of our current digital cultures (Gere, 2008: 81).

As Barthes and Baudrillard expressed, all communication forms, like new communication technologies are based on production and consumption of indicators. Cultures are also composed of these communication processes. In this direction, it is possible to say that individuals exist in a symbolic environment and behave accordingly. By this way, it is more appropriate to deal with new communication systems as in the construction of virtual reality terms instead of starting with the virtual reality. Also, new communication systems changed time and space radically and real virtuality culture has appeared as a new culture (Castells, 2013: 497–500). This area transformed into a potential where everyone can experience cultural deterritorialization as a consequence of new culture. This concept which was placed in a universal value position brings the possibility of virtual mobility for individuals into question. For this reason, it came with a lot of social transformations (Cheviron, 2014: 79).

For Castells, the culture of real virtuality has a number of important characteristic properties, some of them which have already been discussed. "First, there is its inclusiveness, its comprehensive 'capture' of all cultures. Second, because it is part of the network society, it follows the network logic, of on or off – to be in the network is to be part of culture, to be switched off is to be excluded. Third, its diversity and

multi-modality mean it can accommodate cultural differences; it does not require us all to be the same but offers something for everyone. This is not to say there are no barriers to participation, as already noted. In fact, the ability to participate is seen by Castells as a crucial index of domination: who gets to talk, who to listen, and who is kept out of the loop? Fourth, the new media culture weakens traditional transmissions if they are still sent through other means. And fifth, the culture of real virtuality radically reconfigures relations of space and time, creating or at least propagating the space of flows and timeless time" (Bell, 2007: 83–84).

Baudrillard emphasizes the extinction of reality. He expressed in his main idea that "we have been lost the fact in Mediaeval and reality in the 20th century slowly" (Bayrı, 2011: 97). He uses simulation or hyper-reality concepts to explain the destruction of reality. Simulation is the "reproduction of operation form which is particular to any vehicle, machine, and system, the phenomenon with the purpose of analysis, exhibition or explanation via any model or computer software (Baudrillard, 2011: 7). In other words, it is the creation of reality via models which do not include reality (Baudrillard, 2011: 14) or show non-existing thing as if it exists. This concept covers technological meaning and also in more general terms, includes political, cultural, and economic ones (Adanır, 2008: 14). According to Baudrillard (2008: 131), society must be purely a reproduction society by postmodernism. The definition of reality transformed into the "thing which can be reproduced equivalently". For this reason, everything became the copy of another one and exists thanks to continuously structured reproduction.

There are lots of areas which structure themselves in the digitalization direction. On this context, security and safety areas are one of the most important areas where social change occurs in cyber society. Individuals are concerned about their security and safety in their everyday lives. As a result of this concern, individuals use soldiers in order to protect country borders and use policemen in order to provide homeland security. However, in the digital age, digital areas create security gaps because they do not exist physically. In the cyber world, there are numerous binary data on computers and if it is thought that there are differences between the physical area and the cyber area, it is more difficult to perceive dangers in the cyber world. There is not any tangible existence and the state of stealing digital information makes cyber-attacks more dangerous (Mitra, 2010: 11–13). Additionally, it is possible to add digital stalking, digital hate, viruses, cyber terrorism, and digital spying as negative examples which came with cyber culture (Mitra, 2010). At this point, it is necessary to mention disturbing culture as "digital stalking" which appeared from the digital age in the cyber area. It is possible to describe the stalking word, which is used to pursue stealthily and harass obsessively, as a means of accessing

information about the individual against his or her will and following him or her obsessively and then being disturbed. Digital stalking, which is accepted as a disease of the new age, can be oriented to individuals who are liked and sometimes can be the followers of liked individuals. However, it is sometimes oriented to disliked ones. Shortly, understanding digital stalking created by cyber culture is a significant example to understand the disturbing culture of the digital age.

Conclusion

One of the most important meanings added by new technologies is digital culture. The importance of this concept is increasing day by day. So, the description of digital culture, its scope, and its limitations become the key concern for both scholars and individuals. However, it is not possible to determine borders exactly because of continuous mobility.

In this period, the influence of digital culture is intensively seen in social life. Furthermore, radical changes occurring in culture and the Internet as a vital role in individuals' everyday lives is seen as the most important component of digitalized culture. It is not new to evaluate cultural and social transformation through technological changes and developments. The reason for this can be expressed as technological changes and new communication technologies that in particular come with cultural changes and form culture. McLuhan summarizes this situation with the discourse of "medium is the message" and emphasizes the influence of medium on culture. McLuhan focuses on the form instead of the content and remarks that used medium form and change individuals' perceptual habits. At this point, it is seen as very important to read cultural change which evolved to the digital culture through change and development created by technology.

Additionally, next generation technological tools not only changed culture, but also the users. Users are classified as digital natives or digital immigrants on the basis of being born before or after digital technology. After this classification, the characteristics of users, how they command technology, and how they articulate next generation technology was attempted to be explained. Although individuals who were born before 1980 and tried to adapt themselves to digital technologies are qualified as digital immigrants, individuals who were born after 1980 in the digital world are qualified as digital natives in foreign literature. It should not be missed that digital immigrants themselves feel like more of an outsider in this world compared to digital natives. If discrimination based on the generation gap in Turkey is looked at, digital innovations come late so there is not any strict discrimination. Also, there is a crossbreed population between these two discriminations and it is observed that they are qualified as digital crossbreeds.

In addition to this, the concept of digital culture refers to new social and cultural transformation. With these innovations, the emergence of new cultural products and the transformation of the culture revealed the importance of the cyber culture area. In this new cyber area, the situation of disappearing time and space limitations and the transition to the new dimension is seen. In other words, it is possible to say that social structure formed by technological changes is composed of various cultural forms. The digital world came with intercultural integration and created an adaptation environment. The adaptation process created radical changes and lifestyles which take technology as the base. By Baudrillard's expressions, new technologies put simulations in realities' places and people's lives are taking a more fictional form day by day. In a globalized and digitalized world, it is more difficult to know the fact. Consequently, it will not be wrong to say the sentence "the world is getting smaller" from Mark Dinning's song which makes cultural and social change more visible and increase its reality day by day.

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